

An Analysis of Revisions to OAIS and the “Designated Community” in Digital Preservation

Nathan Moles

ABSTRACT

In digital preservation, the concept of a “Designated Community” from the Reference Model for an Open Archival Information System (OAIS) is used to articulate the group or groups of prospective users for whom information is preserved. Concerns have been raised about this concept and its potential implications. However, OAIS has recently undergone a major revision. This study examines the extent to which these revisions address or mitigate concerns regarding the Designated Community. Issues from the literature are grouped into three areas: the concept’s implementation, its potential misapplication, and its incompatibility with the mandates of institutions that serve broad and diverse communities. Major changes related to the Designated Community are identified and considered in relation to these issues. The analysis reveals that the revisions productively contribute to concerns in the first two areas but fail to address the third. The conclusion is that the process of revising OAIS has not drawn from insights into this topic in the literature.

INTRODUCTION

As a domain of research and practice, digital preservation aims to keep authentic digital information accessible into the future.¹ This objective exists in the face of media failure and technological obsolescence; mismanagement and deliberate sabotage; and changes in the broader social, intellectual, and organizational contexts in which digital information exists.² Much of the effort in this direction is guided by the Reference Model for an Open Archival Information System (OAIS), an ISO standard that defines terms and conceptualizes the work of repositories undertaking digital preservation.³

One of the central concepts in OAIS is the *Designated Community*, defined by OAIS as the group or groups of prospective users for whom digital information is preserved.⁴ There is a growing conversation about the Designated Community in the digital preservation literature, and several scholars have identified the concept as problematic in some circumstances and even put forward alternate formulations.⁵ These studies have raised concerns about applicability and illustrated the need for further development. While this collective conversation is taking place, OAIS itself is evolving. A new version of the Reference Model was released in January 2025 with numerous changes that include a revised definition of the Designated Community, along with both minor modifications and more substantive updates to the concept. In light of these developments, this article aims to address the following research question: Do the revisions recently made to OAIS address or mitigate concerns regarding the Designated Community?

The following sections describe the role of the Designated Community in OAIS, provide a description of the methods used in this study, articulate three concerns about the concept raised in the literature, and summarize the major changes in the new version of OAIS. An analysis of the revisions is described before the discussion section and conclusion.

About the Author

Nathan Moles (nmoles@cmcc.ca) is Digital Collections & Reference Librarian, Canadian Memorial Chiropractic College. © 2026.

Submitted: 19 July 2025. Accepted for Publication: 26 September 2025. Published: 16 March 2026.

THE DESIGNATED COMMUNITY IN OAIS

In OAIS, there is an assumption that some conception of the users of preserved digital information, and their uses of it, is necessary to deliver usable digital information. The logic behind this is reasonable: digital information requires computational mediation, specifically the set of hardware, software, data, and processes that enable digital information to be rendered and manipulated. Changes or variations in that mediation result in differences in how that information is displayed in human-readable form and the manipulations or actions that can be done with it. The concept of a Designated Community crystallizes this assumption in OAIS. Critically, the Designated Community is not a body of actual users but a useful construct that allows those involved in preservation to look beyond the limitations of information about their current users.⁶ In this sense, the characteristics, practices, knowledge, and interests of the Designated Community can or should inform preservation processes, ensuring that the digital information that is the target of preservation is accessible, usable, and intelligible to those users.⁷ Conversely, due to the nature of computational mediation, a Designated Community is implied through preservation actions, even if not formally defined by a repository or if the formal definition is in conflict with the repository's actions.⁸

As one of the central concepts in OAIS, the Designated Community occupies a crucial place in the Reference Model. It is explicitly mentioned in three of the six Mandatory Responsibilities that a repository must assume to function as an OAIS Archive.⁹ At a more granular level, the Designated Community's *Knowledge Base*, the information that a person or system uses to understand the digital information in question, has been positioned as an end point for *Representation Information*, the descriptive information required to make preserved digital information meaningful.¹⁰ Moreover, a Designated Community and its Knowledge Base are critical for *Independent Understandability*, the characteristics of digital information that allow it to be understood by a Designated Community without requiring outside information or expertise, which is seen as a key measure of success in digital preservation.¹¹

The importance of the Designated Community extends beyond OAIS to the network of interconnected high-level standards and specifications that draw from the Reference Model's concepts and are built on its approach to digital preservation. These include the Producer-Archive Interface Methodology Abstract Standard (PAIMAS) and the Producer-Archive Interface Specification (PAIS), which together define and structure the submission of digital information to a repository, and the Audit and Certification of Trustworthy Digital Repositories, which defines the criteria that repositories must meet to be certified as Trustworthy Digital Repositories (TDR).¹² These standards and specifications demonstrate that how the components of OAIS are conceptualized holds real-world significance.

METHODS

This study focuses on analysis at the conceptual level. To structure the analysis, previous research was synthesized and organized thematically into three core concerns. These themes serve as a framework for evaluating the revisions made to OAIS. To identify these themes, a literature search was conducted using the keywords "digital preservation," "designated community," and "designated communities" across four databases: Scopus, Web of Science, ProQuest, and Google Scholar. In addition to the initial search results, reference lists of selected articles were reviewed to identify further relevant publications. Works by key scholars were also examined to ensure comprehensive coverage of the discourse surrounding the Designated Community concept.

The analysis of revisions to OAIS was conducted by identifying changes to the Reference Model and comparing the updated text against these three core concerns. This comparative approach enabled the identification of specific areas where the revised Reference Model addressed known limitations, incorporated emerging best practices, or responded to theoretical critiques. By aligning textual changes with documented scholarly and practitioner discourse, the analysis provided a grounded assessment of the OAIS's evolution and its responsiveness to the field's evolving needs.

In the next section, the three concerns are presented in detail, each representing a distinct but interrelated dimension of how the Designated Community concept has been interpreted and critiqued in the literature.

CONCERNS ABOUT THE DESIGNATED COMMUNITY

Since the introduction of the Designated Community concept, it has served as a focal point for several studies. The research on this topic falls into three broad and interconnected areas that together highlight concerns with how the concept has been formulated and its position within the OAIS understanding of digital preservation. These areas are (1) the concept's implementation in practice, (2) its potential misapplication, particularly in relation to certification, and (3) its incompatibility with the mandates and social obligations of certain types of institutions.

Keitel has characterized the Designated Community as being akin to a compass in that it provides a general direction for preservation actions without providing direct instructions for navigating obstacles in the immediate landscape.¹³ Elaborating on this metaphor, the instructions for immediate obstacles are guidance on implementation, and their absence has been noted by several scholars.¹⁴ Some have described the concept as elusive, others have argued that it is too abstract to be useful in the daily work of preservation and cannot be clearly determined.¹⁵ The question of implementation has even been the theme of events hosted by the Digital Preservation Coalition (DPC).¹⁶ This lack of guidance can be seen in questions surrounding how to define and understand a Designated Community, as well as how to navigate changes in the Designated Community and its Knowledge Base over time.

In response to this situation, scholars and practitioners have endeavored to create methods that supplement OAIS and serve these functions. Parsons and Duerr drew from their experience working at the National Snow and Ice Data Center (NSIDC) to make practical recommendations around the scoping of the Designated Community.¹⁷ These were further expanded by Baker, Duerr, and Parsons, who described practices of creating different data products for user groups with different levels of expertise and creating non-expert documentation to assist with unanticipated uses.¹⁸ Keitel and Mitcham summarized existing concerns and raised a set of questions to consider as guidance to practitioners.¹⁹

Others have created rich and elaborate methods for defining a Designated Community. Giaretta mapped the knowledge and skills of users into discrete modules that could be combined into what he termed *DC Profiles*.²⁰ The focus on knowledge and the approach of modeling proved to be popular with successive scholars. Chawuthai, Wuwongse, and Takeda proposed a logical model of knowledge evolution that placed meaning and understandability at the center of an approach built on linked data, Resource Description Framework (RDF), and Semantic Web technology.²¹ In the process, they expanded the concept of a Designated Community's Knowledge Base, introducing the concept of Underlying Community Knowledge (UCK), which is domain-specific and roughly maps to the Knowledge Base, and distinguishing it from Underlying Common Community

Knowledge (UCCK), which is more foundational knowledge that is shared by multiple Designated Communities.

Focusing on the discovery of characteristics of a Designated Community, Kärberg used web analytics derived from the web portal of the National Archives of Estonia to distinguish classes of users.²² Along a similar path, Kim proposed a method for defining Designated Communities on the basis of the formats of their web content and the underlying structure of their knowledge organization.²³ Unlike Kärberg, Kim's approach leveraged web content created directly by users, but in both cases, technical details served as a proxy for other dimensions of communities. In a study of legacy geospatial data, Locher defined a Designated Community by using a Delphi study of experts to identify user profiles and predict likely future technological changes.²⁴ These articles present helpful advice for practitioners but are still based on the assumption that there is a core Knowledge Base from which the digital information originates, and which more expert users can be assumed to be familiar. This is appropriate in some cases but not all, particularly those related to digital preservation in libraries, archives, and museums.

To overcome concerns of implementation in organizations that are centered around the preservation of cultural heritage, the nestor Working Group on Preservation Planning in Germany created a guidance document intended to supplement OAIS.²⁵ In this, the working group introduced the concept of *designated use* to describe the possible uses to which digital information can be put. This is defined at a foundational level and organized into a taxonomy of four basic uses: viewing or perceiving digital information; obtaining information from digital information; computational processing; and running an executable object. The designated use is operationalized by placing it within a triangulated decision-making framework that also contains the Designated Community and groups of similar digital information, termed a *preservation group*. The level of detail in which each of these concepts is defined is left in the hands of the institution responsible, providing some flexibility in application.²⁶ The guidance from nestor is some of the strongest available on the implementation of the Designated Community concept and provides a contribution of some measure to all three of the concerns discussed here.

The need for guidance in implementation as it relates to changes in the Designated Community over time is highlighted by Donaldson, Zegler-Poleska, and Yarmey.²⁷ In a study of data managers' perspectives on a Designated Community for a dataset of oil and gas exploration in Indiana, they found that there was agreement among participants that the Designated Community had changed over time, but a lack of consensus as to the nature of that change. More significant for the present study, Donaldson et al. found that the lack of consensus raised challenges for preservation.

In conjunction with issues of implementation, the use of the concept of a Designated Community raises the concern of misapplication. The issue at stake here is that the Designated Community will be engineered for the convenience of repository staff and management, rather than as an effective tool for achieving preservation objectives. Bettivia notes that since there is no guidance on implementation in OAIS, there is no mechanism to prevent a repository from defining a Designated Community that is consistent with its existing practices, independent of whether or not this aligns with its mandate or any potential future users that could be reasonably expected.²⁸ A mismatch between how the Designated Community is defined in the repository's documentation and how that definition is realized in practice could also be a mechanism by which misapplication occurs.²⁹ This would undermine the usefulness of the Designated Community as a reference point for preservation actions and Independent Understandability as a measure of successful preservation.

The concern over misapplication is particularly pressing in relation to TDR certification. The Designated Community has a central place in certification standards, for example, in the Nestor Seal for Trustworthy Digital Archives and in the Audit and Certification of Trustworthy Digital Repositories, where there is an assumption that repositories will have a well-defined Designated Community and efforts will be made to align preservation practices to serve the needs of these expected future users.³⁰ However, achieving an effective alignment between preservation actions and the needs of a Designated Community, even a well-defined one, is not an easy or straightforward task.³¹ Research by Frank and Rothfritz into the process of certification has shown that uncertainty regarding the concept of a Designated Community is a potential source of inconsistent policies and procedures.³² More concerning is that Frank and Rothfritz found that appeals to the Designated Community can easily be used to justify practices that differ from accepted norms in the domain. This is a significant point because Yakel, Faniel, Kriesberg, and Yoon have shown a strong association between repository actions, transparency into those processes, and perceptions of trust among members of a Designated Community.³³

While implementation and misapplication are serious concerns, neither is as fundamental as the issue of incompatibility. At the core of the Designated Community concept is a shift in the orientation of preservation. Bettavia described this as “preservation for someone rather than preservation of something.”³⁴ In the analogue world, users interact with the targets of preservation in a relatively direct and unmediated way. With digital information, however, all interactions are mediated by layers of hardware and software, which have affordances and constraints that shape the actions that can be done to or with them. Due to this reliance on mediating technology, there is a very understandable assumption in OAIS that the users and their use of the preserved digital information need to be considered throughout preservation processes. The Designated Community concept reflects this assumption. However, libraries, archives, and museums face very different preservation challenges than those that emerge in the stewardship of scientific data.³⁵

The concern that arises from the literature is that this understanding of digital preservation is necessarily exclusionary. Many institutions, particularly those in the cultural heritage space, are tasked with preserving digital information for wide audiences that lack a cohesive Knowledge Base, as well as clearly identifiable interests and use cases. As a reference point for decisions and actions in digital preservation, the Designated Community can have a significant impact on what gets preserved, the means by which it gets preserved, how it gets described through Representation Information, and the terms or forms of access. The selection of one or even a few identifiable user groups as the target audience for the preservation of digital information necessarily excludes many groups from consideration and conflicts with the mandates of memory institutions that have traditionally served broad publics.³⁶ Scholars like Bak have argued that the Designated Community and its related concepts are of very limited use in navigating this conflict.³⁷

To make the situation more problematic, attempting to impose a Designated Community on a heterogeneous user community opens the possibility of a power imbalance between the repository and the communities it serves. Repositories define their Designated Communities as part of their OAIS responsibilities but are in turn characterized by the communities they serve.³⁸ In the absence of clear guidance on implementing the Designated Community concept, Bettavia notes that this can be done without input from users or serious consideration of what they require from the repository, which would create a power imbalance between the users and the repository that is open to abuse.³⁹

To date, there have been several studies that have explored curation or preservation situations in which the concept of a Designated Community is incompatible with organizational objectives and the alternatives that have been developed. Huvila described the case of an archives related to two historical sites in Finland.⁴⁰ The archives in question used a decentralized and participatory approach that brought users into curation processes, allowing them to contribute to archival descriptions and draw connections between records, in the process repositioning archivists in a supporting or facilitating role. Huvila described this as an *open Designated Community* in which access to records and participation in archival processes are open to all interested parties but mediated by information professionals and informed by expert opinion. A different approach is taken by Boutard in a study of artists doing creative work with research data.⁴¹ Boutard described this as a *non-Designated Community* to capture potential future users of digital information that are outside of an intended Designated Community. These users approached scientific datasets from a different epistemic framework and thus had a different concept of the data's value and potential. This study encouraged epistemic pluralism in digital preservation and calls attention to how the conceptualization of the Designated Community precludes radically different users whose interests are legitimate in themselves.

Building on Bettivia's critique, the author explored two case studies in which the concept of a Designated Community was misaligned with the organizational mandate for specifically exclusionary purposes.⁴² The first contrasted the Designated Community with the curation of open government data (OGD) in the context of municipal government, while the second centered on the development of a digital preservation program at a small community archives.⁴³ In the absence of a clear Designated Community, curators and preservationists sought context-specific alternatives as a source of input to guide their actions. OGD curators drew from the broader discourse on open data and open government and incorporated users into the development of their curation program. Archivists at the community archives re-imagined the OAIS Mandatory Responsibilities to focus on actual users and positioned archivists as supporters and facilitators of access. Each case placed emphasis on the point of interaction between users and the repository through a web portal that allowed the repository to take on the responsibility of providing the technical means for rendering and manipulating the digital information.

The existing literature identifies the limitations of the Designated Community concept as it was articulated prior to the revision and presents possible directions for future development through expansions of the concept and methods related to it. Both research and practice in digital preservation would benefit from greater clarity and a deeper understanding of the concept of a Designated Community. The revision process offered an opportunity to achieve this by drawing from the research discussed here to build a more sophisticated approach.

REVISIONS TO OAIS AND THE DESIGNATED COMMUNITY

OAIS was developed and subsequently revised by the Consultative Committee on Space Data Systems (CCSDS), a body of space scientists who were initially interested in the preservation of digital information related to space science.⁴⁴ Both the creation of the Reference Model and the revisions for the new version were conducted through an open process. In the latest version, there are many revisions to OAIS, more than can be easily summarized or described here.⁴⁵ Some of these are very minor, such as changes in phrasing to improve consistency and changes to the diagrams for clarity. Others have been more significant, including new subsections and the introduction of an accompanying standard to the OAIS ecosystem, Information Preparation to Enable Long-Term Use (IPELTU), which provides guidance on the metadata needed to facilitate

long-term preservation.⁴⁶ This section focuses on the more significant changes, specifically those that pertain directly to the concept of a Designated Community and its application. Three significant changes will be discussed: the introduction of the concept of Preservation Objectives, the addition of a new section on Representation Information, and the addition of the Preservation Watch function to the Preservation Planning Functional Entity.

The most obvious change in the latest iteration of OAIS is the introduction of the concept of Preservation Objectives. OAIS defines a Preservation Objective as a “specific achievable aim which can be carried out using the Information Object.”⁴⁷ By a “specific achievable aim,” OAIS is referring to some use of the digital information that is identifiable and explicit. The Reference Model states that Preservation Objectives should be specific, in the sense of being clear from the perspective of the Knowledge Base in question; actionable, in the sense of achievable; and measurable, in that the achievement of the objective can be confirmed. Preservation Objectives are defined by the Archive, possibly with the involvement of stakeholders, and can change over time to maintain their alignment with a Designated Community and its Knowledge Base.⁴⁸ Although defined by the Archive, it is implied that this aim of use is rooted in and derived from the Designated Community and determined by the Archive’s understanding of that community:

Preservation Objectives are intended to allow the repository to make it possible to test whether the information actually is Independently Understandable by members of the Designated Community now and into the future, in particular having adequate Representation Information.⁴⁹

Preservation Objectives act as more specific targets for preservation services than had previously been specified by OAIS. Whereas the Designated Community articulates the anticipated users for digital information, Preservation Objectives narrow the spectrum of uses under consideration, making the Archive accountable for delivering information products that fit this defined aim and not others. With a narrow range of use as a reference, evaluating the usability and Independent Understandability of the digital information becomes inherently more measurable and testable.⁵⁰

To achieve this testability, the Preservation Objectives concept was integrated into the network of related concepts it interacts with, resulting in modifications to definitions of the Designated Community, Independent Understandability, and Representation Information. The definition of a Designated Community now reads in full as follows:

An identified group of potential Consumers who should be able to understand a particular set of information in ways exemplified by the Preservation Objectives. The Designated Community may be composed of multiple user communities. A Designated Community is defined by the Archive and this definition may change over time.⁵¹

Likewise, the definitions of Independent Understandability and Representation Information were modified with the additional phrase “as exemplified by the associated Preservation Objectives.”⁵² All three definitions now leverage Preservation Objectives as reference points: Representation Information maps the Data Object to human-friendly concepts, which have Independent Understandability within the Designated Community within the context of specific achievable aims.

Within the OAIS Information Model, the discussion of Representation Information has been reworked to further explain and clarify its role, for example, within Representation Information Networks and in relation to the Designated Community and its Knowledge Base.⁵³ Terminology

has been changed to reinforce that the entities previously called Structure Information and Semantic Information are forms of Representation Information by renaming them Structure Representation Information and Semantic Representation Information. Representation Information in the Information Model is supplemented by new nonnormative sections (under section 5.3 Adding Representation Information) that provide concrete examples of the different types of Representation Information. This was done to facilitate networks of Representation Information and to allow for Representation Information itself to be considered as a target of preservation.

Introduced with this version of OAIS is a new subfunction within the Preservation Planning Functional Entity, called Preservation Watch. Preservation Watch “is the role of collating preservation related information from a variety of internal and external entities.”⁵⁴ It connects information from the Monitor Designated Community and Monitor Technology functions and can include information about changes to the broader environment of the Archive. Within OAIS, it provides a means of aligning developments from these three areas. Triangulating these sources of information can shed light on Consumers, the Designated Community, and their Knowledge Base, which can lead to insights into the Independent Understandability of the digital information being preserved and the status of Preservation Objectives related to that information. Depending on the size of the Archive in question and the digital information it holds, Preservation Watch may serve to connect the operations of disparate departments and act as a valuable source of input for preservation planning that would otherwise be missed.

ANALYSIS AND FINDINGS

There can be little doubt that the revisions in the new version of OAIS are an overall improvement. The components of the Reference Model are clearer and more tightly connected, while the introduction of concepts like Preservation Objectives further develops OAIS as a framework for action. Minor changes to the figures make them more consistent and easier to read. However, as they relate to the Designated Community, these revisions only partly address two of the issues from the literature, implementation and misapplication, and fail almost completely on the question of incompatibility.

In relation to implementation, the revisions have been largely positive. The Preservation Watch sub-function will help by bringing a wider range of information about the Designated Community into the planning process, and the re-articulation of Representation Information clarifies where that information fits within metadata descriptions and what it needs to describe. However, these are fairly minor contributions. The primary impact on implementation comes from Preservation Objectives making the deliverables narrower and more concrete. This will simplify the provision of information services by limiting the range of information uses that need to be accommodated. Likewise, Independent Understandability can be evaluated in the context of specified Preservation Objectives, supporting its use as a measure of successful preservation.

These advancements come with a cost. The implementation of Preservation Objectives gives the Archive license to disregard other forms of use, making access by those outside of the Designated Community more difficult and aggravating the issue of incompatibility. The case described by Boutard, of artists using research data for creative work, is a telling example.⁵⁵ Preservation Objectives for these data could be aligned with OAIS and be usable to their Designated Community of scientists in their research, while simultaneously lacking the level of context or description necessary for artists or other nonspecialists to use them in other ways. Although interrelated, Preservation Objectives and Independent Understandability remain separate concepts, with the

former focused on computation and the latter on semantics. The dissemination of information products that facilitate uses aligned with Preservation Objectives does not ensure that the information in question will be understandable to users from the Designated Community. There is a risk that those responsible for preservation will focus on achieving the Preservation Objectives and ignore Independent Understandability altogether, undermining the larger project of preservation in the process.

On the question of misapplication, the Preservation Watch subfunction will help by providing triangulated sources of information about the Designated Community, its Knowledge Base, and changes in its use of technology. In practice, this should make meaningful information more difficult to ignore and bring repositories more in line with their prospective users. It will be more difficult for repository staff to justify questionable practices by appealing to the Designated Community when preservation-related decision-making is done in a richer information environment. However, achieving effective alignment between the Designated Community and the Archive's preservation actions remains a challenge. Revisions related to Representation Information are of little assistance here, and there is a concern that an overemphasis on Preservation Objectives can be harmful if those targeted uses are not well-grounded by the Designated Community. The effectiveness of the Preservation Watch subfunction in mitigating this concern is untested.

The revisions to OAIS do nothing to mitigate the incompatibility of the Designated Community concept with the mandates of repositories that serve broad publics. Preservation Objectives add another layer to the conceptual framework of OAIS, but extending the framework in this direction does not address the needs of potential users who are outside of it. As an area of Archive operations, the parameters of Preservation Watch depended on how the Designated Community is defined and so provide no perspective outside of that. Linking the definition of Representation Information to Preservation Objectives anchors metadata descriptions in information about the Designated Community and its Knowledge Base. All three major revisions are built on the same core assumption—that a boundary can be drawn around a subset of all possible users and that this subset can be defined in sufficient detail that the exercise will be productive for preservation efforts. In cases where this assumption is problematic or does not apply, the issue of incompatibility continues to exist.

DISCUSSION

The common thread across all three issues is that very little of the discussion, guidance, methods, or conceptual nuance in the literature was incorporated into the OAIS revisions. This is somewhat surprising given the open process through which OAIS was revised, and much of this literature speaks directly to the limitations of earlier versions. It should be noted that the conceptual advancements introduced by Huvila and Boutard, along with the critique made by Bettivia, conflict with the underlying assumptions of OAIS, making them difficult to integrate without giving the Reference Model a deep re-think. For some of the more implementation-related developments, for example, the methods created by Kim, Kärberg, or Locher, there is a potential concern that they are not adequately generalizable across the full spectrum of repositories that would seek to implement OAIS. However, the current and earlier versions of the standard have included additional sections and references that are intended to be informational in an Annex. These sources could have been included in that capacity.

There is one exception to this point, and it is somewhat removed from the Designated Community. The concept of Preservation Objectives appears to have been inspired by the concept of

Preservation Intent.⁵⁶ Developed as part of the digital preservation operations at the National Library of Australia, Preservation Intent is defined as “a clear articulation of a commitment to preserve an object, the specific elements of the object that should be preserved, and a clear time line for the duration of preservation.”⁵⁷ Although there is no reference to Preservation Intent in the latest version of OAIS, it strongly echoes the definition and function of Preservation Objectives. Preservation Intent statements are linked explicitly with preservation planning and the identification of significant properties and define what repositories are responsible for and the technical terms of access.⁵⁸

Like Preservation Objectives, Preservation Intent statements can be problematic if they result in situations that create barriers for certain forms of use or groups of users that are outside of the repository’s commitments. The processes for developing Preservation Intent statements described by del Pozo et al. and Webb et al. are reminiscent of the concerns raised by Bettivia.⁵⁹ Del Pozo et al. describe preliminary steps that happen internally among the repository staff, and Webb et al. discuss Preservation Intent statements made in consultation with collections managers and digital preservation specialists, without the involvement of users or the communities that produced the content.⁶⁰ Although these processes seem to have raised some awareness of a broader range of stakeholders, without consideration of the critiques outlined here, making Preservation Intent statements opens the door for repositories to use them in self-serving ways that reinforce existing perspectives while ignoring users and communities. Based on this analysis of the standard, it can be concluded that the revisions to OAIS failed to take these concerns into consideration.

CONCLUSION

Scholarship in digital preservation has raised concerns related to the OAIS concept of a Designated Community. This study investigated whether recent revisions to OAIS addressed or mitigated these concerns. The issues in the literature were grouped into three distinct areas: implementation, misapplication, and incompatibility. Three major revisions relating to the Designated Community were identified in the latest version of OAIS. The subsequent comparison found that revisions did contribute positively to issues of implementation and misapplication, though without completely ameliorating them. However, these revisions failed to address concerns about the incompatibility of the concept with the mandates of some institutions that hold digital preservation responsibilities. These insights strongly suggest an internal dynamic either in CCSDS or the open process of revision that prioritizes some perspectives and marginalizes others, which warrants further study. Evaluation of the revised Designated Community concept would particularly benefit from an exploration of the revision process and from further empirical study.

ENDNOTES

¹ M. Mois, C. P. Klas, and M. L. Hemmje, “Digital Preservation as Communication with the Future,” in *2009 16th International Conference on Digital Signal Processing* (IEEE, 2009), 1–8, <https://doi.org/10.1109/ICDSP.2009.5201104>.

² Seamus Ross, “Approaching Digital Preservation Holistically,” in *Information Management and Preservation*, edited by Alistair Tough and Michael Moss (Oxford, UK: Chandos Press, 2006), 115–53, <https://doi.org/10.1016/B978-1-84334-142-0.50006-2>.

- ³ *Reference Model for an Open Archival Information System (OAIS): Recommended Practice (Magenta Book)* (Washington, DC: Consultative Committee for Space Data Systems, 2012), https://ccsds.org/wp-content/uploads/gravity_forms/5-448e85c647331d9cbaf66c096458bdd5/2025/01//650x0m2s.pdf.
- ⁴ *Reference Model for an Open Archival Information System* (2012).
- ⁵ Rhiannon S. Bettivia, "The Power of Imaginary Users: Designated Communities in the OAIS Reference Model," *Proceedings of the Association for Information Science and Technology* 53, no. 1 (2016): 1–9, <https://doi.org/10.1002/pr2.2016.14505301038>; Nathan Moles, "Open Government Data (OGD): Challenging the Concept of a 'Designated Community,'" *Records Management Journal* 31, no. 1 (2021): 18–33, <https://doi.org/10.1108/RMJ-10-2019-0065>; Isto Huvila, "Participatory Archive: Towards Decentralised Curation, Radical User Orientation, and Broader Contextualisation of Records Management," *Archival Science* 8, no. 1 (2008): 15–36, <https://doi.org/10.1007/s10502-008-9071-0>; Guillaume Boutard, "Alter-Value in Data Reuse: Non-Designated Communities and Creative Processes," *Data Science Journal* 19, no. 23 (2020), <https://doi.org/10.5334/dsj-2020-023>; Nathan Moles, "Preservation for Diverse Users: Digital Preservation and the 'Designated Community' at the Ontario Jewish Archives," *Journal of Documentation* 78, no. 3 (2022): 613–30, <https://doi.org/10.1108/JD-02-2021-0041>.
- ⁶ Bettivia, "The Power of Imaginary Users."
- ⁷ Christian Keitel, "Der Einzige Kompass, Den Wir Haben: Zur Kritik Der Designated Community," *Informationswissenschaft: Theorie, Methode Und Praxis* 5, no. 1 (2018): 25–37, <https://web.archive.org/web/20230725152637/https://bop.unibe.ch/iw/article/view/4245>; Moles, "Preservation for Diverse Users"; Rebecca D. Frank and Laura Rothfritz, "Designated Community: Uncertainty and Risk," *Journal of Documentation* 79, no. 4 (2023): 880–97, <https://doi.org/10.1108/JD-07-2022-0161>; Christian Keitel and Jenny Mitcham, *Defining the Designated Community* (Digital Preservation Coalition, July 2023), <http://doi.org/10.7207/twgn23-01>.
- ⁸ Bettivia, "The Power of Imaginary Users."
- ⁹ *Reference Model for an Open Archival Information System* (2012).
- ¹⁰ *Reference Model for an Open Archival Information System* (2012); D. Giaretta et al., "Representation Information for Interoperability Now and with the Future," in *2005 IEEE International Symposium on Mass Storage Systems and Technology* (IEEE, 2005), 42–46, <https://doi.org/10.1109/LGDI.2005.1612462>.
- ¹¹ *Reference Model for an Open Archival Information System* (2012); Stephen Abrams, "Tacit Attitudinal Principles for Evaluating Digital Preservation Success," *Archival Science* 21, no. 3 (2021): 295–315, <https://doi.org/10.1007/s10502-021-09360-5>.
- ¹² *Producer-Archive Interface Methodology Abstract Standard: Recommended Standard (Magenta Book)* (Washington, DC: Consultative Committee for Space Data Systems, 2004), https://ccsds.org/wp-content/uploads/gravity_forms/5-448e85c647331d9cbaf66c096458bdd5/2025/01//651x0m1.pdf; *Producer-Archive Interface Specification (PAIS): Recommended Standard (Blue Book)* (Washington, DC: Consultative Committee for Space Data Systems, 2014), https://ccsds.org/wp-content/uploads/gravity_forms/5-448e85c647331d9cbaf66c096458bdd5/2025/01//651x1b1.pdf; *Audit and Certification of Trustworthy Digital Repositories (Magenta Book)* (Washington, DC: Consultative Committee for Space Data Systems, 2024), https://ccsds.org/wp-content/uploads/gravity_forms/5-448e85c647331d9cbaf66c096458bdd5/2025/01//652x0m2.pdf.
- ¹³ Keitel, "Der Einzige Kompass."
- ¹⁴ Tarvo Kärberg, "Digital Preservation and Knowledge in the Public Archives: For Whom?," *Archives and Records* 35 (2014): 126–43; Bettivia, "The Power of Imaginary Users"; Greg Bak, "Trusted by Whom? TDRs, Standards Culture and the Nature of Trust," *Archival Science* 16 (2016): 373–402, <https://doi.org/10.1007/s10502-015-9257-1>; Devan Ray Donaldson, Ewa Zegler-Poleska, and Lynn Yarmey, "Data Managers' Perspectives on OAIS Designated Communities and the FAIR Principles: Mediation, Tools and Conceptual Models," *Journal of Documentation* 76, no. 6 (2020): 1261–77; Frank and Rothfritz, "Designated Community: Uncertainty and Risk."

- ¹⁵ Donaldson, Zegler-Poleska, and Yarmey, "Data Managers' Perspectives on OAIS Designated Communities and the FAIR Principles"; Keitel, "Der Einzige Kompass."
- ¹⁶ Mitcham, Jenny, "Designated Communities—A Disconnect between Theory and Practice?," *Digital Preservation Coalition Blog* (blog), January 6, 2023, <https://www.dpconline.org/blog/designated-communities-applying-the-theory-in-practice>.
- ¹⁷ M. A. Parsons and R. Duerr, "Designating User Communities for Scientific Data: Challenges and Solutions," *Data Science Journal* 4 (2005): 31–38, <https://doi.org/10.2481/dsj.4.31>.
- ¹⁸ Karen S. Baker, Ruth E. Duerr, and Mark A. Parsons, "Scientific Knowledge Mobilization: Co-Evolution of Data Products and Designated Communities," *International Journal of Digital Curation* 10, no. 2 (2016): 110–35, <https://doi.org/10.2218/ijdc.v10i2.346>.
- ¹⁹ Keitel and Mitcham, *Defining the Designated Community*.
- ²⁰ David Giaretta, *Advanced Digital Preservation* (Berlin, Germany: Springer, 2011).
- ²¹ Rathachai Chawuthai, Vilas Wuwongse, and Hideaki Takeda, "A Formal Approach to the Modelling of Digital Archives," in *The Outreach of Digital Libraries: A Globalized Resource Network*, edited by Hsin-Hsi Chen and Gobinda Chowdhury (Berlin, Germany: Springer, 2012), 179–88, https://doi.org/10.1007/978-3-642-34752-8_24.
- ²² Kärberg, "Digital Preservation and Knowledge in the Public Archives."
- ²³ Yunhyong Kim, "'Designated Communities': Through the Lens of the Web," *International Journal of Digital Curation* 10, no. 1 (2015): 184–195, <https://doi.org/10.2218/ijdc.v10i1.360>.
- ²⁴ A. E. Locher, "Characterizing Potential User Groups for Versioned Geodata," in *Service-Oriented Mapping: Changing Paradigm in Map Production and Geoinformation Management*, edited by J. Döllner, M. Jobst, P. Schmitz (Cham, Switzerland: Springer, 2019), https://doi.org/10.1007/978-3-319-72434-8_20.
- ²⁵ nestor Working Group Preservation Planning, *nestor Guideline for Preservation Planning Procedural Model and Implementation* (nestor, 2014).
- ²⁶ Sabine Schrimpf and Christian Keitel, "nestor Guideline for Preservation Planning—A Process Model," *LIBER Quarterly: The Journal of the Association of European Research Libraries* 23, no. 3 (2014): 201–13, <https://doi.org/10.18352/lq.9166>.
- ²⁷ Donaldson, Zegler-Poleska, and Yarmey, "Data Managers' Perspectives on OAIS Designated Communities and the FAIR Principles."
- ²⁸ Bettivia, "The Power of Imaginary Users."
- ²⁹ Bettivia, "The Power of Imaginary Users."
- ³⁰ nestor Working Group Trusted Repositories – Certification, *Explanatory Notes on the nestor Seal for Trustworthy Digital Archives* (nestor, 2013); *Audit and Certification of Trustworthy Digital Repositories, Magenta Book* (Washington, DC: Consultative Committee for Space Data Systems, 2011).
- ³¹ Bettivia, "The Power of Imaginary Users."
- ³² Frank and Rothfritz, "Designated Community: Uncertainty and Risk."
- ³³ Elizabeth Yakel, Ixchel M. Faniel, Adam Kriesberg, and Ayoung Yoon, "Trust in Digital Repositories," *International Journal of Digital Curation* 8, no. 1 (2013), <https://doi.org/10.2218/ijdc.v8i1.251>.
- ³⁴ Bettivia, "The Power of Imaginary Users," 3.

- ³⁵ Ruth Duerr et al., “Challenges in Long-Term Data Stewardship,” in MSST, 2004, 47–67, <https://msstconference.org/MSST-history/2004/Papers/05-Duerr-a.pdf>.
- ³⁶ Bettivia, “The Power of Imaginary Users”; Keitel, “Der Einzige Kompass.”
- ³⁷ Bak, “Trusted by Whom?”
- ³⁸ Bettivia, “The Power of Imaginary Users”; Keitel, “Der Einzige Kompass.”
- ³⁹ Bettivia, “The Power of Imaginary Users.”
- ⁴⁰ Huvila, “Participatory Archive.”
- ⁴¹ Boutard, “Alter-Value in Data Reuse.”
- ⁴² Bettivia, “The Power of Imaginary Users”; Moles, “Open Government Data”; Moles, “Preservation for Diverse Users.”
- ⁴³ Moles, “Open Government Data”; Moles, “Preservation for Diverse Users.”
- ⁴⁴ Christopher A. Lee, “Defining Digital Preservation Work: A Case Study of the Development of the Reference Model for an Open Archival Information System” (PhD diss., University of Michigan, 2005).
- ⁴⁵ David Giarretta et al., “OAIS Version 3 Updates,” in *Proceedings of the 16th International Conference on Preservation of Digital Objects* (iPRES, 2019).
- ⁴⁶ *Information Preparation to Enable Long-Term Use (Magenta Book)* (Washington, DC: Consultative Committee for Space Data Systems, 2024), https://ccsds.org/wp-content/uploads/gravity_forms/5-448e85c647331d9cbaf66c096458bdd5/2025/01//653x0m1.pdf.
- ⁴⁷ *Reference Model for an Open Archival Information System (OAIS): Recommended Practice (Magenta Book)* (Washington, DC: Consultative Committee for Space Data Systems, 2024), 1–14, https://ccsds.org/wp-content/uploads/gravity_forms/5-448e85c647331d9cbaf66c096458bdd5/2025/01//650x0m3.pdf.
- ⁴⁸ *Reference Model for an Open Archival Information System* (2024).
- ⁴⁹ *Reference Model for an Open Archival Information System* (2024), 2–8.
- ⁵⁰ Giarretta et al., “OAIS Version 3 Updates”; David Giarretta, *Thinking Digital Preservation: For the Serious, Intelligent, Digital Preserver* (independently published, 2022).
- ⁵¹ *Reference Model for an Open Archival Information System* (2024), 1–11.
- ⁵² *Reference Model for an Open Archival Information System* (2024), 1–12, 1–15.
- ⁵³ *Reference Model for an Open Archival Information System* (2024).
- ⁵⁴ *Reference Model for an Open Archival Information System* (2024), 4–16.
- ⁵⁵ Boutard, “Alter-Value in Data Reuse.”
- ⁵⁶ Colin Webb, David Pearson, and Paul Koerben, “‘Oh, You Wanted Us to Preserve That?!’ Statements of Preservation Intent for the National Library of Australia’s Digital Collections,” *D-Lib Magazine* 19, nos. 1–2 (2013), <https://doi.org/10.1045/january2013-webb>; Nick del Pozo, Andrew Stawowczyk Long, and David Pearson, “Land of the Lost’: A Discussion of What Can Be Preserved through Digital Preservation,” *Library Hi Tech* 28, no. 2 (2010): 290–300, <https://doi.org/10.1108/07378831011047686>.
- ⁵⁷ Webb, Pearson, and Koerben, “‘Oh, You Wanted Us to Preserve That?!,’” 290.
- ⁵⁸ Webb, Pearson, and Koerben, “‘Oh, You Wanted Us to Preserve That?!’”; del Pozo, Long, and Pearson, “Land of the Lost.”

⁵⁹ Rhiannon S. Bettivia, "Encoding Power: The Scripting of Archival Structures in Digital Spaces Using the Open Archival Information System (OAIS) Reference Model" (PhD diss., University of Illinois at Urbana-Champaign, 2016).

⁶⁰ Webb, Pearson, and Koerben, "Oh, You Wanted Us to Preserve That?!"