
HARVARD DRS FUTURES PUBLIC RFP - 00117-2024

Harvard University developed a Request for Proposals used to select a vendor for the Digital Repository Services (DRS) Modernization project DRS Futures. In the interest of transparency and in support of the wider digital preservation community, Harvard is making this public version of the RFP available.

Vendors were invited to participate in the proposal process and the RFP was made available to all invited participants. Vendors were asked to indicate an interest in participating and sign a mutual non-disclosure agreement (NDA) prior to submitting a proposal.

Harvard limited communication regarding the RFP to the Harvard Sourcing Manager to ensure fairness to all vendors.

HARVARD DIGITAL REPOSITORY REQUEST FOR PROPOSALS ANNOUNCEMENT

Harvard issued a Request for Proposals (RFP) for new digital repository infrastructure supporting both curatorial processing and preservation persistence. The repository system will replace Harvard's existing Digital Repository System (DRS). The announcement served as an introduction to the scale and scope of the project and gave vendors an opportunity to decide if they would like to participate in the call for proposals.

BACKGROUND

Harvard Library Digital Repository Service (DRS) has reached the conceptual and operational limits of its current design and implementation after 22 years of successfully managing and preserving more than 10.7 million digital objects, 913 million files, more than 90 formats, and 1.8 PB. The revitalized repository infrastructure must address identified needs, goals, and aspirations regarding function, scale, performance, sustainability, and innovation. The new system must be capable of supporting effective and efficient preservation of all existing, newly emerging, and unanticipated forms of digital scholarship and institutional records. Historically, the DRS has averaged annual growth of 10-15%. Harvard anticipates new initiatives in research data management, electronic records management, and mass audio/video digitization will increase the preserved corpus upwards of five to tenfold over the next several years. As a generational modernization, it is important that the new infrastructure is flexible and innovative enough to remain robust and productive in the face of ever-evolving organizational mission, strategic priorities, stakeholder ambition, and environmental conditions. Consequently, Harvard seeks a new repository system to steward and preserve its deep, broad, rich, and unique digital collections.

SCOPE

Harvard has sufficient storage for its current digital collections and is looking for a flexible, extensible repository management system providing the highest functional levels of preservation service, assurance, and productivity through a clean, intuitive user experience. The system will be interoperable with other systems, including metadata providers and discovery gateways, and provide comprehensive support for asset management and digital preservation. Harvard is not seeking to replace its current storage solution but is open to exploring the possibility of a different storage solution if a compelling repository system requires it.

Harvard would prefer a solution that allows for storage and repository services to function independently, that is, a system in which Harvard is able to change software platforms without migration of data in the storage layer. Harvard requires a system that supports all preservation repository functions while also connecting to existing Harvard systems for cataloging, reporting, access, and delivery to provide a seamless experience to meet the business needs and requirements of our users. The repository system has no responsibility for patron-facing discovery or access; all patron-facing discovery and delivery is the responsibility of other Harvard services. The repository system must provide content and metadata to those separate services as required but is not responsible for performing those roles.

COMMUNITY STANDARDS

Harvard is committed to engaging with and using industry and community standards. Harvard has incorporated the input of its own community stakeholders as well as wider industry standards as it developed the requirements for the new system.

Harvard's RFP is inspired by the Digital Preservation Coalition (DPC) [common requirements structure for preservation system procurement](#) which Harvard used to organize the system requirements and technical requirements.

REQUEST FOR PROPOSALS REQUIREMENTS AND PRIORITIES

1. GENERAL QUESTIONS

1.1 MISSION

- 1.1.1 The repository system must support effective, efficient, and persistent access to authentic digital information objects and affordance of legitimate digital information experiences. Please describe how your solution will meet Harvard's objectives both now and in the future.

1.2 STANDARDS

- 1.2.1 The repository system must meet mandatory Open Archival Information System (OAIS) responsibilities (ISO 14721:2012, § 3.1).
- 1.2.2 The repository system must be consistent with the OAIS reference model to the extent it is not extended or superseded by other explicit RFP requirements.

- 1.2.3 The repository system must support National Digital Stewardship Alliance (NDSA) Levels of Preservation (V2.0) Level 4 guidelines (NDSA, 2019).
- 1.2.4 The repository system must meet mandatory and should meet optional Digital Preservation Coalition (DPC) core responsibilities (<https://www.dpconline.org/docs/digital-preservation/procurement-toolkit/2581-core-requirements-for-a-digital-preservation-system-v1/file>).

1.3 TECHNOLOGY

- 1.3.1 The repository system should have the storage layer and the service layer technologically independent from each other, in order to facilitate interchangeability.
- 1.3.2 It should be standards-based so that preservation data is decoupled from the software that manages it.
- 1.3.3 It should communicate via a common protocol.

1.4 STORAGE

- 1.4.1 The current DRS store is based on Oxford Common File Layout (OCFL). The new system must either support OCFL as a drop-in replacement or offer such advantages to outweigh the significant disruption of a possible content migration.
- 1.4.2 Harvard provisions its own storage and has a strong interest in continuing to do so. Harvard is open to considering a vendor-specific storage solution. Vendors that support OCFL1 and vendors that support Harvard's current storage infrastructure solutions are at an advantage.
- 1.4.3 Please specify how you support OCFL and how your repository system can engage with a variety of storage solutions.
- 1.4.4 If you do not currently support OCFL, please provide information on the path and timeline required to do so.
- 1.4.5 If you do not support OCFL and have no plans to, please describe your proposed solution for storage.
- 1.4.6 The repository system must offer support for (synchronous) online and (asynchronous) nearline and offline storage platforms.

1.5 EXPERIENCE AND WORKFLOW

- 1.5.1 The repository system must offer modern, accessible, and intuitive user workflows and interfaces for deposit, editing and reporting.
- 1.5.2 The repository system should streamline the user experience and offer automation of routine tasks.

1.6 ENVIRONMENTAL SUSTAINABILITY

- 1.6.1 The repository system should incorporate environmentally sustainable practices, such as minimizing electronic waste and minimizing energy

consumption when possible. Please describe the strategies employed towards this objective.

- 1.6.2 The repository system should have access to reliable data that measures the environmental footprint of the service.
- 1.6.3 Please detail how you will assist Harvard in achieving its environmental sustainability goals, standards, and commitments including how you will help the University continually improve its commitment to sustainability if you were to be selected as part of this RFP.
- 1.6.4 What specific tools and resources can you provide to Harvard to strengthen its sustainability commitment?

2 ACQUISITION, TRANSFER, AND INGEST

2.1 TRANSFER

- 2.1.1 The repository system must be able to support the ingest of both large files and large numbers of files. Please provide specific information on the largest size files and the largest numbers of files, individually and simultaneously, your system can handle and how the ingest rate changes. Responses that do not include ingest rate impacts for large files and large numbers of files will be considered incomplete.
- 2.1.2 The repository system must support submission of any type of content in user-defined structure which must be recorded and presented back to users as requested for folder hierarchies and file order.
- 2.1.3 The repository system must support mediated deposit (for the client), proxy deposit (for a representative as the client), and self-service deposit (by the client themselves) of any content.
- 2.1.4 Users should be able to transfer content into the system from anywhere the content is staged including desktops, mobile devices, servers, and other staging locations. In other words, upload tooling should be able to be pointed to digital objects staged anywhere available to an authorized Harvard user.
- 2.1.5 The repository system should be able to support Complex Submissions, for example, submissions in which content and metadata are grouped together, and in which any aggregations of submitted content succeed or fail as a group rather than independently.
- 2.1.6 The repository system should allow for recovery of failed portions of a Complex Submission on an individual basis rather than requiring the re-submission of the whole group.

2.2 CHECK-IN/LOG-IN

- 2.2.1 Log-in to the repository system must integrate with the HarvardKey system. HarvardKey is Harvard University's unified login (single sign on) credential — a single login name and password pair that's used to provide convenient, secure access to nearly 2,000 websites, applications, and services that are affiliated

with the University. Please note, HarvardKey supports both CAS and SAML standards.

2.3 SUBMISSION INFORMATION PACKAGES

- 2.3.1 Users must be able to observe the status of their deposits via a deposit tracking function.
- 2.3.2 The repository system should offer flexible configuration of any user-defined Submission Information Package formats.
- 2.3.3 The repository system should offer explicit support for Bagit-based submission packages. <https://datatracker.ietf.org/doc/html/rfc8493>

3 CONTENT PRESERVATION

3.1 CHARACTERIZATION/RISK ANALYSIS

- 3.1.1 The repository system must support flexible content relationships for internal structure and groupings. Users must be able to specify arbitrary relationships between content and metadata items, and versions thereof.
- 3.1.2 The repository system should support automated generation of derivatives in response to established policies (e.g., always derive MP3 from RealAudio).

3.2 PRESERVATION PLANNING

- 3.2.1 The repository system must have an option for human-initiated automation for defined preservation actions.

3.3 PRESERVATION ACTION

- 3.3.1 The repository system must have auditable logging of all preservation actions (such as format migrations) at a configurable level of granularity.
- 3.3.2 The repository system must have support for complete rollback of content state (metadata and storage) if/when preservation actions fail.
- 3.3.3 The repository system must support digital object version history, including: a) Versioned change history with the ability to re-instantiate to an arbitrary prior state. b) Auditable logging of all actions performed against managed content including deletion. Deletion of logs must be according to schedules defined by Harvard.
- 3.3.4 The repository system must have policy-triggered automated transcoding from/to the widest range of file formats for purposes of normalization and/or creation of derivatives at the point of ingest or on an ad hoc basis.
- 3.3.5 The system must be able to override automatic derivative generation with custom-provided derivatives allowing for multi-file input to the transcode based on other inputs, such as associated structural metadata.
- 3.3.6 The repository system should support automated policy-driven preservation actions.

- 3.3.7 The repository system should have the ability to capture and retain curatorial preservation objectives.

3.4 MANAGED DELETION

- 3.4.1 The repository system must offer managed deletion of grouped items.
- 3.4.2 The repository system must have auditable logging of all actions performed against managed content including deletion.

3.5 SUPPORT FOR CONTENT TYPES

- 3.5.1 The system must not have any prescriptive eligibility requirements regarding content genre, format, structure, or degree of associated metadata (beyond a bare minimum of critical administrative properties).
- 3.5.2 The repository system must offer the fullest-possible file-level characterization (i.e., validation and metadata extraction) of submitted content at the point of ingest or hosted content on an ad hoc basis. Harvard recognizes that levels of characterization may vary on a per-format basis and seeks information about what the vendor supports.
- 3.5.3 The repository system must be able to produce derivatives and associate them with the appropriate content based on content models provided by Harvard. Generated derivatives intended solely for access purposes should be stored in dedicated Delivery Storage rather than preservation storage.

4 BITSTREAM PRESERVATION

4.1 REPLICATION

- 4.1.1 The repository system must support an arbitrary, user-defined number of replicas on a per-file basis. The curators must be able to designate that certain digital objects require fewer or more replicas and assign that characteristic.
- 4.1.2 The repository system must not rely on block- or file-level deduplication.
- 4.1.3 The repository system should support the fullest-possible object representation bitstream-level characterization per the industry standard of any or all content at the point/time of ingest or on an ad hoc basis.

4.2 INTEGRITY

- 4.2.1 The repository system must support Harvard in verification efforts including routinely scheduled and ad hoc file-level fixity verification of any or all hosted content at rest and after specified actions, based on cryptographically secure digests.
- 4.2.2 The repository system must support fixity verification of submitted content using externally supplied digest types at the point and time of ingest.
- 4.2.3 Fixity violations must create an alert which is recorded in the system.

- 4.2.4 The repository system must be capable of automatic 'healing' of bit-level corruption by copying from a replica known to be 'correct' through verification consensus.
- 4.2.5 The repository system must have periodic reconciliation of stored content and metadata state, i.e., everything instantiated in storage has a corresponding record in metadata, and vice versa unless content is intentionally presented only by metadata and no stored instantiation is expected.
- 4.2.6 The repository system must offer support encryption on a per-file basis.
- 4.2.7 The repository system should offer support for compression on a per-file basis.

4.3 SUPPORT FOR MODELS/TECHNOLOGIES/CLOUD

- 4.3.1 The repository system must have the ability to integrate directly with any S3 API-conforming storage platform.

4.4 ADMINISTRATOR ACCESS CONTROLS

- 4.4.1 The repository system must support administrative user profiles and department profiles.
- 4.4.2 These profiles must persist beyond the individual user session and must include common metadata terms, configurable required fields, and be customizable based on the needs and preferences of the user.

5 MANAGEMENT AND ADMINISTRATION

5.1 DATA MANAGEMENT

- 5.1.1 The repository system must support auditable logging of all actions performed against hosted content, including:
 - 5.1.2 Auditable logging of all preservation activities at configurable levels of granularity
 - 5.1.3 Auditable logging of automatic "healing" of bit-level corruption by copying from a replica known to be "correct" through verification consensus
 - 5.1.4 All information about fixity violations is available via auditable logging for transparent communication
 - 5.1.5 The repository system must provide notifications (Near or real-time updates about actions, timely system communication to users regarding status of digital objects throughout the lifecycle).

5.2 REPORTING

- 5.2.1 The repository system must support flexible and customizable reporting in both human and machine-readable formats. Please specify the boundaries and limitations of your system's reporting capabilities.

- 5.2.2 The repository system must support periodic and ad hoc configurable report data for any or all stateful properties of any or all hosted content. Please describe the template requirements your system has for reporting.

5.3 ADMINISTRATION

- 5.3.1 The repository system must have a fault-tolerant mode of operation.
- 5.3.2 The repository system should have easy user management features such as account creation and maintenance. Please describe your user management features and include details regarding manual and automated options for account creation, removal, and reinstatement.

5.4 WORKFLOW/QUEUE MANAGEMENT

- 5.4.1 The repository system must have clear and meaningful error messages.
- 5.4.2 Additional requirements about error handling can be found in sections 3.3., 3.4, 5.1, 10.4

5.5 SENSITIVE DATA MANAGEMENT

- 5.5.1 The repository system MUST support granular permissioning based on the principle of least privilege.

5.6 ACCESS CONTROL/POLICIES

- 5.6.1 The repository system must provide granular access control over use by Agents.
- 5.6.2 The repository system must provide content and metadata to external systems for delivery.
- 5.6.3 The repository system must be able to set internal repository access policies separately from delivery access services.

5.7 API

- 5.7.1 The repository must have functional equivalence between UI and API modes of interaction.
- 5.7.2 The repository API must be standards-based and strive to minimize the number of protocols.
- 5.7.3 The repository system API must be thoroughly documented, building documentation into each development cycle.
- 5.7.4 The repository system's API must be meaningfully versioned; it must include or indicate a specific version.
- 5.7.5 The repository system APIs should use semantic versioning. <https://semver.org/>
- 5.7.6 The repository system should strive to automate API documentation generation.
- 5.7.7 The repository system should have open documentation (including about the API) available without login.

5.8 INTEROPERATION WITH ACCESS PLATFORMS

- 5.8.1 Harvard has a multi-system environment in which the repository performs a key role. The repository system must be interoperable; it must share knowledge as well as content and metadata with other systems including metadata providers and gateways.
- 5.8.2 The repository system must support metadata and source catalog and discovery integration, and feed appropriate information to Harvard's delivery systems.
- 5.8.3 In addition, the repository system must be able to export to reporting platforms and be able to integrate with external identifiers (URNs, etc.).

5.9 SEARCH/BROWSE

- 5.9.1 The repository must support repository users in administration and management of preservation data by enabling them to construct simple or advanced search on any metadata including keywords, Boolean, wildcard, free text, result-filtering, etc.
- 5.9.2 The repository must support search by fielded metadata, with flexibility to allow the owner to specify indexable/searchable fields.
- 5.9.3 The repository system should offer users search and browse functionality by any or all metadata.
- 5.9.4 The repository should have the ability to support unfielded metadata as provided by content owners.
- 5.9.5 The repository should have ability to add new metadata schemas as they emerge
- 5.9.6 The repository could offer persistent and shareable queries with an option for automation.

5.10 CONTENT SPECIFIC ACCESS FUNCTIONALITY

- 5.10.1 The repository must offer a means of content preview within the system. For example, repository users should be able to preview still images or audio-visual content or page-turned objects directly in the system without having to download content for viewing.

6 SYSTEMS INTEGRATION AND INTEROPERABILITY

6.1 SYSTEM/STANDARDS SUPPORT

- 6.1.1 The repository system must have the ability to interact with systems via multiple interfaces, including GUI, API, etc.
- 6.1.2 The repository system must support metadata, content, and source catalog integration.
- 6.1.3 The system should be able to automatically send content and metadata to and from other systems in Harvard external to the repository system itself.

- 6.1.4 Please specify the mechanism of integration that is offered as the default and any plans you have for incorporating additional integration needs that Harvard may have.
- 6.1.5 Please include a list of existing integrations with common library systems, or examples of integrations you have built by request.

6.2 IMPORT FUNCTIONALITY

- 6.2.1 The repository system must have the ability to automatically reformat deprecated or suboptimal file formats.
- 6.2.2 The repository system must support the widest possible character set inclusion (multilingual, etc.).
- 6.2.3 The system should provide Harvard administrative users the opportunity to set policies and determine if those policies should be enforced at ingest or not. Examples of such policy options include creating reformatted derivatives, expanding containerized content, virus checking (and what to do if a virus is detected, e.g., reject, isolate, or sanitize), specifying the number and target of replication, etc.

6.3 BULK PROCESSING

- 6.3.1 The repository system must allow actions to be performed on arbitrary groupings and arbitrarily large numbers of resources.
- 6.3.2 The repository system must have flexibility in downloading content and content subsets (including bulk, different groupings, and portions of digital objects).

7 SYSTEM DESIGN

7.1 GENERAL

- 7.1.1 The repository system must separate preservation function from delivery.
- 7.1.2 The repository system should have the storage layer and the service layer technologically independent from each other, in order to facilitate interchangeability.
- 7.1.3 The repository system must support independent and parallel pathways for data for delivery and preservation.
- 7.1.4 The repository system must have eventual consistency and robust error handling.
- 7.1.5 The repository system's replication machinery must be opaque to users.
- 7.1.6 The system must support different replication policies that should be implemented without impacting the user.
- 7.1.7 The repository system should separate the archive from a secure workspace in which content and metadata can be prepared for preservation.

7.2 DATA MODEL

- 7.2.1 The repository system must have a flexible and extensible content data model with a low barrier to modifying the model.
- 7.2.2 The system must support the ability to add and modify object types.
- 7.2.3 The repository system must have version access to digital objects and should offer version retention mechanisms that allow Harvard to limit the number of versions retained for each object according to various policies.
- 7.2.4 The repository system must offer a clear path for content model migrations and changes.
- 7.2.5 The data model must be version-able and should offer on-demand version creation.
- 7.2.6 The repository system should prefer network-like relationships over hierarchical structures.

7.3 SYSTEMS ARCHITECTURE

- 7.3.1 The repository system must be fault tolerant, for example, if a node goes down, other nodes fulfill the same requests of the failed node, so disruption and down time are minimized.
- 7.3.2 The repository system must employ a modular architecture to enable isolated changes and upgrades to individual components without impacting the functionality of other parts of the system. This modularity will facilitate interoperability with third-party systems by allowing integration points to be limited to well-defined interfaces. The repository system must have service-oriented architecture (SOA) with an API-first option.
- 7.3.3 The repository system must be operationally stateless.
- 7.3.4 The repository system must respond performantly to load changes.
- 7.3.5 The repository system UI/UX must adhere to established interface design best-practices (including but not limited to accessibility and responsive design). Please specify your UI/UX design practices and how they conform to industry standards.
- 7.3.6 The repository system should adhere to SOA patterns.
- 7.3.7 The repository system should be event driven, with centralized event handling and orchestration separated from task execution.
- 7.3.8 The repository system user interface should be a web-based interface that replicates the API functionality.
- 7.3.9 The UI/UX should be built on top of the API.

7.4 SUSTAINABILITY/MAINTAINABILITY

- 7.4.1 The repository system must be efficient and effective, with a scalable design that will grow with the Harvard collection.
- 7.4.2 Basic behavioral aspects of the repository system must be modifiable via configuration or integrated scripts rather than by modifying the core system's source code. Such key aspects may include adding new file types acceptable for a content type, custom data processing steps, node scaling, etc. More extensive application behavior should be customizable via configuration as well.

- 7.4.3 Harvard intends to supply its own preservation storage. Any storage supplied by the repository system for Harvard's use must have memory, input/output, and computationally efficient tiered storage.
- 7.4.4 The repository system must prevent vendor lock-in and allow Harvard to swap products that fulfill specific requirements with minimal to no migration effort.
- 7.4.5 The repository system should offer solutions that are inherently low-footprint and resource-efficient, so that scaling up or out by adding more computing and memory resources to meet Harvard's throughput and volume demand can be done in a cost-efficient way.

8 METADATA MANAGEMENT

8.1 STANDARDS

- 8.1.1 The repository system must allow managed content, at the object, representation, and file levels, to be described multiple times in terms of diverse metadata schemas.
- 8.1.2 The repository system must support the widest range of metadata schemas and elements (for example in capture, persistence, index and search) and must offer flexible configuration of support for arbitrary or locally defined metadata schemas.
- 8.1.3 The repository system must be able to specify XML, JSON, or other schemas and must not be limited to a proprietary schema.
- 8.1.4 The repository system must support arbitrary editing (and reindexing) of metadata instantiated from all supported schemas.
- 8.1.5 Metadata must be able to be associated with all entities in the supported data modeling hierarchy, e.g., collections, objects, representations, files, bitstreams, etc.
- 8.1.6 The repository system should support content intentionally represented by only metadata where no stored instantiation is expected.

8.2 MANAGEMENT

- 8.2.1 The repository system must have a complete system and content state instantiated in preservation storage, which is considered the copy-of-record. Specifically, all metadata needed for system operation and characterizing hosted content must be written to preservation storage.
- 8.2.2 The repository system must be able to rebuild operational metadata stores from preservation stores.
- 8.2.3 The repository system must have eventual consistency of metadata state with its instantiation as the stored copy-of-record with a Recovery Point Objective of 2 hours.
- 8.2.4 The repository system must have a disaster recovery restoration of metadata state for single items from stored copy-of-record with a Recovery Time Objective of 24 hours.

- 8.2.5 The repository system must have a periodic reconciliation of metadata state and stored content, i.e., every record in metadata has corresponding files instantiated in storage unless there is intentionally no stored representation.
- 8.2.6 The repository system should offer curators the ability to add fielded and/or free text annotations or commentary to the metadata.

9 SECURITY

9.1 STANDARDS COMPLIANCE

- 9.1.1 The vendor must have an information security and data privacy policy and program that complies with Harvard's policy.
- 9.1.2 As part of your response, you must provide a copy of your data security and privacy policy.
- 9.1.3 Does the vendor align to a specific external controls framework(s)? Please specify if applicable.
- 9.1.4 Does the vendor do regular third-party audits to assess the effectiveness of the stated controls? Please provide relevant details.
- 9.1.5 Please share the results of your last IT controls audit (SOC2 is most common).
- 9.1.6 If you do not submit third-party audits, Harvard will require you to either:
Complete the HECVAT light questionnaire:
<https://library.educause.edu/resources/2020/4/higher-education-community-vendor-assessment-toolkit>
- 9.1.7 Or Complete a CyberGRX questionnaire (Tier 3): https://harvard.servicenow.com/ithelp?id=kb_article&sys_id=e65d8236db455fc8d1257ee5bf96190e
- 9.1.8 Please specify what is the "shared responsibility model," i.e.: the university's responsibility to ensure the system remains secure?
- 9.1.9 The repository system must offer log retention for at least 90 days in compliance with Harvard University IT Security requirements.
- 9.1.10 The repository system data handling must conform to additional data handling requirements (e.g., HIPAA, GDPR, contractual and data use agreements etc.).
- 9.1.11 The repository system must be able to offer secure storage for PII, Level 4, and other protected materials.

9.2 ENCRYPTION / KEY MANAGEMENT

- 9.2.1 The repository system must have support for in transit and at rest encryption on a per-file basis.

9.2.2 ADMINISTRATOR ROLES / RIGHTS

- 9.2.3 The repository system must offer configurable authorization policies based on arbitrary agent roles, content attributes, and context of usage requests.
- 9.2.4 The repository system must feature configurable agent roles, including, but not limited to, (administrative) owner, (intellectual) curator, (operational) depositor,

(strategically responsible) programmatic administrator, (tactically responsible) service/product manager, (operational) devops/prodops/trainer/support.

9.3 ACCESS/USAGE LOGGING

- 9.3.1 The repository system must have auditable logging of all activity including associated agents in the system.

10 DISASTER RECOVERY AND RESILIENCE

10.1 SERVICE LEVEL AGREEMENTS

- 10.1.1 As noted in Section 9.3, the repository system must have eventual consistency of metadata state with its instantiation as the stored copy-of-record with a Recovery Point Objective of 2 hours.
- 10.1.2 The repository system must have a disaster recovery restoration of metadata state for single items from stored copy-of-record with a Recovery Time Objective of 24 hours.
- 10.1.3 Please include specific performance metrics that allow Harvard to measure the timeliness and success of varying levels of criticality related to individual services, products, and specific remedies available, including compensation to Harvard, if you do not meet those metrics. Include how you track this with examples (e.g., reports, tools, benchmarks used).
- 10.1.4 Please provide information regarding programs in place to aid Harvard in the event that Harvard or you experience a disaster.
- 10.1.5 Please attach a document to describe your Business Continuity Plan (“BCP”) with respect to the services and/or products for which you are making a proposal. The BCP described should be a service included in the price structure proposed below.
- 10.1.6 Please provide information regarding programs in place in the event that you experience a disaster (e.g., redundant equipment, alternate facilities).

10.2 CRITICAL INFRASTRUCTURE

- 10.2.1 The repository system must have critical infrastructure to recover from a disaster.
- 10.2.2 The repository system must have the ability to rebuild operational services.
- 10.2.3 What was your average system uptime in 2023, excluding scheduled down time?

10.3 SYSTEM BACKUP AND RESTORE

- 10.3.1 The repository system must offer multiple options for recovery.
- 10.3.2 The repository system should offer the option to run pre-emptive integrity monitoring via checksum verification at intervals defined by system administrators.

11 EXPORT/EXIT STRATEGY

11.1 GENERAL

- 11.1.1 The repository system must have a comprehensive exit strategy for both content and metadata in which all the data outputs will all be usable rather than in a system-specific, proprietary format.
- 11.1.2 Please specify the outputs of your exit strategy.
- 11.1.3 Please specify the exit path from your system and estimate time, personnel, and specific costs regarding the exit process.
- 11.1.4 Please describe the support you offer for content and metadata transition out of your system.
- 11.1.5 The repository system must have a clear path to complete replacement of the system by another system.
- 11.1.6 The repository system must have a clear path to component replacement in which elements of the system can be changed or updated with minimal disruption of daily operations.

12 TRAINING

12.1 AVAILABILITY

- 12.1.1 The vendor should provide Harvard with vendor training or access to training modules.
- 12.1.2 What training is provided during and post implementation?
- 12.1.3 Do you provide training material templates? Please attach an example to the proposal.
- 12.1.4 Provide the guaranteed response time for end-user and administrator customer service enquiries.
- 12.1.5 Provide the level of customer/legal/compliance support provided.

13 USABILITY/HELP/DOCUMENTATION

13.1 DOCUMENTATION

- 13.1.1 The vendor must provide access to user interface (UI) and API documentation.
- 13.1.2 The repository system should offer open documentation (including API) available without login.

13.2 INTERFACE CUSTOMIZATION

- 13.2.1 The digital repository system could support internationalization, specifically offering various default languages, in the UI for staff users.

13.3 ACCESSIBILITY

- 13.3.1 The digital repository system must conform to Harvard's Digital Accessibility Policy, and must support alternate Representations of materials as required therein. HUIT (2023). Harvard University Digital Accessibility Policy: <https://accessibility.huit.harvard.edu/digital-accessibility-policy>
- 13.3.2 When do you think about accessibility during the lifecycle of your product? At the design stage, during the implementation process or later on after it has been developed?

13.4 SUPPORT/HELP DESK

- 13.4.1 The vendor must have a transparent system for submission and tracking of enhancement requests and prioritization of that process.
- 13.4.2 List EST hours of operation for: call centers, support, case management, and provide escalation procedures.
- 13.4.3 Please include your standard Service Level Agreement (SLA) and your Major Incident (MI) process.
- 13.4.4 What is your response time for calls regarding unscheduled system outages?
- 13.4.5 How do you schedule/notify clients of scheduled system downtime?

14 CONTRACTUAL

14.1 LEGAL

- 14.1.1 Please attach past or present legal action legal action over the last 3 years (whether civil, criminal or administrative, and whether brought by governmental, association or industry oversight entities or by private sector entities or individuals, regardless of jurisdiction, venue or forum) with regard to any material matter involving your (including any predecessor in interest and/ or any of your employees or independent contractors) business operations, use or development of programs, use or modification of hardware or equipment, provision of a system or services, intellectual property, maintenance or updates. You must give complete details, including final disposition of any such action.
- 14.1.2 Please attach information relating to any breach of confidentiality or alleged breach of confidentiality by you or any independent contractor you have engaged.
- 14.1.3 Current Agreement: Please attach information relating to whether you or your parent company, affiliate or subsidiary has an existing contractual agreement with Harvard. Please list the full legal name of the contracting entities, the product or service referenced in the agreement, the term of the agreement (effective date and expiration date) and the Harvard customer who executed the agreement and the respective Harvard relationship manager.
- 14.1.4 Please review the Service Agreement document provided as a Buyer Attachment with this RFP. If you agree to all items indicate with a "Yes." If edits will be requested indicate with "Agree to document with Edits."

- 14.1.5 If you selected "Agree to document with edits" please upload the Service Agreement document using track changes to indicate requested edits using the Supplier Attachments section of this RFP. Indicate that this request has been completed.

15 SUPPLIER PROFILE

15.1 HISTORY AND INCORPORATION

- 15.1.1 Provide the legal name and address information for the legal entity that will be signing the contract.
- 15.1.2 How many years has the entity providing the product/service been providing the product/services requested for this Project?
- 15.1.3 List the name, job title, phone number, email, and mailing address of the primary Harvard liaison for your company.
- 15.1.4 If the primary contact for this RFP is not the person listed in the above question, please provide the name, job title, phone, and email address of this person.

15.2 MINORITY, WOMEN, VETERAN, SERVICE DISABLED VETERAN, AND SMALL BUSINESS ENTERPRISES

- 15.2.1 Are you certified as a: Woman Owned Business, Minority Owned Business, Service Disabled Veteran Owned Business, Small Disadvantaged Business (8a), Hubzone Small Business, Other.
- 15.2.2 Explain why Other was chosen
- 15.2.3 Certified businesses must hold a current certification from a local, national and/or international diversity certifying organization. Please submit a copy of the applicable certification and include all NAICS codes (if applicable)
- 15.2.4 Does Vendor currently have a formal Vendor Diversity Program?
- 15.2.5 If yes, please describe how the program works

15.3 CUSTOMERS/INSTALLATIONS OR REFERENCES

- 15.3.1 Please provide three references for your major accounts to whom you provide services/products similar to those contemplated by this RFP. If possible, include at least one reference from higher education. If applicable, please explain why former higher education accounts were not retained

15.4 CURRENT MAJOR ACCOUNTS - REFERENCE #1

- 15.4.1 Company Name
- 15.4.2 Company's Industry
- 15.4.3 Reference Name

- 15.4.4 Reference Phone
- 15.4.5 Reference Email
- 15.4.6 Reference Complete Address
- 15.4.7 Nature of Goods and/or Services Provided
- 15.4.8 Annual Billings

15.5 CURRENT MAJOR ACCOUNTS - REFERENCE #2

- 15.5.1 Company Name
- 15.5.2 Company's Industry
- 15.5.3 Reference Name
- 15.5.4 Reference Phone
- 15.5.5 Reference Email
- 15.5.6 Reference Complete Address
- 15.5.7 Nature of Goods and/or Services Provided
- 15.5.8 Annual Billings

15.6 CURRENT MAJOR ACCOUNTS - REFERENCE #3

- 15.6.1 Company Name
- 15.6.2 Company's Industry
- 15.6.3 Reference Name
- 15.6.4 Reference Phone
- 15.6.5 Reference Email
- 15.6.6 Reference Complete Address
- 15.6.7 Nature of Goods and/or Services Provided
- 15.6.8 Annual Billings

15.7 FORMER ACCOUNTS - REFERENCE #1

- 15.7.1 Company Name
- 15.7.2 Company's Industry
- 15.7.3 Reference Name
- 15.7.4 Reference Phone
- 15.7.5 Reference Email
- 15.7.6 Reference Complete Address
- 15.7.7 Nature of Goods and/or Services Provided
- 15.7.8 Last Annual Billings
- 15.7.9 Circumstances

15.8 FORMER ACCOUNTS - REFERENCE #2

- 15.8.1 Company Name
- 15.8.2 Company's Industry
- 15.8.3 Reference Name
- 15.8.4 Reference Phone
- 15.8.5 Reference Email

- 15.8.6 Reference Complete Address
- 15.8.7 Nature of Goods and/or Services Provided
- 15.8.8 Last Annual Billings
- 15.8.9 Circumstances

15.9 FORMER ACCOUNTS - REFERENCE #3

- 15.9.1 Company Name
- 15.9.2 Company's Industry
- 15.9.3 Reference Name
- 15.9.4 Reference Phone
- 15.9.5 Reference Email
- 15.9.6 Reference Complete Address
- 15.9.7 Nature of Goods and/or Services Provided
- 15.9.8 Last Annual Billings
- 15.9.9 Circumstance

15.10 KEY PERSONNEL

- 15.10.1 Please provide resumes or a brief description of the key personnel you plan to work on the repository system.

15.11 GOING CONCERN (FINANCIAL STABILITY)

- 15.11.1 Provide your Dun and Bradstreet number if available.

15.12 PROFESSIONAL INDEMNITY

- 15.12.1 Please provide proof of insurance coverage for your business operations.

15.13 USER GROUP

- 15.13.1 The repository system provider should provide access to community-driven support. Please make it clear how the user community is engaged and how you can connect Harvard with current users and/or user forums.

16 IMPLEMENTATION

16.1 GENERAL

- 16.1.1 Please specify the recommended content transition path, metadata cross walking, estimated time requirements, Harvard personnel engagement, and specific implementation costs.
- 16.1.2 What is the process and timeline for migrating data and metadata from the current DRS system to the new repository system? Note that 'migrating' doesn't necessarily imply physical transfer of data from its current storage location, only that the new system is now aware of and can interact with the data.

- 16.1.3 What are the responsibilities of each party (vendor and Harvard) during the implementation of the new repository system?
- 16.1.4 How does your system learn about the data and metadata currently stored in the Harvard system? How will connections be made from your repository system to the Harvard storage layer? Please note: As specified in various sections of this RFP, it is Harvard's preference to maintain the current storage infrastructure and NOT migrate to a new storage solution.

16.2 PERFORMANCE

- 16.2.1 The repository system must offer configurable scaling of deployed processing components for responsive performance.
- 16.2.2 The repository system must support integrity verification for migrated content.

16.3 LIVE/TEST ENVIRONMENTS

- 16.3.1 The vendor must offer field testing of the repository system at Harvard.
- 16.3.2 This user acceptance testing must take place before contracts are finalized in order to ensure that the repository system is compatible with the systems in the Harvard environment.
- 16.3.3 The vendor must offer a non-production environment for Harvard to use concurrently with the repository system. This non-production environment will be used by Harvard for testing of new systems, applications, and integrations.
- 16.3.4 The vendor must offer a test or sandbox environment for Harvard to explore upon submitting an RFP. This environment will be used throughout the RFP evaluation process to fully understand vendor responses and offerings.

16.4 FLEXIBILITY/EXTENSIBILITY/MODULARITY

- 16.4.1 The repository system must have flexible interoperation with external patron-facing discovery and delivery services.
- 16.4.2 Specific concepts for interoperability of systems are called out in Section 7. In addition to those systems, Harvard has a strong interest in a repository system with flexible interoperation and modularity. The system should support the widest variety of options.
- 16.4.3 Please describe how you plan for and incorporate new system solutions and connections to emerging modular paths.

17 PROPOSAL PRICING

17.1 PROPOSAL PRICING

- 17.1.1 Stipulate if there are any other fees or surcharges in connection with the system, which have not been requested above.

- 17.1.2 Other than training which has been included as part of your RFP response, provide rates for ad-hoc training per hour and per day or ongoing web-based training, if any additional fees apply.
- 17.1.3 Any other implementation fees or charges under any circumstances for the solution in your proposal?
- 17.1.4 List here:
- 17.1.5 If applicable, provide licensing model and price per license/user.
- 17.1.6 List components included/not included in your pricing.
- 17.1.7 What services/features involve add-on or additional charges?
- 17.1.8 Are there any additional fees per user? If there are additional fees, provide each user type and provide pricing tiers for each user type.
- 17.1.9 Does the rate change depending on licensing volume? Please provide tiers if applicable.
- 17.1.10 What credits, discounts, or value-added services are included in the proposal? Please provide details, if applicable.
- 17.1.11 What is the term length required for the rates provided? How are rate adjustments determined after the initial term length? Please provide any applicable details.
- 17.1.12 Other than training which has been included as part of your RFP response, provide rates for ad-hoc training per hour and per day or ongoing web-based training, if any additional fees apply. Please provide details if applicable.
- 17.1.13 Please provide hourly rates for consulting services by resource type, if applicable.
- 17.1.14 Are there add-on additional costs associated with day 2 operational support? Provide details and cost, if applicable.
- 17.1.15 Are there add-on additional costs associated with configuration, implementation, and migration? Provide details and costs, if applicable.
- 17.1.16 Are there associated costs for integration to Harvard tools such as ServiceNow, UCExpert? Provide details and cost, if applicable.
- 17.1.17 Provide usage rates, if applicable.
- 17.1.18 What components are subject to Regulatory, FUSF, taxes? Please provide the list of components, if applicable.
- 17.1.19 Stipulate if there are any other fees or surcharges in connection with the system, which have not been requested above. Please provide details, if applicable.