



InterPARES 2 Project

International Research on Permanent Authentic Records in Electronic Systems

*International Research on Permanent Authentic
Records in Electronic Systems (InterPARES) 2:
Experiential, Interactive and Dynamic Records*

PART FIVE

MODELING DIGITAL RECORDS CREATION,
MAINTENANCE AND PRESERVATION

Modeling Cross-domain Task Force Report

[including Appendices 14, 15 and 16]

Chain of Preservation Model Narrative

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Preamble

The objective of the InterPARES 2 Project is to develop a theoretical understanding of the records generated by experiential, interactive and dynamic systems, of their process of creation, and of their present and potential use in the artistic, scientific and governmental sectors.¹ The Modeling Cross-domain Task Force, while not included in the original Project plan, was added to three other cross-domain task forces for two reasons:

1. Modeling of the creation, maintenance and preservation of records, both from the preserver viewpoint and from the business process viewpoint, presents a picture of all the activities of records making, records keeping, and records preservation and their relationship for researchers in the Project to utilize.
2. Modeling serves as a method of analysis to which researchers in the other domains and focuses could contribute their expertise to develop better understanding of requirements for long-term preservation of records in experiential, interactive and dynamic systems.

No specific research questions were formulated for the Modeling Cross-domain at the outset of the Project. However, some of the questions of Domain 3 were addressed by the Modeling Cross-domain. These are as follows:

- What preservation paradigms can be applied across activities and technologies? What preservation paradigms are required for specific types of records resulting from each activity?
- What metadata are necessary to support appraisal and preservation of authentic digital records resulting from each activity?²

The modeling work was based upon previous projects such as the UBC Project³ and the InterPARES 1 Project,⁴ as well as upon theoretical concepts developed through research undertaken by the Records Continuum Research Group in Australia.⁵

The Modeling Cross-domain developed two models. The Chain of Preservation (COP) Model is based on the perspective of the entity responsible for long-term preservation of digital records. The Business-Driven Recordkeeping (BDR) Model is based on the perspective of the records creating entity. The two models are mutually supportive in that they provide two ways of looking at the problem of long-term preservation of authentic digital records. The COP Model is explained in the next part of this report, followed by an explanation of the BDR model. The purpose of developing two models was to be able to look at the question of preservation of the

¹ Luciana Duranti (2004), "InterPARES 2 Project Midterm Report to the Social Sciences and Humanities Research Council." MCRI Grant No. 412-2001-1003, 1 (unpublished).

² Luciana Duranti (2001), "International Research on Permanent Authentic Records in Electronic Systems (InterPARES): Experiential, Interactive and Dynamic Records," SSHRC MCRI InterPARES 2 Project Proposal, 412-2001, 14. Available at http://www.interpares.org/display_file.cfm?doc=ip2_detailed_proposal.pdf.

³ See Luciana Duranti and Heather MacNeil (1996), "The Protection of the Integrity of Electronic Records: An Overview of the UBC-MAS Research Project," *Archivaria* 42 (Fall): 46–67. Online reprint available at <http://journals.sfu.ca/archivar/index.php/archivaria/article/view/12153/13158>; and Luciana Duranti, Terry Eastwood and Heather MacNeil, *Preservation of the Integrity of Electronic Records* (Dordrecht: Kluwer Academic Publishing, 2002). An online reprint of the book is available at <http://www.interpares.org/book/index.cfm>. See also the UBC Project's Web site at <http://www.interpares.org/UBCProject/index.htm>.

⁴ International Research on Permanent Authentic Records in Electronic Systems (InterPARES 1 Project). The Project's Web site is available at <http://www.interpares.org/ip1/index.cfm>.

⁵ See the Web site of the Records Continuum Research Group, Monash University. Available at <http://www.sims.monash.edu.au/research/rcrg/index.html>.

reliability, authenticity and accuracy of records in experiential, interactive and dynamic systems through the lens of two somewhat different conceptions, each offering its own insights.

The result of the modeling work undertaken within the Modeling Cross-domain, as presented in this narrative, constitutes an intermediate version of the models. Both models, therefore, should be considered *consultation drafts*. While they have been discussed extensively within the Project, further discussion from other viewpoints and with other experts is still required so that these models can benefit from such dialogue and evolve to a more refined stage.

Further work is needed on the definitions, the description of the diagrams and the validation of the models. The COP model has, for instance, not been validated in the artistic and governmental sectors, while the BDR model has not been validated in the artistic and scientific sectors and also needs more testing within administrative environments by doing walkthroughs based on the available and new case studies.⁶ The current versions, however, have been sufficiently developed to provide insight into the approach taken and an understanding of the underlying concepts. Both models are based on experience and, as such, on a logical construction of existing knowledge. They are now offered as instruments for feedback from individuals and organizations.

Chain of Preservation Model

Introduction

Early in the work of the InterPARES 2 Project, which began in 2001, the Modeling Cross-domain Task Force began developing a model that would eventually be called the Chain of Preservation (COP) model.⁷ The COP model, which depicts all the activities and the inputs and outputs that are needed to create, manage and preserve reliable and authentic digital records, was created based on the IDEF0 (Integrated Definition Function) modeling process using IDEF0 modeling software. IDEF0 is a U.S. Federal Information Processing Standard for function modeling.⁸ A function model is a structured representation of the functions, activities and processes within the modeled system or subject area.⁹ The COP model consists of a series of diagrams depicting all the activities involved in the life-cycle management of digital records together with a glossary of all the terms appearing on the diagrams. The diagrams and glossary are included in Appendices 1 and 2 and are also available on the InterPARES 2 Web site.¹⁰

The COP model was based on three previous models. The first of these previous models was generated during a project entitled “The Preservation of the Integrity of Electronic Records” (commonly referred to as the UBC Project) conducted between 1994 and 1997 by Professors

⁶ Two walkthroughs of an earlier draft of the COP model were conducted using data from two scientific sector (Focus 2) case studies. See William Underwood, Kevin Glick and Mark Wolfe (2007), “InterPARES 2 Project - General Study 12 Final Report: Validation of the InterPARES 2 Project Chain of Preservation Model Using Case Study Data.” Available at http://www.interpares.org/display_file.cfm?doc=ip2_gs12_final_report.pdf; and Randy Preston (2004), “InterPARES 2 Project - Modeling Cross-domain: Walkthrough of the Manage Chain of Preservation Model Using Case Study 14 Data,” draft report. Available at http://www.interpares.org/display_file.cfm?doc=ip2_cs14_COP_model_walkthrough.pdf.

⁷ The COP model was also called the Grand Unified Model (GUM), Manage Electronic Records (MER) model, Manage Records Lifecycle (MRL) model and the Manage Chain of Preservation (MCP) model during the earlier stages of its development.

⁸ See United States Secretary of Commerce, *Draft Federal Information Processing Standards Publication 183*, 21 December 1993. Available at <http://www.idef.com/pdf/idef0.pdf>.

⁹ For more information about the IDEF0 process, see <http://www.idef.com>.

¹⁰ See http://www.interpares.org/ip2/ip2_models.cfm. Enter terms used in the model into the search box provided to see their definitions.

Luciana Duranti and Terry Eastwood and research assistant Heather MacNeil of the University of British Columbia. Its purpose was to define the activities for the genesis and preservation of an agency's archival fonds. Its scope was to control records (archival documents) according to the agency's mandate using the principles of archival science. It adopted the perspective or viewpoint of the records creator. The diagrams and glossary constituting the UBC Project's model are available on the InterPARES Web site¹¹ and in the book publishing the results of the Project.¹² The other two previous models were produced also using IDEF0 methodology during 1998-2001 by the InterPARES 1 Project; one of the selection function and the other of the preservation function.¹³ The "Select Electronic Records" model defines all the activities involved in the selection of authentic digital records for long-term preservation. It adopts the viewpoint of the entity responsible for long-term preservation of digital records. It covers all the activities of the preserver in appraising and carrying out the disposition of digital records. The "Preserve Electronic Records" model takes the same viewpoint and covers all the activities conducted in preserving authentic digital records. These two models are also available on the InterPARES Web site¹⁴ and in the book publishing the results of the InterPARES 1 Project.¹⁵

The process of developing the COP model involved examining the three pre-existing models and their conceptual bases closely, and then engaging in producing a new model based on previous conceptions but refining them and creating new definitions of terms where required. The work was done at the University of British Columbia with the assistance mainly of research assistants Rachel Mills and Bart Ballaux and, later in the work, Randy Preston. Luciana Duranti, the Project Director, participated in the early stages of the work. As the modeling exercise progressed, the interim results were presented to the wider research group for their criticism and comment, which often lead to improvements in the model.

Purpose, scope and perspective of the model

In one sense, the purpose of the COP model was to unify the three previously produced models, which each depicted one of the functions in the life-cycle management of digital records. As is widely recognized, digital records must be carefully managed throughout their entire existence to ensure that they are accessible and readable over time with their form, content and relationships intact to the extent necessary for their continuing trustworthiness as records. It is also widely recognized that management of digital records must proceed from a comprehensive understanding of all phases or stages in the lifecycle of records, from the time they are generated, through their maintenance by their creator, and during their appraisal, disposition and long-term preservation as authentic memorials of the actions and matters of which they are a part. The COP model has, then, within its scope all these phases or stages in the lifecycle of digital records and all the activities and important, specific actions that must be undertaken to ensure that digital records are properly generated in the first instance, maintain their integrity over time, and can be authentically reproduced at any time throughout their existence. As well, it characterizes the data

¹¹ See <http://www.interpares.org/UBCProject/index.htm>.

¹² Duranti et al., *Preservation of the Integrity of Electronic Records*, op. cit.

¹³ It is worth noting that the Open Archive Information System (OAIS) reference model, now an international standard (ISO 14721:2003), served as the basis for the preservation function model from InterPARES 1 and thus can, by extension, be said to have also informed the COP model.

¹⁴ See <http://www.interpares.org/book/index.cfm>.

¹⁵ Luciana Duranti (ed.), *The Long-term Preservation of Authentic Electronic Records: The Findings of the InterPARES Project* (San Miniato, Italy: Archilab, 2005). More specifically, Appendix 4: A Model of the Selection Function and Appendix 5: A Model of the Preservation Function, 239–292.

and information that must be gathered, stored and utilized during the various processes of management throughout the lifecycle. The COP model also depicts the constraints or controls on the various activities and actions it characterizes.

The matter of the viewpoint or perspective of the COP model is vital to its understanding. The UBC Project model was produced from the perspective of the records creator; that is, any entity with responsibility for long-term preservation of digital records. It could be an entire organization, an agency within an organization, or even an office within an organization or agency if such decentralization of records management were appropriate. In contrast, the two InterPARES 1 Project models took the perspective of the records preserver; that is, the entity responsible for long-term or continuing or enduring preservation of authentic digital records. It could be a separate archival institution, such as a public archives responsible for preservation of a government's records, or an archival program or unit within an organization, such as a church, business or university archives, or even a repository preserving archives of records creators with which it has no organizational or administrative connection. Obviously, however, this last example presents special problems for long-term preservation of digital records. In fact, the measures taken to control digital records creation and maintenance in a setting where there is an established relationship between records creators and a designated records preserver¹⁶ are much more difficult to articulate when the preserver has no organizational relationship with the records creators whose records it aims to preserve over the long term.

In any event, developers of the COP model faced a serious problem in unifying or rationalizing the three pre-existing models, for they did not proceed from the same perspective. This is precisely the problem that has generated criticism of the lifecycle concept, which all too often finds it difficult to rationalize or coordinate all the activities of records creation, maintenance and use by the records creator, with appraisal, disposition and long-term preservation by the records preserver. The developers of the COP model solved this problem, in effect, by adopting the perspective of *the needs of the records*. It is quite obvious that early phases or stages in the records lifecycle are managed by the records creator and later phases or stages by the records preserver, but the COP model proceeds from an understanding of the theory, methods and practice of proper records processes throughout the lifecycle of the records. This understanding recognizes that whoever takes responsibility for undertaking actions on digital records must do so with the whole sweep of the records' existence in mind. Nevertheless, because the goal of the InterPARES Project is to develop knowledge of the requirements for long-term preservation of authentic digital records, the COP model, it can be conceded, views all the activities it depicts from the perspective of that goal of preservation of authentic digital records, which, of course, is consonant with the perspective of the preserver.

Finally, it should be noted that the phrase "chain of preservation" was consciously chosen as the title for the model to indicate that, from the perspective of long-term or continuing or enduring preservation, all the activities to manage records throughout their existence are linked, as in a chain, and interdependent. If a link in the chain fails, the chain cannot do its job. If certain activities and actions are not undertaken on records, their trustworthiness (that is, their reliability and authenticity) and preservation are imperilled.

¹⁶ A *designated records preserver* is the entity responsible for taking physical and legal custody of, and preserving (i.e., protecting and ensuring continuous access to) authentic copies of a creator's inactive records. The role of the designated records preserver should be that of a *trusted custodian* for a creator's records; that is, a preserver who can demonstrate that it has no reason to alter the preserved records or allow others to alter them and is capable of implementing all of the requirements for the authentic preservation of records.

Overview of the Chain of Preservation Model¹⁷

Manage Chain of Preservation (A-0)

This top-level diagram delineates the subject of the model and its overall context represented by a single box with its bounding arrows. The bounding arrows—representing the model's primary inputs, outputs, controls/constraints and mechanisms—interface with functions outside the subject area being modeled, thus establishing the model's focus.

Constraints on records activities

The IDEF0 methodology requires that constraints or controls on functions be identified. Records are always generated and kept with certain constraints in mind. The first constraint on the model has already been mentioned. It proceeds from an understanding of *archival science*; that is to say, the model is founded on archival concepts, methods and practices, which were articulated in the models produced prior to this exercise of producing the COP model.

The other constraints all relate to the context in which records come into being and exist. Records creators and preservers operate in this context. The first aspect is the context of the *juridical system*. The InterPARES Project adopts from diplomatics a definition of the term juridical system. It is a social group that is organized on the basis of a system of rules and that includes three components: the social group, the organizational principle of the social group and the system of binding rules recognized by the social group. The records produced in a society are, to a considerable extent, influenced by its social setting, by the kind of a society it is, by the way it governs itself and, in particular, by the rules and customs by which it abides. Thus, aspects of the juridical system constrain or influence the way records are made, kept, communicated, used, maintained and preserved. Laws and regulations most directly affect records processes. There may be laws or regulations that have to be observed when generating or managing records or when maintaining and preserving them. For instance, governments pass laws or promulgate regulations affecting their own records and the records of private bodies. Managing the chain of preservation has to take such rules into account.

In any given context, records may be generated and treated according to various *international, national or other standards*. Standards lay out rules or guidelines to regulate activities, practices and the like. In any given context, it may be either necessary or desirable to adhere to standards. These standards act as a further constraint on managing digital records.

The degree to which digital technology is available and the capabilities it has constitute a further constraint. In any real situation, the *state of technology* may severely limit what can be done in the management of digital records. The COP model was constructed with an understanding of the capacity of information technology as it now exists. So, for instance, the model assumes that software for electronic document and records management exists and can be utilized and that technological means exist to migrate records. In other words, it assumes an ideal situation, not one in which fiscal or other limitations prevail.

The final constraint, the *preserver's mission*, is the one that most clearly indicates the perspective of the model. The preserver's mission is identified as a constraint because the main interest animating the model is the long-term preservation of reliable, accurate and authentic digital records. Now, obviously, there are additional constraints on record-making and recordkeeping that are dictated by the mission, mandate and administrative habits of the records

¹⁷ The COP model IDEF0 diagrams, together with the activity and arrow definitions, are provided in Appendix 14.

creator. Therefore, the mission, mandate and functions of the records creator act as a constraint on its management of its digital records. This constraint was recognized in the UBC model, and the COP model was created with this recognition in mind.

Mechanisms instrumental for record activities

Many resources are needed to generate, maintain, control and preserve digital records. The COP model assumes that both the records creator and the records preserver will assign personnel tasks for records creation and management, and records preservation, respectively. Various tools, such as information technology and other equipment and supplies, will be needed to manage the lifecycle of records, as will physical facilities and infrastructure. In a real situation, lack of these resources obviously constrain what can be done, and often seriously. In the case of the model, a situation of optimum resources is assumed to allow users to picture the ideal towards which, in any given real situation, they may work.

Inputs to record activities

By definition, all of the top-level inputs to the model represent information or objects that originate outside of the main activity being modeled. The first two inputs, *creator's existing records* and *information about the creator's existing records*, acknowledge the fact that, aside from rare instances where the model is used to support the development of a chain of preservation framework for a new records creating entity, any entity to which the model is being applied will already have in place some level of record-making and recordkeeping capacity, however modest. In other words, it is assumed that most creators will have already created records prior to developing and implementing the integrated chain of preservation framework envisioned by this model. Thus, first two inputs represent records made or received by the creator that predate the development and implementation of the chain of preservation framework and that will need to be incorporated into the creator's "new" record-making and recordkeeping systems following implementation of the framework.

The next input, *received documents*, represents inputs received by the creator from external juridical or physical persons subsequent to implementation of the framework. In some cases, the creator may require additional *information about the received documents' context* to properly *identify* (i.e., attach to the documents identity metadata that convey the action in which the documents participate and their immediate contexts—see A2.2.3), *declare* (i.e., intellectually set the documents aside as records by registering and classifying them—see A2.2.4), and/or *execute* (i.e., attach to the declared records metadata that convey information about the formal execution phase of the administrative procedure in which the record participates—see A2.2.5) them. Although the model does not specify exactly how, where or from what source this supplementary information is or should be obtained, it is assumed that the information would either be generated and supplied by the external entity transmitting the document to the creator in response to a request from the creator, or be compiled by the creator through examination of other information available about the external entity and/or the action to which the received documents relate.

In addition to analysis of the creator's existing records (and information about the records), *information about the creator* and *information about the (designated) preserver*—such as the creator's and preserver's mission, organizational structure, activities and existing technological, financial and human resources, etc.—are needed to help identify the framework policies and design requirements for the chain of preservation framework (see A1.1).

Information about available technology (i.e., documentation concerning the software and hardware available on the market to the creator and to the preserver) is required to support the

(re)design for the record-making (see A1.2.1), recordkeeping (see A1.2.2) and permanent preservation systems (see A1.2.3). It is also needed during the appraisal of the creator's records by the preserver to support the process of reconciling the preservation requirements of the records being appraised with the preserver's existing and/or potential preservation capabilities (see A4.2.2.3.3).

Ideally, creator's and preservers should, to the extent possible, establish and provide users with access to formal records discovery instruments (indexes, inventories, record descriptions, etc.) as well as put in place formal records access submission procedures. The final two top-level inputs, *unmediated access requests for kept records and/or information* and *unmediated access requests for preserved records and/or information*, recognize that this level of control is not always feasible.

Outputs of record activities

Although there are many different top-level outputs, closer inspection reveals that they are all either documents or records¹⁸ and could, in fact, be represented by just two arrows: *documents issued by the creator* and *documents issued by the preserver*. The primary reason choosing instead to identify the various types of documents and records generated by the creator and the preserver at this level is to provide users of the model with an high-level overview of the main types of record-making, recordkeeping and records preservation activities that generate output that needs to be managed.

The Four Main Records Activities

The COP model distinguishes four main records activities: (1) managing the framework for the chain of preservation, (2) managing records creation, (3) managing records in a recordkeeping system and (4) preserving selected records. The following section summarizes these main activities and their important outcomes.

Managing the Framework for the Chain of Preservation (A1)

This activity involves determining framework requirements and designing, implementing and maintaining a chain of preservation framework. As used in this context, a *framework* means all the elements of policy, strategy, method and so on needed to manage digital records.

Developing the Management Framework (A1.1)

This activity involves analyzing information about the records creator and its existing records and about the designated records preserver to identify the management policies and design requirements for the chain of preservation framework. Specifically, the component activities of developing the management framework are:

1. *to analyze the records creator* (A1.1.1), which involves assessing key information about the records creator to help identify the record-making and recordkeeping-related requirements for the chain of preservation framework, including the creator's:
 - mission;
 - organizational structure;

¹⁸ Technically speaking, given the definition of record used by the InterPARES Project, all of the outputs are in fact documents even though many are identified as records. This is because, by definition, a record is a document that an entity either makes or receives and *sets aside*. From the perspective of the sender, things that send to external juridical or physical persons are documents, while the copies of the sent documents retained by the sender are records.

- activities;
 - existing technological, financial and human resources; and
 - records-related needs and risks.
2. *to analyze the creator's existing records* (A1.1.2), which involves assessing creator's existing records and information about those records to determine framework requirements for managing the records;
 3. *to analyze the designated records preserver* (A1.1.3), which involves assessing the same key information about the designated records preserver as noted above for the records creator to help identify the preservation-related requirements for the chain of preservation framework;
 4. *to establish the framework management policies* (A1.1.4), which involves developing management regime policies for establishing overall framework design requirements based on the findings of the above analyses of the designated preserver and the records creator and its existing records; and
 5. *to establish the framework design requirements* (A1.1.5), which involves first identifying the rules guiding the design of the chain of preservation framework on the basis of the analyses of the designated preserver and the records creator and its existing records, and then issuing specific design requirements—that is, the record-making, recordkeeping and permanent preservation needs that should guide the framework design—and framework policies—that is, the collective, high-level management principles that should guide and control the development of the framework requirements.

Designing the Framework (A1.2)

Designing the chain of preservation framework involves developing three things: (1) a record-making system design, (2) a recordkeeping system design and (3) a permanent preservation system design.

The distinction between the record-making and recordkeeping systems should be made clear. The record-making system consists of a set of rules governing the creation of records and the tools and mechanisms used to implement these rules. In practice, this involves the *capture* and *identification* of documents, the *declaration* and *execution* of records and the deliberate act of *setting aside* completed records by transferring them to the recordkeeping system. Thus, the record-making system can be distinguished conceptually from the recordkeeping system, which is a set of rules governing the controlled *access* to, and the *storage*, *maintenance* and *disposition* of, *kept records* (i.e., completed records that have been “set aside” in the recordkeeping system for future action or reference) and/or information about kept records and the tools and mechanisms used to implement these rules. In real situations, this distinction might be transparent to the user.

Designing the Record-making System (A1.2.1), the Recordkeeping System (A1.2.2) and the Permanent Preservation System (A1.2.3)

The process for designing the record-making, recordkeeping and permanent preservation systems involves the same four basic activities for each system (as discussed below). The major design distinctions between the three systems relate primarily to the types of “sub-systems” within each system and, to varying degrees, the types of rules and procedures and system instruments associated with each system. As envisioned in this model, the so-called “sub-systems” within each of the three main systems are distinguished primarily on the basis of conceptual rather than concrete functional boundaries relating to the main types of activities that

impact upon the creation and maintenance of accurate and reliable records and the long-term preservation of authentic records. Thus, as with the distinction between the record-making and recordkeeping systems, the distinctions between some or all of the sub-systems within each of the three main systems may, in many cases, be transparent to the user. With this understanding in mind, the key sub-systems for each of the three main systems as delineated as follows:

1. Record-making System:

- a. *Document Capture System*, the main purposes of which are to facilitate the recording and saving of particular instantiations of incoming external documents or internal documents made by the creator in accordance with the specifications of the creator's documentary forms, integrated business and documentary procedures and record-making access privileges.
- b. *Document Identification System*, the main purposes of which are to facilitate the creation and recording of identity metadata for captured documents that convey the action in which the document participates and its immediate context.
- c. *Records Declaration System*, the main purpose of which is to facilitate the intellectual "setting-aside" of captured and identified documents as records by assigning classification codes from the classification scheme, and adding these codes to the record's identifying metadata, and by assigning registration numbers based on the registration scheme, and adding these numbers to the record's identifying metadata.
- d. *Records Execution System*, the main purposes of which are to facilitate the creation and recording of the key metadata (e.g., priority of transmission, transmission date, actions taken, etc.) for each record that convey information related to, and actions taken during the course of, the formal execution phase of the administrative procedure in which each record participates.
- e. *Records Transfer System*, the main purpose of which is to facilitate the transfer of executed or completed records deemed worthy of retention by the creator to the recordkeeping system for the purpose of maintaining them for future action or reference.

2. Recordkeeping System:

- a. *Records Information System*, the main purposes of which are to facilitate the generation, capture, compilation and management of information about records in the recordkeeping system, and about all recordkeeping maintenance, access and disposition activities applied to the records, for use in maintaining the authenticity of the records in the recordkeeping system and for facilitating records appraisal activities by the preserver and records indexing, storage, access and disposition activities by the creator.
- b. *Records Indexing System*, the main purpose of which is to facilitate the indexing of records in the recordkeeping system, through assignment of access points to each record using a controlled recordkeeping vocabulary, for the purpose of facilitating effective and efficient discovery and retrieval of records in the recordkeeping system.
- c. *Records Storage System*, the main purposes of which are to facilitate the processes of placing and maintaining the digital components of the creator's records, and their metadata, in a storage system on digital media.
- d. *Records Retrieval System*, the main purpose of which is to facilitate the extraction of copies of the digital components of the creator's records in storage, and their metadata, in response to retrieval requests.

- e. *Records Access System*, the main purpose of which is to facilitate access to authentic copies of the creator's records, or information about the records, to authorized users upon request by connecting users with the necessary tools (such as indexes) for locating records and by effecting the reconstitution of retrieved digital components and/or information in authentic form and the presentation of the manifested records or information to users, and/or the packaging of retrieved digital components with information about how to reconstitute and present the records and/or information with the appropriate extrinsic form.
 - f. *Records Disposition System*, the main purposes of which are to facilitate the authorized destruction and/or transfer to a designated preserver of the creator's records in accordance with the creator's retention schedule and the preserver's terms and conditions of transfer and disposition rules and procedures.
3. Permanent Preservation System:
- a. *Records Information System*, the main purposes of which are to facilitate the generation, capture, compilation and management of information about records in the permanent preservation system, and about all preservation selection, acquisition, description, storage, retrieval and access activities applied to the records, for use in maintaining authentic copies of the creator's records in the permanent preservation system and for facilitating all records preservation activities.
 - b. *Records Selection System*, the main purposes of which are to facilitate the appraisal and selection of the records of creators, as well as the ongoing monitoring of appraised records, changes to the record-making and recordkeeping activities of the creators whose records have been appraised and any other factors that might significantly impact on the accuracy, validity or integrity of the preserver's current or active appraisal decisions.
 - c. *Records Acquisition System*, the main purposes of which are to facilitate the transfer, intake, processing and accessioning of the records of creators selected for long-term preservation.
 - d. *Records Description System*, the main purposes of which are to facilitate the intellectual and physical control of accessioned records by recording information about their nature, make-up and contexts (juridical-administrative, provenancial, procedural, documentary and technological),¹⁹ as well as about any changes the records have undergone since they were first created.
 - e. *Records Storage System*, the main purposes of which are to facilitate the processes of placing and maintaining the digital components of the accessioned records, and their metadata, in a storage system on digital media.
 - f. *Records Retrieval System*, the main purpose of which is to facilitate the extraction of copies of the digital components of the preserved records in storage, and their metadata, in response to retrieval requests.
 - g. *Records Access System*, the main purpose of which is to facilitate access to authentic copies of the preserved records, or information about the records, to authorized users upon request by connecting users with the necessary tools (such as record descriptions and complimentary description instruments such as guides, inventories, indexes, repository locators and related finding aids) for locating records and by

¹⁹ These contexts are defined in the report of the Authenticity Task Force (2001), "Appendix 1: Template for Analysis," in Duranti, *Long-term Preservation*, op. cit., 198–199. Online reprint available at http://www.interpares.org/book/interpares_book_j_app01.pdf.

effecting the reconstitution of retrieved digital components and/or information in authentic form and the presentation of the manifested records or information to users, and/or the packaging of retrieved digital components with information about how to reconstitute and present the records and/or information with the appropriate extrinsic form.

As noted above, the process for designing the record-making, recordkeeping and permanent preservation systems involves the same four basic activities for each system. These activities are identified as follows:

1. *to develop the system's administrative infrastructure* (A1.2.1.1, A1.2.2.1 and A1.2.3.1, respectively), which for each system (and sub-system) involves defining, analyzing, creating and documenting a comprehensive, integrated set of administrative policies, strategies, rules and procedures, and instruments to support system activities and to enable the systems to meet their functional requirements. *Policies* are the collective, high-level management principles that guide and control development, implementation and execution of a system/sub-system and the activities it supports. *Strategies*, which help enable policies, are authoritative objectives and methods governing the operation of a system/sub-system and the activities it supports. *Rules and procedures*, which, in turn, help enable strategies, are the authoritative instructions governing the operation of a system/sub-system and the activities it supports. Finally, within the context of this model, *instruments* are the tools that support the various record-making, recordkeeping and record preservation processes in each of the three main systems and each of their sub-systems. The key rules and procedures and system instruments applicable to each of the three main systems are described below.

- *Rules and Procedures:*

Within the record-making system, aside from the rules and procedures specific to the activities within each sub-system, the general rules and procedures include (see A1.2.1.1.3):

- a. *integrated business and documentary forms*, consisting of procedures for carrying out the creator's business that have been linked to a scheme or plan for organization of the creator's records;
- b. *procedures for ensuring the accuracy of records*, consisting of authoritative procedural orders designed to ensure that records are created accurate in the record-making system;
- c. *procedures for ensuring the reliability of records*, consisting of authoritative procedural orders designed to ensure that records are created reliable in the record-making system; and
- d. *record-making access privileges*, consisting of specification of the authority to compile, annotate, read, retrieve, transfer and/or destroy records in the record-making system, granted to officers and employees of the creator;

Within the recordkeeping system, aside from the rules and procedures specific to the activities within each sub-system, the general rules and procedures include (see A1.2.2.1.4):

- a. *procedures for maintaining authentic records*, consisting of authoritative procedural orders designed to ensure that records maintain their identity and integrity as they are managed and maintained in the recordkeeping system; and

- b. *recordkeeping access privileges*, consisting of specification of the authority to annotate, read, retrieve, transfer and/or destroy records in the recordkeeping system, granted to officers and employees of the creator;
- Within the permanent preservation system, aside from the rules and procedures specific to the activities within each sub-system, the general rules and procedures include (see A1.2.3.1.4):
- a. *procedures for assessing the authenticity of records*, consisting of authoritative procedural orders designed to facilitate evaluation of the authenticity of the creator's records during appraisal and/or acquisition of the records by the preserver;
 - b. *procedures for maintaining authentic copies of records*, consisting of authoritative procedural orders outlining pre-established requirements for maintaining authentic copies of the creator's records in the custody of the preserver; and
 - c. *preservation access privileges*, consisting of specification of the authority to compile, annotate, read, retrieve, transfer and/or destroy records in the permanent preservation system, granted to officers and employees of the creator;
- *System Instruments*:
 Within the record-making system, the key system instruments include (see A1.2.1.1.4):
 - a. *records forms*, consisting of specifications of the documentary forms for the various types of records of the creator;
 - b. *record-making metadata schemes*, consisting of lists of all necessary record-making metadata to be recorded to ensure the reliability, accuracy, identification and integrity of records created in the record-making system;
 - c. *record-making reporting schemes*, consisting of plans for the systematic generation of documentation or reports of the creator's record-making activities according to logically structured conventions, methods and procedural rules; and
 - d. *record profile schemes*, consisting of plans for the systematic generation of digital forms designed to contain the attributes of records that attest to their identity and integrity, and which are generated when users create, send and/or close records, are updated when users subsequently modify or annotate completed records, and remain inextricably linked to the records for the entire period of their existence while in the custody of the creator;

Within the recordkeeping system, the key system instruments include (see A1.2.2.1.4):

 - a. *recordkeeping metadata schemes*, consisting of lists of all necessary recordkeeping metadata to be recorded to ensure the identification and integrity of records maintained in the recordkeeping system;
 - b. *recordkeeping registration and classification schemes*, consisting of a method for assigning a unique registration number to each record in the recordkeeping system and a plan for the systematic identification and arrangement of business activities and records into categories according to logically-structured conventions, methods and procedural rules;
 - c. *recordkeeping reporting schemes*, consisting of plans for the systematic generation of documentation or reports of the creator's recordkeeping activities according to logically structured conventions, methods and procedural rules; and

- d. *retention schedule*, consisting of a document providing description of records series and/or classes and specifying their authorized dispositions;
 - e. *controlled vocabulary/thesaurus*, consisting of one or more managed sets of purposefully delimited and standardised terms, phrases and concepts used by the creator to control the values of metadata elements;
- Within the permanent preservation system, the key system instruments include (see A1.2.3.1.4):
- a. *preservation metadata schemes*, consisting of lists of all necessary preservation metadata to be recorded to ensure the identification and integrity of records preserved in the permanent preservation system;
 - b. *records transfer registration and accession schemes*, consisting of a method for assigning a unique identifier to each received and accessioned records transfer, respectively;
 - c. *preservation reporting schemes*, consisting of plans for the systematic generation of documentation or reports of the preserver's preservation activities according to logically structured conventions, methods and procedural rules; and
 - d. *controlled vocabulary/thesaurus*, consisting of one or more managed sets of purposefully delimited and standardised terms, phrases and concepts used by the preserver to control the values of metadata elements;
2. *to establish the system's functional requirements* (A1.2.1.2, A1.2.2.2 and A1.2.3.2, respectively), which for each system (and sub-system) involves developing and documenting comprehensive and integrated performance, monitoring and technological system requirements. *Performance requirements* are the operational and administrative specifications for measuring the continuing ability of a system/sub-system to fulfil its purpose. *Monitoring requirements* are the operational and administrative conditions that need to be established to facilitate ongoing assessment of the operation of a system/sub-system in relation to the established performance requirements for the system/sub-system. *Technological requirements* are the specifications of the hardware and software needed for a system/sub-system.
 3. *to establish the system's performance requirements* (A1.2.1.3, A1.2.2.3 and A1.2.3.3, respectively), which for each system (and sub-system) involves developing operational benchmarks or standards for the operation of the system, in relation to the established functional requirements, against which the continuing performance and adequacy of an activity, function, process, sub-system or structure within the system can be measured; and
 4. *to design the system's functional infrastructure* (A1.2.1.4, A1.2.2.4 and A1.2.3.4, respectively), which for each system (and sub-system) involves developing a comprehensive, integrated design for the system and each of its sub-systems.

Implementing the Framework (A1.3)

This activity involves acquiring, testing and activating all the components of the record-making, recordkeeping and permanent preservation systems and issuing information about any problems encountered during implementation of any of these systems so that the framework design can be modified accordingly.

Maintaining the Framework (A1.4)

This ongoing activity involves: (a) assessing information about the performance of the record-making, recordkeeping and permanent preservation systems, based on analysis of performance reports periodically generated by the activities in each system and on updated information about the creator and preserver, (b) as appropriate, making recommendations about revising the framework design to correct problems or to accommodate newly-identified requirements and (c) periodically generating requests for updated information about any significant changes to the juridical-administrative, technological and related contexts within which the records creator carries out its records-related activities.

Managing Records in a Record-making System (A2)

This second main activity involves overseeing and coordinating all the activities associated with managing the making and receipt of digital records, transferring created records to the recordkeeping system (i.e., “setting aside”) and monitoring the overall operation of the record-making system. It is understood that documents will be generated in the course of the activities of the creator. Once documents are made or received by the creator, the record-making activities outlined below must be carried out as a precursor to setting aside the records in the recordkeeping system and maintaining their authenticity.

Monitoring the Performance of the Record-making System (A2.1)

This activity involves assessing the efficacy of the performance of the record-making system as a whole by analyzing performance reports on the operation of each of the record-making system’s records capture, identification, declaration, execution and transfer sub-systems and, in response, issuing (1) activity directives for record-making activities for each sub-system—that is, authoritative procedural orders/instruments intended to facilitate effective, co-ordinated and responsive record-making system activities—and (2) reports on the performance of the record-making system to the overarching performance monitoring function (Maintain Framework, A1.4) for use in continued refinement and maintenance of the chain of preservation framework.

Managing the Making and Receipt of Records (A2.2)

This activity provides overall control and co-ordination of the creator’s activities related to capturing and identifying make internal documents and documents received from external juridical or physical persons and subsequently declaring and executing them as records. Specifically, the component activities of managing the making and receipt of records are:

1. *to make documents* (A2.2.1), which involves compiling or composing digital information in a syntactic manner in accordance with the specifications of the creator’s documentary forms, integrated business and documentary procedures and record-making access privileges. This activity results in made documents, which are discrete aggregations of digital information that have been compiled in a syntactic manner, but which have not yet been recorded or “captured” (i.e., affixed to a digital medium with fixed form and stable content). In practical terms, this activity refers to document composition processes, such as writing correspondence, filling out forms or the process of compiling a document using information extracted from other sources, such as databases, documents and/or records;
2. *to capture documents made or received by the creator* (A2.2.2), which involves recording and saving (i.e., *affixing* to a digital medium in a *stable* syntactic manner) particular instantiations of incoming documents from external juridical or physical persons and

internal documents made by the creator in the record-making system in accordance with the specifications of the creator’s integrated business and documentary procedures and record-making access privileges, and attaching to each captured document the following metadata:

- a. For captured made documents:
 - chronological date (and possibly time) of compilation and capture;
 - documentary form—that is, whether the document is a report, a letter, a contract, etc.; and
 - digital presentation—that is, file format, wrapper, encoding, etc.
- b. For captured received documents:
 - chronological date (and possibly time) of transmission from the originator;
 - chronological date (and possibly time) of receipt and capture;
 - documentary form—that is, whether the document is a report, a letter, a contract, etc.; and
 - digital presentation—that is, file format, wrapper, encoding, etc.

Although, as modeled here, this is the first activity that generates “documents” in the InterPARES sense of the term—that is, as “indivisible units of information constituted by a message affixed to a medium (recorded) in a stable syntactic manner [with] fixed form and stable content”—in practice, the distinction between the previous “making” and this “capturing” activity will, in many situations, be essentially conceptual and transparent to users.

3. *to identify captured documents* (A2.2.3), which involves attaching to each captured document identity metadata that convey the action in which the document participates and its immediate context, and that are vital to enabling the presumption of authenticity of digital records,²⁰ including:
 - names of the persons involved in the creation of the document, including:
 - *author(s)*—that is, the physical or juridical person(s) responsible for issuing the document;
 - *writer(s)*—that is, the physical person(s) or position(s) responsible for articulating the content of the document;
 - *addressee(s)*—that is, the physical or juridical person(s) for whom the document is intended;
 - *originator(s)* (if different from the author or writer)—that is, the physical person(s), position(s) or office(s) responsible for the electronic account or technical environment where the document is generated and/or from which the document is transmitted;²¹ and
 - *receiver(s) or recipient(s)*—that is, the physical or juridical person(s) to whom the document may be copied or blind copied for information purposes;

²⁰ See Authenticity Task Force (2002), “Appendix 2: Requirements for Assessing and Maintaining the Authenticity of Electronic Records,” in Duranti, *Long-term Preservation*, op. cit., 204-219. Online reprint available at http://www.interpares.org/book/interpares_book_k_app02.pdf.

²¹ Identification of the originator is only important in cases where the person, position or office responsible for physically creating and/or transmitting the document is neither the author nor the writer, and when the presence of the originator’s name appearing on, or in association with, the document calls into question the actual author and/or writer of the document. This is most commonly associated with e-mails in instances where the name of the originator appears in the header of an e-mail and/or its attachments that were in fact authored and/or written by another person, but physically manifested and/or transmitted on behalf of that person by the originator.

- name of the action or matter—that is, the subject line(s) and/or the title at the top of the document;
 - indication of the presence of a digital signature;
 - indication of other forms of authentication, including:
 - *corroboration*—that is, an explicit mention of the means used to validate the document;
 - *attestation*—that is, the validation of the document by those who took part in the issuing of it, and by witnesses to the action or to the ‘signing’ of the document;
 - *subscription*—that is, the name of the author or writer appearing at the bottom of the document; and
 - *qualification of signature*—that is, the mention of the title, capacity and/or address of the person or persons signing the document;
 - indication of any attachments—that is, mention of autonomous digital objects linked inextricably to the document.
4. *to declare captured and identified documents as records (A2.2.4)*, which involves intellectually setting aside captured and identified documents as records by assigning classification codes from the classification scheme to the documents and adding these codes to the identifying metadata, and by assigning to the documents registration numbers based on the registration scheme and adding these numbers to the identifying metadata. The thinking here is that records classification, in particular, is a critical act in creating a record. It establishes that a document has been “set aside” for incorporation in the records of the creator and places it in relation to the business process of which it is a part, to the action that generated it and to other records. In some classification systems, it may also relate the record to the place in the administrative structure where it was created. In particular, a classification scheme or plan lays out what the aggregations of records are—that is, the series and classes of records—so that all of the records bearing on particular processes and matters can be identified and circumscribed. Identity metadata captured for this activity could include:

New metadata:

- classification code; and
- registration number.

Inherited metadata (i.e., identity metadata inherited from the current classification level and from all higher levels in the classification system, as applicable):

- name of creator;
 - indication of copyright or other intellectual rights;
 - name of handling office (if not evident in the classification code);
 - name of office of primary responsibility (if not evident in the classification code and records retention schedule);
 - access restriction code (if not evident in the classification code);
 - access privileges code (if not evident in the classification code);
 - vital record code (if not evident in the classification code); and
 - planned disposition (if not evident in the classification code).
5. *to execute records (A2.2.5)*, which involves attaching to each record metadata that convey information related to, and actions taken during the course of, the formal execution phase of the administrative procedure in which the record participates. This activity may also involve transmitting documents to external physical or juridical persons

and making record copies of the sent documents. Metadata captured for this activity could include:

- priority of transmission;
- transmission date, time and/or place;
- actions taken;
- dates and times of further action or transmission; and
- information on any attachments—that is, mention of autonomous items that were linked inextricably to the document prior to its transmission for the document to accomplish its purpose.

Managing the Setting Aside of Completed Records (A2.3)

This activity provides overall control and co-ordination of the transfer of completed (executed) records to the recordkeeping system. Specifically, the component activities of managing the setting aside of completed records are:

1. *to monitor the performance of the record-making transfer system (A2.3.1)*, which involves assessing the efficacy of the performance of the record-making transfer system by analyzing reports on the operation of record-making transfer activities and, in response, issuing (1) activity directives for transfer activities and (2) reports on the performance of the record-making transfer system for use in continued maintenance of the record-making system;
2. *to prepare completed records for transfer to the recordkeeping system (A2.3.2)*, which involves attaching to completed records integrity and related metadata that convey information related to, and actions taken during the course of, managing the records for records management purposes prior to setting them aside in the recordkeeping system; compiling information about the records that is needed to meet all transfer information requirements; and ensuring that the records are in the proper format for transfer to the recordkeeping system as prescribed by recordkeeping system rules and procedures and technological requirements. Metadata captured for this activity could include:
 - archival or filing date—that is, the date on which a record is officially incorporated into the creator’s records;
 - draft or version number;
 - expression of archival bond (e.g., via classification code, file identifier, record item identifier, dossier identifier, etc.);
 - name of the creator—that is, the name of the physical or juridical person in whose archival fonds the record exists;
 - indication of copyright or other intellectual rights (if applicable);²²
 - indication, as applicable, of the existence and location of duplicate records, whether inside or outside the record-making or recordkeeping systems and, in instances where duplicate records exist, which is the *authoritative copy*—that is, the instantiation of a record that is considered by the creator to be its official record and is usually subject to procedural controls that are not required for other instantiations;²³

²² If a record comprises material copyrighted by different authors, indication of copyright clearance (or lack thereof) with related dates is necessary.

²³ InterPARES 2 Terminology Database, available at http://www.interpares.org/ip2/ip2_terminology_db.cfm. In cases where a record is certified by the author or creator as an “approved reproduction” of a work (for example, a digital work of art), indication of the existence of such certification is required.

- name of the handling office (if not evident in the classification code)—that is, the person or office using the record to carry out business;
 - name of the office of primary responsibility (if not evident in the classification code or the records retention schedule)—that is, the office given the formal competence for maintaining the authoritative version or copy of records belonging to a given class within a classification scheme;²⁴
 - indication of any technical changes to the records—for example, change of encoding, wrapper or format, upgrading from one version to another of an application, or conversion of several linked digital components to one component only—by embedding directly in the record digital components that were previously only linked to the record, such as audio, video, graphic or text elements like fonts;
 - indication of any annotations²⁵ or new attachments (e.g., records profiles);
 - access restriction code (if applicable and if not evident in the classification code)—that is, indication of the person, position or office authorized to read the record;
 - access privileges code (if applicable and if not evident in the classification code)—that is, indication of the person, position or office authorized to annotate the record, delete it, or remove it from the system;
 - vital record code (if applicable and if not evident in the classification code)—that is, indication of the degree of importance of the record to continue the activity for which it was created or the business of the person/office that created it;²⁶ and
 - planned disposition (if not evident in the classification code)—for example, removal from the live system to storage outside the system, transfer to the care of a trusted custodian, or scheduled deletion.
3. *to transfer completed records to the recordkeeping system (A2.3.3)*, which involves sending or transmitting completed records prepared for transfer to the office responsible for the recordkeeping function with the accompanying documentation necessary for recordkeeping. Metadata captured for this activity could include:
- indication of the record(s) transferred;
 - name of the person effecting the transfer;
 - name of the entity to whom the records are transferred (if different than the office of primary responsibility); and
 - date/time of the transfer.

Managing Records in a Recordkeeping System (A3)

This third main activity involves overseeing and coordinating all the activities associated with maintaining records in the recordkeeping system to ensure their continuing authenticity, facilitating access to them, carrying out their disposition and monitoring the overall performance of the recordkeeping system.

²⁴ This may be the same as the handling person/office.

²⁵ Annotations are additions made to a record after it has been completed or executed. Therefore, annotations are not considered elements of the record's documentary form.

²⁶ The vital record code only pertains to specific communities of practices, such as legal and medical offices, who must identify the records that are vital to the continuance of their business in case of disaster and who would therefore exercise special protection measures on those records.

Monitoring the Performance of the Recordkeeping System (A3.1)

This oversight activity involves assessing the efficacy of the recordkeeping system as a whole by analyzing reports on the operation of each of the recordkeeping system's records information, indexing, storage, retrieval, access and disposition sub-systems (and, as necessary, by examining records) and, in response, issuing (1) activity directives for each of the sub-systems and (2) reports on the performance of the recordkeeping system to the overarching performance monitoring function (Maintain Framework, A1.4) for use in continued refinement and maintenance of the chain of preservation framework.

Managing the Maintenance of Kept Records (A3.2)

This activity involves managing information about maintenance activities carried out on records in the recordkeeping system, managing the indexing of the records and the development of indexing instruments and managing the storage of the records or, more accurately, their digital components in the recordkeeping storage system.

Managing Information About Kept Records (A3.2.1)

The main infrastructural component supporting this activity is a recordkeeping information system. It is important to emphasize that, as envisioned in this model, an information system (whether in the recordkeeping or permanent preservation system) is a set of rules governing the management and maintenance of information about the operation of the system and about the records in the system—including their digital components and the maintenance actions applied to them—and the tools and mechanisms used to implement these rules. Thus, it is much more than a software application, such as an electronic document and records management system (EDRMS)—which would, instead, simply constitute one of the tools within the system.

In general terms, this activity provides overall control and co-ordination of contextual and related information about records transferred to, and maintained in, the recordkeeping system, information about their access and use and information about ongoing records maintenance activities for use in records appraisal activities by the preserver and in records indexing, storage, access and disposition activities by the creator.

In terms of the underlying concern for maintaining the authenticity of the creator's records, the aim of this activity is to make sure that the nature of any actions undertaken upon the records is documented, whether through additions of integrity metadata or by compilations of reports, to provide a kind of audit trail on what has happened to the records since their creation. Such information is necessary when assessing the ongoing trustworthiness (reliability and authenticity) of the records in the system. In some cases, it may also be necessary to test the accuracy of records, such as when changes are made to a database that may affect the accuracy of data used to generate records.

The primary outputs of this activity include:

1. *recordkeeping information system performance information*—that is, continuously logged and updated documentation concerning the ability of the recordkeeping information sub-system to fulfil its purpose and achieve its performance objectives;
2. *information about kept records for appraisal*—that is, documentation compiled about the identity, integrity, format, form, context or other characteristics of records in the recordkeeping system for the purpose of appraising records and making appraisal decisions;

3. *information about kept records for creation*—that is, documentation compiled about records in the recordkeeping system for the purpose of helping inform and direct records creation activities;
4. *information about context*—that is, documentation compiled about the juridical-administrative, provenancial, procedural, documentary and/or technological contexts of kept records that is not available from the records themselves, for the purpose of facilitating appraisal;
5. *information about kept records in storage*—that is, documentation compiled about kept records in the recordkeeping storage system for the purpose of processing retrieval requests for records and/or information about records;
6. *information about digital components of kept records*—that is, technical information compiled about digital components of records in the recordkeeping storage system for the purpose of facilitating discovery of, and/or processing access requests for, records and/or information about records;
7. *information for indexing*—that is, documentation compiled about kept records for the purpose of establishing access points and creating indexing instruments to facilitate record discovery and retrieval; and
8. *information for storage of kept records*—that is, documentation compiled about kept records and their elements and digital components for the purpose of facilitating their storage and continued maintenance.

Managing the Indexing of Kept Records (A3.2.2)

This activity provides overall control and co-ordination of records indexing activities. The component activities of managing the indexing of kept records are:

1. *to monitor the performance of the recordkeeping indexing system (A3.2.2.1)*, which involves assessing the efficacy of the performance of the recordkeeping indexing system by analyzing reports on the operation of recordkeeping indexing activities and, in response, issuing (1) activity directives for indexing activities and (2) reports on the performance of the indexing system for use in continued maintenance of the recordkeeping system;
2. *to index kept records (A3.2.2.2)*, which involves establishing and recording access points for kept records within the context of a controlled recordkeeping vocabulary applied according to recordkeeping indexing system rules, procedures and strategies; and
3. *to develop indexing instruments (A3.2.2.3)*, which involves preparing tools that facilitate discovery and retrieval of the records in the recordkeeping system, such as guides, inventories and indexes.

Managing the Storage of Kept Records (A3.2.3)

This activity provides overall control and co-ordination of the recordkeeping storage system and the records stored in the system. The component activities of managing the storage of kept records are:

1. *to monitor the performance of the recordkeeping storage system (A3.2.3.1)*, which involves assessing the efficacy of the performance of the recordkeeping storage system by analyzing reports on the operation of recordkeeping storage activities and, in response, issuing (1) activity directives for storage activities and (2) reports on the performance of the storage system for use in continued maintenance of the recordkeeping system;

2. *to place the kept records in storage* (A3.2.3.2), which involves placing the digital components of kept records and their metadata into storage in accordance with the procedures for maintaining authentic records and the actions prescribed by the recordkeeping storage system strategies, rules and procedures and activity directives. Integrity metadata captured for this activity could include:
 - indication of the original state (e.g., file format) of the record(s) prior to storage;
 - indication of any modification(s) made to the record(s) in preparation for storage;
 - indication of the state of the record(s) after the modification(s) (e.g., impact on form, format, authenticity, etc.);
 - reason/authorization for the modification(s) (e.g., through reference to the relevant section of the recordkeeping storage system strategy);
 - date/time of any modification(s);
 - name of the person responsible for the modification(s);
 - name of person responsible for placing the record(s) in storage;
 - date/time the record(s) was/were placed in storage; and
 - location of the record(s) in storage.
3. *to maintain records in the recordkeeping storage system* (A3.2.3.3), which involves the following activities:
 - a. *to monitor the kept records in storage* (A3.2.3.3.1), which involves (1) keeping track of the condition and maintenance requirements of kept records—more specifically, their digital components and metadata—and the media on which they are stored in the recordkeeping storage system to identify storage that needs backing-up, digital components and/or metadata that need correcting or updating and media that need refreshing and (2) issuing on maintenance activity reports that provide continuously updated documentation indicating the location of digital components of kept records in storage, the presence, nature and locations of recordkeeping system backups, the occurrence of storage problems, the actions taken to correct storage problems, the actions taken to update records and refresh storage media, the results of such actions and assessment of the impact, if any, of the maintenance activities on the authenticity of the records;
 - b. *to back-up the recordkeeping storage system* (A3.2.3.3.2), which involves routinely creating copies of the digital content in the recordkeeping storage system for the purpose of recovery in the event of a disaster resulting in system failure or corruption, and recording information about the back-up activities. It is important to distinguish here between comprehensive *system backups* and localized *content backups*. System backups contain a copy of *all* the digital objects in the system, including the operating system, the software applications and all digital objects (i.e., digital components of the records and their metadata) in the system. A system backup provides the maximum level of recovery potential in the event of a disaster or system corruption. Content backups contain a copy of selected aggregations of the digital objects in the system and, therefore, only offer limited recovery potential, especially in cases where system applications become corrupted. Integrity metadata about these back-up activities, captured in activity reports, could include:²⁷

²⁷ As per InterPARES 1 Benchmark Requirement A.3 - Protective Procedures: Loss and Corruption of Records (Authenticity Task Force, "Appendix 2," op. cit., 211).

- indication of the reason/authorization for the backup (e.g., through reference to the relevant section of the recordkeeping storage system strategy);
 - indication of the type of backup (e.g., incremental, differential, full) ;
 - indication of the extent or content of the backup (e.g., full system, selected groups of records, etc.);
 - name of the person creating the backup;
 - date/time of the backup;
 - indication of the software application (including version number) used to create the backup; and
 - location of the backup; and
 - backup identification number.
- c. *to correct problems with kept records in storage (A3.2.3.3.3)*, which involves taking the actions prescribed by the relevant recordkeeping storage system strategies, rules and procedures and activity directives, in accordance with the procedures for maintaining authentic copies of records, to identify and eliminate problems in storage to ensure that the records remain accessible, legible and intelligible over time; and recording information about the correction activities and the corrected digital components. Integrity metadata about this activity, captured either as metadata attached to the records or in activity reports, could include:²⁸
- indication of the original state (e.g., file format) of the record(s) prior to correction;
 - indication of the correction processe(s) used;
 - indication of the state of the record(s) after correction (e.g., impact on form, format, authenticity, etc.);
 - indication of the reason/authorization for the correction(s) (e.g., through reference to the relevant section of the recordkeeping storage system strategy);
 - name of the person responsible for the correction(s);
 - date/time of the correction(s);
 - location of the corrected record(s); and
 - correction identification number.
- d. *to update kept records in storage (A3.2.3.3.3)*, which involves carrying out conversion actions on the digital components of kept records in storage in accordance with the procedures for maintaining authentic records and the actions prescribed by the relevant recordkeeping storage system strategies, rules and procedures and activity directives, to ensure the records remain accessible, legible and intelligible over time; and recording information about the updating activities and the updated digital components. Typical conversion activities might include migration, standard-ization or transformation to persistent form. Integrity metadata related to this activity would be similar to those noted above for correction activities;²⁹ and
- e. *to refresh the media for kept records in storage (A3.2.3.3.5)*, which involves copying or transferring the digital components of kept records in storage from one medium to another—or otherwise ensuring that the storage medium remains sound—in accordance with the procedures for maintaining authentic records and the relevant actions prescribed

²⁸ Ibid.

²⁹ As per InterPARES 1 Benchmark Requirement A.4 - Protective Procedures: Media and Technology (Authenticity Task Force, “Appendix 2,” op. cit.).

by the recordkeeping storage system strategies, rules and procedures and activity directives; and recording information about the refreshment activities and about any impact to the digital components on the refreshed media. Again, integrity metadata related to this activity would be similar to those noted above for correction activities.³⁰

Managing Access to Kept Records (A3.3)

The recordkeeping access system is defined as a set of rules governing the specific methods and strategies for discovering, reconstituting and presenting and/or packaging retrieved records and/or information about records in the recordkeeping system and the tools and mechanisms used to implement these rules.

This activity entails facilitating the discovery of, and managing access requests for, kept records and/or information about kept records and monitoring the performance of the recordkeeping access system.

Monitoring the Performance of the Recordkeeping Access System (A3.3.1)

This activity involves assessing the efficacy of the performance of the recordkeeping access system by analyzing reports on the operation of recordkeeping access activities and, in response, issuing (1) activity directives for access activities and (2) reports on the performance of the access system for use in continued maintenance of the recordkeeping system.

Facilitating the Discovery of Kept Records and/or Information (A3.3.2)

This activity provides authorized internal and external users with mediated records query, search and discovery support through the use of tools such as thesauri and records indexes.

Managing Requests for Kept Records and/or Information (A3.3.3)

This activity provides overall control and co-ordination of internal and external requests for access to records and/or information about kept records by processing access requests, retrieving the digital components for the requested records and/or information, verifying the retrieved components and information and providing access to the retrieved records and/or information. The component activities of managing requests for kept records and/or information are:

1. *to process requests for kept records and/or information (A3.3.3.1)*, which involves the following activities:
 - a. *to register recordkeeping access requests (A3.3.3.1.1)*, which involves recording registration information about received mediated and unmediated requests for access to kept records and/or information about the records and issuing notifications of receipt to the persons requesting the records. Integrity metadata captured for this activity could include:
 - name of the person requesting the record(s) and/or information;
 - name of the person for whom the request is being made (if different than the above);
 - date/time of the request;
 - indication of the records and/or information requested;
 - access privileges of the requester;
 - name of the person registering the request;
 - request registration number;
 - indication of notification of receipt sent (including indication of any additional information needed to register the request, if any);

³⁰ Ibid.

- name of person to whom the notification of receipt was sent;
 - name of the person issuing the notification of receipt; and
 - date/time the notification of receipt was sent.
- b. *to retrieve information needed to process recordkeeping access requests* (A3.3.3.1.2), which involves gathering the information, from indexing instruments, controlled vocabularies, record profiles and other recordkeeping tools, needed to process the access requests and translate them into retrieval requests;
 - c. *to generate recordkeeping retrieval requests* (A3.3.3.1.3), which involves translating access requests into requests to the recordkeeping storage and information systems for retrieval of the exact digital components and/or information required to fulfil the access requests; and
 - d. *to generate recordkeeping requests specifications* (A3.3.3.1.4), which involves issuing instructions to the recordkeeping retrieval and access systems on how to fulfil requests for kept records and/or information about the records based on analyses of the requests and the processing information received from A3.3.3.1.3 in relation to the relevant recordkeeping access system strategies, rules and procedures (including procedures for maintaining authentic records) and access privileges;
2. *to retrieve the requested kept records and/or information* (A3.3.3.2), which involves outputting copies of the digital components of the requested records and information about the records and their digital components—such as their identity, integrity, format, form, context, content, etc.—in response to retrieval requests; and
 3. *to verify the retrieved kept records and/or information* (A3.3.3.3), which involves determining (1) whether all the components and information necessary to satisfy an access request have been received from the recordkeeping storage and information systems, (2) whether the retrieved components and information can be processed for output and (3) in cases where digital components are encountered that need updating or correcting, redirecting them (or information about the problems encountered) to the maintenance function of the recordkeeping storage system. Integrity metadata captured for this activity could include:
 - request registration number;
 - indication of the measures used to verify the retrieved digital components and/or information;
 - name of the person verifying the retrieved digital components and/or information;
 - indication of the determination of verification (i.e., verified, rejected);
 - reason(s) for rejection (as appropriate);
 - indication of required maintenance action(s) (as appropriate); and
 - date of verification/rejection.
 4. *to provide access to the retrieved kept records and/or information* (A3.3.3.3), which involves providing users with access to copies of kept records and/or information about the records. For certain requests, such as those under freedom of information and privacy laws, it may be necessary to document and keep information about the records and/or information issued in response to requests, to whom the records and/or information were issued and when. In cases where redacted records are issued, a copy of the redacted³¹ record should be created and its existence properly documented with the appropriate

³¹ Richard Pearce-Moses, in his *A Glossary of Archival and Records Terminology*, defines redaction as “the process of concealing sensitive information in a document before being released to someone not authorized to see that information.” See <http://www.archivists.org/glossary/index.asp>.

metadata. Unsuccessful attempts to provide access to the records and/or information trigger the creation of a “notification of rejection of recordkeeping access request” that is issued to the requestor, a record copy of which is also retained by the creator. The component activities of providing access to retrieved kept records and/or information are:

- a. *to reconstitute kept records and/or information* (A3.3.3.3.4.1), meaning to link or assemble all the verified digital components of the requested records and/or information for the purpose of reproducing and manifesting (presenting) to the user copies of the records and/or information in authentic form and, if necessary, to redact information to meet privacy and/or copyright requirements. Integrity metadata captured for this activity could include:
 - indication of any problems encountered in reconstituting the records and/or information in authentic form;
 - indication of required maintenance action(s);
 - indication of any redaction for privacy or copyright reasons;
 - indication of the reason/authorization for the redaction;
 - date of the redaction;
 - name of the person responsible for handling/executing the redaction; and
 - registration number of the record copy of the redacted record issued to the user.
- b. *to manifest kept records and/or information* (A3.3.3.3.4.2), meaning to present to the user copies of the reconstituted requested records and/or information about the records with the appropriate extrinsic form and, in the case of records aggregates, with information about their relationships to one another (archival bond). This activity also involves providing users with a Certificate of Authenticity, if requested. Regarding metadata, this activity results in the production or compilation of two sets: one set of integrity metadata for the creator to document the activity and one set of identity and integrity metadata for the user. Metadata captured for this activity could include:

Records Creator (integrity metadata)

For requests that are fulfilled (in part or in whole)

- indication of the record(s) and/or information presented;
- indication of any redaction for privacy or copyright reasons (as appropriate);
- indication of a Certificate of Authenticity, if issued;
- indication of the means by which the records were authenticated³²
- name of the person to whom the record(s) and/or information were presented;
- date when the record(s) and/or information were presented;
- name of the person responsible for handling/effecting the access request;
- indication of the state or condition of the record(s) and/or information at time the request was fulfilled (including, especially, an indication of instances where a copy of a presented record is known not to fully and faithfully reproduce the elements expressing its identity and integrity);³³ and
- indication of any problems encountered in manifesting the records and/or information in authentic form.

³² As per InterPARES 1 Benchmark Requirement A.6 - Authentication of Records (Authenticity Task Force, “Appendix 2,” op. cit., 212).

³³ In reference to InterPARES 1 Baseline Requirement B.2.d. (Ibid., 213.).

For requests that cannot be fulfilled (in part or in whole)

- indication of why the request cannot be fulfilled;
- name of the person responsible for determining that the request cannot be fulfilled;
- indication that a notification of rejection was sent;
- name of the person to whom the rejection notification was sent;
- name of the person responsible for issuing the rejection notification; and
- date/time the rejection notification was sent.

Records User

*Identity metadata*³⁴

- name(s) of the person(s) concurring in formation of the record(s);
- name(s) of action or matter;
- date(s) of creation and transmission of the record(s);
- expression of archival bond; and
- indication of any attachments.

Integrity metadata (as necessary)

- indication of access privileges used to control creation and maintenance of the presented record(s);³⁵
 - indication of protective procedures used to prevent corruption of the presented record(s);³⁶
 - indication of protective procedures used to guarantee the continuing identity and integrity of the presented records against media deterioration and across technological change;³⁷
 - indication of the means by which the presented record(s) was/were authenticated;
 - indication of instances where a copy of a presented record is known not to fully and faithfully reproduce the elements expressing its identity and integrity;
 - indication of any redaction for privacy or copyright reasons;
 - indication of the reason/authorization for the redaction;
 - date of the redaction;
 - name of the person responsible for handling/executing the redaction;
 - date when the requested record(s) and/or information were presented; and
 - name of the person responsible for handling/executing the access request.
- c. *to package kept records and/or information for output (A3.3.3.4.3)*, meaning to combine the digital components of the requested records and/or information with instructions on how to reconstitute and manifest the records or information with the appropriate extrinsic form. Regarding metadata, this activity results in the production of the same two sets of metadata outlined above, with the exception of the indication of a Certificate of Authenticity.

³⁴ As per InterPARES 1 Benchmark Requirement A.1 - Expression of Record Attributes and Linkage to Record (Ibid., 210.).

³⁵ As per InterPARES 1 Benchmark Requirement A.2 - Access Privileges (Ibid., 211.).

³⁶ As per InterPARES 1 Benchmark Requirement A.4 - Protective Procedures: Media and Technology (Ibid.).

³⁷ Ibid.

Managing the Disposition of Kept Records (A3.4)

This final recordkeeping system activity provides overall control and co-ordination of records disposition activities, including monitoring the performance of the disposition system, processing disposition information and, in accordance with disposition activity directives and disposition rules, procedures and strategies, destroying kept records and/or preparing and transferring kept records to the designated preserver. The component activities of managing the disposition of kept records are:

1. *to monitor the performance of the disposition system (A3.4.1)*, which involves assessing the efficacy of the performance of the recordkeeping disposition system by analyzing reports on the operation of disposition activities and feedback/information received via records transfer notifications³⁸ and, in response, issuing (1) activity directives for disposition activities and (2) reports on the performance of the disposition system for use in continued maintenance of the recordkeeping system. A specific type of activity directive related to this activity would be an order to rectify a rejected transfer in response to receipt of a “notification of rejection of transfer” from the designated preserver. Such a directive would instruct disposition activity management staff to remedy problems that resulted in rejection of an attempted records transfers and, as appropriate, reinitiate the transfer;
2. *to identify kept records for disposition (A3.4.2)*, which involves identify records and information about records in the recordkeeping system that are earmarked either for destruction or for transfer to the designated preserver, as determined by the creator’s retention schedule;
3. *to destroy kept records (A3.4.3)*, which involves obliterating the kept records, and information related to the records (e.g., record profiles, index references, etc.), identified for destruction and providing documentation about the records destroyed. Metadata captured for this activity could include:³⁹
 - indication of the records and related information (e.g., records profiles, index references, etc.) destroyed;
 - indication of the reason/authorization for the destruction (e.g., reference to the relevant retention schedule, including the version number of the retention schedule, as applicable);
 - name of the person responsible for handling/executing the destruction; and
 - date/time of the destruction.
4. *to prepare kept records for transfer to the designated preserver (A3.4.4)*, which involves attaching to the kept records identified for transfer integrity and related metadata about actions taken during the course of preparing the records for transfer to the designated preserver in accordance with the terms and conditions of transfer, and compiling information about the records that is needed to meet all information requirements of the

³⁸ These transfer notifications include: *Notifications of Receipt of Transfer*, which are formal instruments sent to the creator by the preserver acknowledging that the preserver has received the transfers and, if needed, requesting that the creator address any problems encountered in registering the transfers; and *Notifications of Rejection of Transfer*, which are formal instruments sent to the creator by the preserver indicating that transfers of records do not satisfy requirements for being accessioned or preserved, because the transfers are unauthorized, do not contain the proper records, contain records that cannot be authenticated or whose preservation is not feasible. For further details about these instruments, see discussion of activity 4.3. Acquiring Selected Records, below.

³⁹ As per InterPARES 1 Benchmark Requirement A.8 - Removal and Transfer of Relevant Documentation (Authenticity Task Force, “Appendix 2,” op. cit., 212.).

designated preserver, as outlined in the terms and conditions of transfer. Integrity metadata captured for this activity could include:⁴⁰

- indication of any technical changes applied to the records in preparation for the transfer (e.g., conversion to a new format), including the results/consequences of the actions (especially with regard to authenticity);
 - indication of the reason/authorization for the actions (e.g., reference to the relevant terms and conditions of transfer);
 - name of the person responsible for handling/executing the transfer preparation actions; and
 - date/time when the actions were carried out.
5. *to transfer kept records to the designated preserver (A3.4.5)*, which involves relocating kept records selected for long-term preservation to a designated records preserver (or, as applicable, the office of the creator responsible for the permanent preservation function), along with the accompanying transfer documentation necessary for permanent preservation. Such documentation includes administrative information about the transfer needed by the preserver to register the transfer, confirm the authorization for the transfer and verify its contents—such as an indication of the entity transferring records, the contents of the transfer, the terms and conditions governing the transfer, etc. It also includes more specific information about the records in the transfer that the preserver will need for the purposes of: (1) establishing the identity and demonstrating the integrity of the records being transferred, (2) identifying their logical format, constituent digital components, documentary form and other preservation-related characteristics, (3) properly ordering the records with respect to their relationships with each other (i.e., their archival bond) and (4) associating the records with their relevant contexts (juridical-procedural, provenancial, procedural, documentary, technical). Integrity metadata captured for this activity could include:⁴¹
- indication of the records transferred;
 - indication of the reason/authorization for the transfer (e.g., reference to the relevant terms and conditions of transfer);
 - creator’s transfer registration number;
 - name of the person responsible for handling/executing the transfer;
 - name of the entity to whom the records were transferred; and
 - date/time of the transfer.

Managing Records in a Permanent Preservation System (A4)

This third main activity involves overseeing and coordinating all the activities associated with preserving records in the permanent preservation system to ensure their continuing authenticity while in the custody of the designated preserver. The key activities of the permanent preservation function are to appraise and select, acquire, preserve and output records selected for long-term preservation, and to monitor the performance of the permanent preservation system. These activities are viewed from the perspective of the entity responsible for long-term preservation of authentic copies of the creator’s digital records; that is, the designated records preserver, who will carry out the preservation activities. By contrast, the activities of record-

⁴⁰ Ibid.

⁴¹ Ibid.

making and recordkeeping, discussed above, were viewed from the perspective of the preserver, but as carried out by the records creator. It is true that records creators may also take responsibility for long-term preservation of digital records. In such a case, the records creator would still have to adopt the perspective (and responsibilities) of the designated records preserver to undertake the following activities.

Monitoring the Performance of the Permanent Preservation System (A4.1)

Similar the performance monitoring function for the recordkeeping system, this activity involves assessing the efficacy of the permanent preservation system as a whole by analyzing reports on the operation of each of the permanent preservation system's records information, selection, acquisition, description, storage, retrieval and access sub-systems (and, as necessary, by examining records) and, in response, issuing (1) activity directives for each of the sub-systems and (2) reports on the performance of the permanent preservation system to the overarching performance monitoring function (Maintain Framework, A1.4) for use in continued refinement and maintenance of the chain of preservation framework.

Appraising Records for Permanent Preservation (A4.2)

Although appraising records is ultimately the responsibility of preservers, in cases where, as recommended in this model, retention scheduling is employed, decisions on the disposition of records will regularly be made by a records creator as part of the design, implementation and management of its recordkeeping system. In some cases, appraisals may be made when it is determined that records in a longstanding system need to reach a disposition. In either case, this activity entails making appraisal decisions by compiling information about kept records and their context, assessing their value, determining the feasibility of their preservation and monitoring the performance of the preservation selection system. It also involves monitoring appraised records and appraisal decisions, in relation to updated information about the creator and the preserver, to identify evolving conditions that might make it necessary for the preserver to adjust or redo an appraisal.

Monitoring the Performance of the Preservation Selection System (A4.2.1)

This activity involves assessing the efficacy of the performance of the preservation selection system by analyzing reports on the operation of preservation selection activities and, in response, issuing (1) directives for selection activities and (2) reports on the performance of the selection system for use in continued maintenance of the permanent preservation system.

Analyzing Kept Records for Preservation (A4.2.2)

This activity involves assessing information concerning the kept records being appraised, including information about their contexts, value and preservation feasibility. In some cases, this activity could be initiated through instructions issued by the appraisal monitoring function (discussed below) to revise or update previous appraisal decisions. In particular, the component activities of analyzing kept records for preservation are:

1. *to analyze information about appraised records (A4.2.2.1)*, which involves collecting, organising, recording and assessing relevant information from the kept records being appraised and about their juridical-administrative, provenancial, procedural, documentary and technological contexts;
2. *to assess the value of appraised records (A4.2.2.2)*, which involves the following activities:

- a. *to assess the continuing value of the appraised records* (A4.2.2.2.1), which means to determine the capacity of the records being appraised to serve the continuing interests of their creator and society;
 - b. *to assess the authenticity of the appraised records* (A4.2.2.2.2), which means to determine the grounds for presuming the records to be authentic. This activity, in turn, entails: (1) compiling evidence to support a presumption of authenticity (A4.2.2.2.2.1), which involves collecting, organizing and recording evidence of the identity and integrity of the records being appraised and about the procedural controls applied to them during their creation and maintenance by the creator, (2) measuring the evidence compiled about the identity, integrity and procedural controls of the records being appraised against the requirements for authentic records⁴² (A4.2.2.2.2.2) and (3) in cases where the examined evidence is too weak to support a presumption of authenticity, using other verification methods⁴³ to determine the authenticity of the records being appraised in cases where there is insufficient evidence to meet the requirements for presuming the authenticity of the records; and
 - c. *to determine the value of the appraised records* (A4.2.2.2.3), which means to establish the value of the appraised records based on the results of the assessments of the records' authenticity and continuing value as well as information about their suitability and relevance in relation to the preserver's mission and its existing holdings;
3. *to determine the feasibility of preserving the appraised records* (A4.2.2.3), which involves the following activities:
 - a. *to determine the record elements to be preserved* (A4.2.2.3.1), which means to identify, among the records being appraised, the necessary documentary components (e.g., record profile, attachments, annotations, etc.) and elements of form (e.g., author, date, subject line, etc.) that must be preserved to protect the authenticity of those records;
 - b. *to identify the digital components to be preserved* (A4.2.2.3.2), which means to identify the digital components that manifest the record elements that need to be preserved to protect the authenticity of the records selected for permanent preservation; and
 - c. *to reconcile the identified preservation requirements with the preserver's preservation capabilities* (A4.2.2.3.3), which means to determine whether the digital components manifesting the record elements that need to be preserved to protect the authenticity of the records selected for permanent preservation can in fact be preserved given the preserver's current and anticipated preservation capabilities.

The final outputs of these three activities include: (1) documentation about the digital components to be preserved—specifically, information about the way in which the record elements to be preserved are manifested in the electronic environment, construed for the

⁴² The model assumes the requirements as listed in the InterPARES 1 Project's "Requirements for Assessing and Maintaining the Authenticity of Electronic Records" (Authenticity Task Force, "Appendix 2," op. cit., 204–219).

⁴³ Alternative "[m]ethods of verification include, but are not limited to, a comparison of the records in question with copies that have been preserved elsewhere or with back-up tapes; comparison of the records in question with entries in a register of incoming and outgoing records; textual analysis of the record's content; forensic analysis of aspects such as medium and script; a study of audit trails; and the testimony of a trusted third party" (Heather MacNeil et al., "Part One – Establishing and Maintaining Trust in Electronic Records: Authenticity Task Force Report," in Duranti, *Long-term Preservation*, op. cit., 50. Online reprint available at http://www.interpares.org/book/interpares_book_d_part1.pdf).

purposes of instructing preservation activities and (2) preservation feasibility reports—that is, documented assessments of whether the record elements and digital components of the records proposed for preservation can be preserved given the preserver’s current and anticipated preservation capabilities.

Making Appraisal Decisions (A4.2.3)

This activity involves determining and documenting the retention and disposition of the selected records based on valuation and feasibility information and agreeing on and documenting—through consultation with the creator—the terms and conditions of transfer of the selected records to the preserver. InterPARES 2 defines *terms and conditions of transfer* as “formal instruments that identify in archival and technological terms digital records to be transferred, together with relevant documentation [for their long-term preservation], and that identifies the medium and format of transfers, when the transfers will occur, and the parties to the transfers.”⁴⁴

Monitoring Appraisal Decisions (A4.2.4)

Because there may be changes in the way records are generated or organized, in the technology the creator uses to create them, or in the preserver’s preservation capabilities, part of appraising digital records involves monitoring records that have already been appraised to identify any necessary changes to appraisal decisions over time. As well, because the creator’s organizational mandates and responsibilities may change over time, as might the way those responsibilities are carried out, such that data accumulated in formerly appraised systems may be put to new uses, it is possible that systems that did not initially contain records may be upgraded to do so, especially in organizations with hybrid paper and electronic recordkeeping systems. Likewise, it is likely that the preserver’s preservation capabilities will change over time, as might its organizational mandates and responsibilities. Therefore, in addition to monitoring changes to the creator’s appraised records, it is also necessary for the preserver to keep track of appraisal decisions in relation to subsequent developments within the creator’s and/or preserver’s operations that might make it necessary to adjust or redo an appraisal, such as substantial changes to: (1) the creator’s organizational mandate and responsibilities, (2) the creator’s record-making or recordkeeping activities or systems, (3) the preserver’s records preservation activities or systems and/or (4) the preserver’s organizational mandate and responsibilities.

Acquiring Selected Records (A4.3)

It is an assumption of the model that custody and control of digital records will move from the creator to the preserver. It is true that records creators often maintain digital records for a long time, and so face many of the problems of long-term preservation, particularly when records have to be removed from active recordkeeping systems. In this model, the activity of the preserver’s acquiring selected records and all the activities of preservation that follow on from that have as their goal the continued accessibility and authenticity of those records that are selected for continuing preservation, that is, for which one does not see an end to their preservation. This movement of records from the creator’s hands to the preserver’s hands is a critical juncture, and involves taking great care to make sure nothing goes awry in the transfer process. Acquiring selected records entails processing records transfers, accessioning accepted transfers and monitoring the performance of the acquisition system.

⁴⁴ InterPARES 2 Project Terminology Database, op. cit.

Monitoring the Performance of the Preservation Acquisition System (A4.3.1)

This activity involves assessing the efficacy of the performance of the preservation acquisition system by analyzing reports on the operation of preservation acquisition activities and, in response, issuing (1) directives for acquisition activities and (2) reports on the performance of the acquisition system for use in continued maintenance of the permanent preservation system.

Processing Records Transfers (A4.3.2)

This model envisages a five-step processing process involving the following activities:

1. *to register the transfer* (A4.3.2.1), which involves recording information about the transfer to register the circumstances of its occurrence. Specifically, this activity involves capturing the following metadata:⁴⁵

- name of the person responsible for effecting the transfer;
- transfer registration number assigned by the transferring agent;
- date and time the transfer was received;
- name of the person registering the transfer;
- transfer registration number assigned by the person registering the transfer;
- indication of the reason/authorization for the transfer (e.g., reference to the relevant terms and conditions of transfer);
- indication of records and other transfer documentation received;
- name of person(s) to whom a notification of receipt of transfer was issued;
- name of the person who issued the notification; and
- date and time the notification was sent.

This information constitutes metadata about the records in the transfer and may be recorded in an electronic register as part of the preservation retrieval system. When a transfer has been registered as having been received, the recipient notifies the transferring agent that the transfer (by number) has been received, and records this act as well. At this stage, it should be noted, as will become obvious, that nothing is done to establish that the transfer is correct in every respect; instead, the process of registration involves simple acknowledgement of the receipt of the transfer, upon which the next step follows closely.

2. *to confirm the authorization for the transfer* (A4.3.2.2), which involves confirming the person transferring the records has the authority to transfer records selected for preservation, and, in cases of unauthorized persons effecting transfers, issuing notifications of rejection of transfer to the persons transferring the records.
 - a. If the transfer is accepted as being authorized, the following information is recorded as metadata in the register of transfers:⁴⁶
 - date/time the transfer was accepted as authorized;
 - name of the person confirming the authorization of transfer;
 - transfer authorization number (as assigned by the preserver); and
 - terms and conditions of transfer number.
 - b. If the transfer is rejected, the following information is recorded in the register:
 - date/time the transfer was rejected as unauthorized;

⁴⁵ As per InterPARES 1 Baseline Requirement B.1 - Controls over Records Transfer, Maintenance, and Reproduction (Authenticity Task Force, "Appendix 2," op. cit., 213).

⁴⁶ Ibid.

- name of the person rejecting the transfer;
- name of person(s) to whom a notification of rejection of transfer was issued;
- name of the person who issued the rejection notification;
- date and time the rejection notification was sent;
- indication of the reason for the rejection;
- transfer authorization rejection number (as assigned by the preserver); and
- terms and conditions of transfer number.

Note that this procedure assumes that the preserver has a list/mechanism to identify persons authorized to effect transfers. In the electronic environment it is all too easy for transfers to come from unauthorized persons who may have a copy of records, so care is needed to ensure that transfers come from authorized sources.

3. *to verify the content of the transfer* (A4.3.2.3), which involves determining whether transfers of records selected for preservation have been successfully transmitted (i.e., were not corrupted during transmission) and include all records and aggregates of records specified in the terms and conditions of the transfer, and, in corrupted or unverified cases, issuing notifications of rejection of transfer to the persons transferring the records.
 - a. If the content of the transfer is accepted as being correct, the following information is recorded as metadata in the register of transfers:⁴⁷
 - date/time the transfer was accepted as verified;
 - indication of the measures used to verify the transfer;
 - name of the person verifying the transfer;
 - transfer content verification number (assigned by the preserver); and
 - terms and conditions of transfer number.
 - b. If the transfer is rejected, the following information is recorded in the register:
 - date/time the transfer was rejected as containing incorrect or corrupted content;
 - name of the person rejecting the transfer;
 - name of the person(s) to whom a notification of rejection of transfer was issued;
 - name of the person who issued the rejection notification;
 - date and time the rejection notification was sent;
 - indication of the measures used to assess the content of the transfer;
 - indication of the reason(s) for the rejection;
 - transfer content rejection number (as assigned by the preserver); and
 - terms and conditions of transfer number.
4. *to confirm the authenticity of the records in the transfer* (A4.3.2.4), which involves determine whether the assessment of the authenticity of the creator's records being transferred, which was conducted as part of the appraisal process, is still valid by verifying that the attributes relating to the records' identity and integrity have been carried forward with them along with any relevant documentation.
 - a. If the authenticity of the records confirmed, the following information is recorded as metadata in the register of transfers:⁴⁸
 - date/time the transfer was accepted as containing authentic records;
 - indication of the measures used to confirm authenticity;

⁴⁷ Ibid.

⁴⁸ Ibid.

- name of the person confirming the authenticity;
 - authenticity assessment report number (assigned by the preserver);
 - transfer authenticity verification number (assigned by the preserver); and
 - terms and conditions of transfer number.
- b. If the authenticity of the records is not confirmed, the following information is recorded as metadata in the register of transfers:
- date/time the transfer was rejected as containing records that could not be authenticated;
 - name of the person rejecting the transfer;
 - name of the person(s) to whom a notification of rejection of transfer was issued;
 - name of the person who issued the rejection notification;
 - date and time the rejection notification was sent;
 - indication of the measures used to assess the authenticity of the records in the transfer;
 - indication of the reason(s) for the rejection;
 - transfer authenticity rejection number (as assigned by the preserver);
 - authenticity assessment report number (assigned by the preserver); and
 - terms and conditions of transfer number.
5. *to confirm the feasibility of preserving the transfer* (A4.3.2.5), which involves verifying that the determination of the feasibility of preservation made during the process of appraisal is still valid and, in unconfirmed cases, results in issuance of notifications of rejection of transfer to the persons transferring the records. At this stage, before accessioning the records and formally accepting the records under the custody and control of the preserver, it must be confirmed that the preserver's current and expected future capabilities are sufficient to preserve the records over the long term. In particular, there may have been changes in the technology or assumptions made at the time of appraisal that no longer stand and invalidate the original feasibility assessment. This process also generates metadata in the register of transfers.
- a. If it proves feasible to preserve the records, the following information is recorded as metadata in the register of transfers:⁴⁹
- date/time the feasibility of preservation was confirmed;
 - name of the person confirming the feasibility;
 - feasibility report number (assigned by the preserver);
 - feasibility verification number (assigned by the preserver); and
 - terms and conditions of transfer number.
- b. If it proves not feasible to preserve the records, the following information is recorded as metadata in the register:
- date/time the transfer was rejected as containing records that cannot be preserved;
 - name of the person rejecting the transfer;
 - name of the person(s) to whom a notification of rejection of transfer was issued;
 - name of the person who issued the rejection notification;
 - date and time the rejection notification was sent;
 - indication of the measures used to confirm the feasibility of preservation;

⁴⁹ Ibid.

- indication of the reason(s) for the rejection;
- feasibility report number (assigned by the preserver);
- feasibility rejection number (assigned by the preserver); and
- terms and conditions of transfer number.

Accessioning Records (A4.3.3)

This activity, which only occurs after a transfer is registered, verified as coming from an authorized source and has had its content, authenticity and feasibility of preservation confirmed, involves formally documenting the acceptance of the transferred records into the custody of the preserver. The process of accessioning generates the following information to be recorded as metadata in the register of accessions:⁵⁰

a. Identity metadata:

- the records accessioned, including:
 - name of the juridical or physical person that created the records;
 - name of the juridical or physical person that transferred, donated or sold the records; and
 - quantity and characteristics of the records;
- transfer registration number;
- accession registration number;
- accrual registration number (as appropriate);
- date the records are accessioned;
- indication of the digital rights that apply to the records accessioned, including:
 - name of the person(s) holding the rights;
 - terms and condition of the rights, including jurisdiction, duration, pertaining to which records, etc.; and
 - rights document number (e.g., deed of gift, contract, etc.);
- name of the person responsible for effecting the accession; and
- location of the accession.

b. Integrity metadata:

- original state of the records in the transfer when received;
- indication of the security and control procedures used for the transfer;
- indication of any modifications made to the records since their receipt
- indication of the post-modification state of the records (especially in relation to the impact of the modifications on the records' form, format, authenticity, etc.) (as appropriate);
- reason/authorization for the modifications (as appropriate);
- date of the modifications (as appropriate); and
- name of the person responsible for the modifications (as appropriate).

Preserving Accessioned Records (A4.4)

This function breaks down into three activities: (1) managing information about records acquired for permanent preservation, (2) managing the description of the records and (3) managing the storage of their digital components and related information.

⁵⁰ Ibid.

Managing Information About Preserved Records (A4.4.1)

This activity is an important, complicated and vital facet of the process of preserving digital records. It involves compiling and updating information for all activities related to the preservation, description, storage, discovery, retrieval and output of records acquired for permanent preservation. Essentially, it is an exercise in management of information about preserved records and it is obvious that to achieve the ends of this facet of the process will require a robust information system to allow for the control, identification, retrieval, use and updating of the records as actions are taken upon them.

As with the recordkeeping information system, in terms of the underlying concern for maintaining the authenticity of the records in the custody of the preserver, the aim of this activity is to make sure that the nature of any actions undertaken upon the records is documented, whether through additions of integrity metadata or by compilations of reports, to provide a kind of audit trail on what has happened to the records since their creation. Such information is necessary when assessing the ongoing trustworthiness (reliability and authenticity) of the records in the system. In fact, careful, consistent and complete documentation of preservation activities is one of the fundamental requirements for ensuring the production of authentic copies of authentic records outlined in InterPARES 1 Baseline Requirement B.2 (Documentation of Reproduction Process and its Effects), which are, in turn, used to support Baseline Requirement B.3 (Archival Description). The critical nature of this documentation and the role that it plays in helping ensure the continued authenticity of the copies of the creator's records in the custody of the preserver is best expressed in the extended commentary to these two baseline requirements, which are reproduced below:

B.2 Documentation of Reproduction Process and its Effects

Documenting the reproduction process and its effects is an essential means of demonstrating that the reproduction process is transparent (i.e., free from pretence or deceit). Such transparency is necessary to the effective fulfilment of the preserver's role as a trusted custodian of the records. Documenting the reproduction process and its effects is also important for the users of records since the history of reproduction is an essential part of the history of the record itself. Documentation of the process and its effects provides users of the records with a critical tool for assessing and interpreting the record.⁵¹

B.3 Archival Description

Traditionally it has been a function of archival description to authenticate the records and perpetuate their administrative and documentary relationships. With electronic records, this function becomes critical. Once the records no longer exist except as authentic copies, the archival description is the primary source of information about the history of the record, that is, its various reproductions and the changes to the record that have resulted from them. While it is true that the documentation of each reproduction of the record copies²⁸ may be preserved, the archival description summarizes the history of all the reproductions, thereby obviating the need to preserve all the documentation for each and every reproduction. In this respect, the description constitutes a collective attestation of the authenticity of the records and their relationships in the context of the fonds to which the records belong. This is different from a certificate of authenticity, which attests to the authenticity of individual records. The importance of this

⁵¹ Authenticity Task Force, "Appendix 2," op. cit. 218.

collective attestation is that it authenticates and perpetuates the relationships between and among records within the same fonds.⁵²

With this in mind, the focus can now turn to the component activities of managing the information about preserved records, which are:

1. *to monitor the performance of the preservation information system* (A4.4.1.1), which involves assessing the efficacy of the performance of the permanent preservation information system by analyzing reports on the operation of information management activities and, in response, issuing (1) activity directives for information activities and (2) reports on the performance of the information system for use in continued maintenance of the permanent preservation system;
2. *to compile information for preservation activities* (A4.4.1.2), which involves collecting, organizing and recording relevant appraisal, acquisition, accession and preservation information about acquired records to facilitate their preservation, arrangement, description, storage, discovery, retrieval and output. Effective work in this area will rationalize storage and retrieval of metadata and the information in documentation created during the processes of records creation and recordkeeping and while appraising, acquiring and accessioning records. Together all this information constitutes an important source for the processes of arranging, describing, storing, locating, retrieving and outputting records. The key outputs of this activity include:
 - a. *preservation information system performance information*—that is, continuously logged and updated documentation concerning the ability of the permanent preservation information sub-system to fulfil its purpose and achieve its performance objectives;
 - b. *information about preserved records in storage*—that is, documentation compiled about preserved records in the permanent preservation storage system for the purpose of processing retrieval request for records and/or information about records;
 - c. *information about digital components of preserved records in storage*—that is, technical documentation concerning digital components of records in the preservation storage system that is needed to facilitate discovery of, and/or process access requests for, the records and/or information about the records;
 - d. *information about the preserver's existing holdings*—that is, documentation compiled about the records and aggregations of records already in the preserver's custody for the purposes of helping make valuation determinations during appraisals and helping facilitate accessioning of accruals during acquisition;
 - e. *information for arrangement*—that is, documentation compiled about acquired and accessioned records and their preservation for the purpose of arranging the preserved records of a given creator;
 - f. *information for description*—that is, documentation compiled about acquired and accessioned records and their preservation for the purpose of describing preserved records and creating descriptive instruments. Among other things, as stipulated in InterPARES Baseline Requirement B.2, such documentation should include explicit information about:
 - the date of the records' reproduction and the name of the responsible person;

⁵² Ibid., 218–219. Footnote 28 in the original text reads: Although, technically, every reproduction of a record that follows its acquisition by the preserver is an authentic copy, it is the only record that exists and, therefore, should normally be referred to as “the record” rather than as “the copy.”

- the relationship between the records acquired from the creator and the copies produced by the preserver;
 - the impact of the reproduction process on their form, content, accessibility and use; and
 - an indication of those cases where a copy of a record is known not to fully and faithfully reproduce the elements expressing its identity and integrity;⁵³ and
- g. *information for storage of preserved records*—that is, documentation compiled about preserved records and their elements and digital components for the purpose of facilitating their storage and long-term preservation.
3. *to update information on preservation activities (A4.4.1.2)*, which involves recording information about actions taken to update digital components of records acquired for permanent preservation or their storage. Updating digital components and storage of digital records takes place over time and recording information about these actions is an important responsibility of preservers to be able to supply it to users wishing to have evidence to support the presumption of authenticity of the records. As envisioned in the model, this activity serves to compile metadata generated during storage maintenance activities (back-up, correction, update and refreshment activities) and update the preservation information system. This updated maintenance information will, in turn, be used to periodically update the maintenance information provided in the records descriptions. Metadata associated with records aggregations or individual records are recorded, as appropriate, including:
- maintenance activity identification number(s) (i.e., backup, correction, update or refreshment identification number(s), as a mechanism for location of the record(s) and for linking to the relevant maintenance activity report(s)/metadata); and
 - accession number(s).

Managing the Arrangement of Preserved Records (A4.4.2)

This activity provides overall control and co-ordination of arranging the records of a creator that have been identified as to their provenance and relationships according to the concepts and principles of archival arrangement.

Managing the Description of Preserved Records (A4.4.3)

This activity provides overall control and co-ordination of records description activities, including monitoring the preservation description system, describing preserved records and developing description instruments. Specifically, the component activities of managing the description of preserved records are:

1. *to monitor the performance of the preservation description system (A4.4.3.1)*, which involves assessing the efficacy of the performance of the permanent preservation description system by analyzing reports on the operation of description management activities and, in response, issuing (1) activity directives for description activities and (2) reports on the performance of the description system for use in continued maintenance of the permanent preservation system;
2. *to describe the preserved records (A4.4.3.2)*, which involves recording information about the nature and make-up of individual records and/or records aggregates acquired for permanent preservation and about their juridical-administrative, provenancial, procedural,

⁵³ Ibid., 213.

documentary and technological contexts, as well as information about any changes they have undergone since they were first created. As noted earlier, archival description is one of the key means for authenticating the records in the custody of the preserver and for perpetuating the administrative and documentary relationships of the records, so it is important that special care and attention is exercised in compiling, recording and capturing all the identity and integrity metadata needed to meet the requirements supporting the production of authentic copies of the creator's records.⁵⁴ Such metadata could include:

- a. Identity metadata (may be inherited from higher description levels, as appropriate)
 - transfer registration number (Note that the record(s) being described inherit the identity/integrity metadata recorded in the transfer registration register.)
 - accession number (Note that the record(s) being described inherit the identity/integrity metadata recorded in the accessions register.)
 - accrual number (as appropriate) (Note that the record(s) being described inherit the identity/integrity metadata recorded in the accruals register.)
 - parent unit number (as appropriate) (Note that the record(s) being described inherit the identity/integrity metadata recorded for the parent unit.)
- b. Integrity metadata (if not evident in the metadata inherited from the transfer, accessions and/or accruals registers or from the parent unit)
 - indication of the original state of the record(s) when received (Note that state in this context is characterized in relation to the information for preservation carried forward from the appraisal process.);
 - indication of the security and control procedures used for records transfer, maintenance and reproduction activities;
 - indication of the current state of the records (Note that state in this context is characterized in relation to the updated information for preservation issuing from the processes of correcting, updating and/or refreshing digital components or storage.);
 - maintenance activity identification number(s) (as appropriate)—provides a link to information about any maintenance actions applied to the record(s) (e.g., correcting, updating, refreshing), and the impact of these actions on the form, format, authenticity, etc., of the record(s);
 - indication of any access restriction(s) related to copyright, privacy, etc.;
 - indication of the digital rights that apply to the record(s) being described, including:
 - name of the person(s) holding the rights;
 - terms and condition of the rights, including jurisdiction, duration, pertaining to which records, etc.; and
 - rights document number (e.g., deed of gift, contract, etc.);
 - location of the record(s) in storage;
 - date of the description;
 - name of the person responsible for the description; and
 - indication of the description rules used.

⁵⁴ The model assumes the baseline requirements as listed in the InterPARES 1 Project's "Requirements for Assessing and Maintaining the Authenticity of Electronic Records" (Authenticity Task Force, "Appendix 2," op. cit., especially 212–219).

3. *to develop description instruments* (A4.4.3.3), which involves preparing tools that provide intellectual and physical control over the records in the preservation system, such as guides, inventories, indexes and repository locators.

Managing the Storage of Preserved Records (A4.4.4)

This activity provides overall control and co-ordination of the permanent preservation storage system and the records stored in the system by placing the records in storage, maintaining their digital components and monitoring the performance of the storage system. Specifically, the component activities of managing the storage of preserved records are:

1. *to monitor the performance of the preservation storage system* (A4.4.4.1), which involves assessing the efficacy of the performance of the permanent preservation storage system by analyzing reports on the operation of storage activities and, in response, issuing (1) activity directives for storage activities and (2) reports on the performance of the storage system for use in continued maintenance of the permanent preservation system;
2. *to place preserved records in storage* (A4.4.4.2), which involves placing the digital components of preserved records and their metadata into storage in accordance with the procedures for maintaining authentic copies of records and the actions prescribed by the preservation storage system strategies, rules and procedures and activity directives. Integrity metadata captured for this activity could include:
 - indication of the original state (e.g., file format) of the record(s) prior to storage;
 - indication of any modification(s) made to the record(s) in preparation for storage;
 - indication of the state of the record(s) after the modification(s) (e.g., impact on form, format, authenticity, etc.);
 - indication of the reason/authorization for the modification(s) (e.g., through reference to the relevant section of the preservation storage system strategy);
 - date/time of any modification(s);
 - name of the person responsible for the modification(s);
 - name of person responsible for placing the record(s) in storage;
 - date/time the record(s) was/were placed in storage; and
 - location of the record(s) in storage.
3. *to maintain the records in the permanent preservation storage system* (A4.4.4.3), which involves monitoring the storage of preserved records and their digital components, periodically backing-up the permanent preservation storage system and, as necessary, correcting problems with and updating the digital components, and/or refreshing the storage media to ensure that the records in the system remain accessible, legible and intelligible over time. In particular, the component activities of maintaining the storage of preserved records are:
 - a. *to monitor the preserved records in storage* (A4.4.3.1), which involves keeping track of the condition and maintenance requirements of preserved records—more specifically, their digital components and metadata—and the media on which they are stored in the permanent preservation storage system to identify storage that needs backing-up, digital components and metadata that need correcting or updating and media that need refreshing. Another key task of this activity is to issue reports on maintenance activities to the preservation information system;
 - a. *to back-up the permanent preservation system* (A4.4.3.2), which involves routinely creating copies of the digital content in the preservation storage system for the

purpose of recovery in the event of a disaster resulting in system failure or corruption, and recording information about the back-up activities. It is important to distinguish here between comprehensive *system backups* and localized *content backups*. System backups contain a copy of *all* the digital objects in the system, including the operating system, the software applications and all digital objects (i.e., digital components of the records and their metadata) in the system. A system backup provides the maximum level of recovery potential in the event of a disaster or system corruption. Content backups contain a copy of selected aggregations of the digital objects in the system and, therefore, only offer limited recovery potential, especially in cases where system applications become corrupted. Integrity metadata about these back-up activities, captured in activity reports could include:⁵⁵

- indication of the reason/authorization for the backup (e.g., through reference to the relevant section of the preservation storage system strategy);
 - indication of the type of backup (e.g., incremental, differential, full) ;
 - indication of the extent or content of the backup (e.g., full system, selected groups of records, etc.);
 - name of the person creating the backup;
 - date/time of the backup;
 - indication of the software application (including version number) used to create the backup;
 - location of the backup; and
 - backup identification number.
- b. *to correct problems with the preserved records in storage* (A4.4.3.2), which involves taking the actions prescribed by the preservation storage system strategies, rules and procedures and activity directives, in accordance with the procedures for maintaining authentic copies of records, to identify and eliminate problems in storage to ensure that the records remain accessible, legible and intelligible over time; and recording information about the correction activities and the corrected digital components. Integrity metadata about this activity, captured either as metadata attached to the records or in activity reports, could include:⁵⁶
- indication of the original state (e.g., file format) of the record(s) prior to correction;
 - indication of the correction processe(s) used;
 - indication of the state of the record(s) after correction (e.g., impact on form, format, authenticity, etc.);
 - indication of the reason/authorization for the correction (e.g., through reference to the relevant section of the preservation storage system strategy);
 - name of the person responsible for the correction;
 - date/time of the correction; and
 - correction identification number, as a mechanism for location of the record(s) and linked to an accession number(s).

⁵⁵ As per InterPARES 1 Baseline Requirement B.1 - Controls over Records Transfer, Maintenance, and Reproduction (Authenticity Task Force, "Appendix 2," op. cit., 213).

⁵⁶ Ibid.

- b. *to update the preserved records in storage (A4.4.3.4)*, which involves carrying out conversion actions (such as by migration, standardization or transformation to persistent form) on the digital components of the preserved records in storage in accordance with the procedures for maintaining authentic copies of records and the actions prescribed by the preservation storage system strategies, rules and procedures and activity directives, to ensure that the records remain accessible, legible and intelligible over time; and recording information about the updating activities and the updated digital components. Typical conversion activities might include migration, standardization or transformation to persistent form. Integrity metadata related to this activity would be similar to those noted above for correction activities;⁵⁷ and
- c. *to refresh the storage media for the preserved records in storage (A4.4.3.5)*, which involves copying or transferring the digital components of preserved records in storage from one medium to another—or otherwise ensuring that the storage medium remains sound—in accordance with the procedures for maintaining authentic copies of records and the actions prescribed by the preservation storage system strategies, rules and procedures and activity directives; and recording information about the refreshment activities and about any impact to the digital components on the refreshed media. Again, integrity metadata related to this activity would be similar to those noted above for correction activities.⁵⁸

Outputting Records (A4.5)

This final preservation system activity involves facilitating the discovery of preserved records and/or information about records in the permanent preservation system, managing access and retrieval requests for the records and/or information—including presenting the records and/or information to users or packaging the records/information for issuing to users—and monitoring the performance of the permanent preservation retrieval and access systems.

Monitoring the Performance of the Permanent Preservation Access System (A4.5.1)

This activity involves assessing the efficacy of the performance of the preservation access system by analyzing reports on the operation of preservation access activities and, in response, issuing (1) directives for access activities and (2) reports on the performance of the access system for use in continued maintenance of the permanent preservation system.

Facilitating the Discovery of Preserved Records and/or Information (A4.5.2)

This activity provides authorized internal and external users with mediated access to and, as necessary, assistance in the use of, record descriptions, description instruments and any other tools and resources provided by the preserver to support querying and searching for information, records and/or records aggregates in the permanent preservation system.

Managing Requests for Preserved Records and/or Information (A4.5.3)

This activity provides overall control and co-ordination of internal and external requests for access to preserved records and/or information about the records by processing access requests, retrieving digital components for requested records and/or information, verifying retrieved components and information and providing access to retrieved records and/or information.

⁵⁷ Ibid.

⁵⁸ Ibid.

Specifically, the component activities of managing requests for preserved records and/or information are:

1. *to process requests for preserved records and/or information* (A4.5.3.1), which involves the following four activities:
 - a. *to register preservation access requests* (A4.5.3.1.1), meaning to record information about the request to register the circumstances of its occurrence and to issue notifications of receipt to the persons requesting the records. In cases where requests include insufficient information for registration purposes (e.g., incomplete information about the records or information being requested), the notification of receipt would include a request to the user to update the request. Specifically, this activity involves capturing some or all of the following metadata in an access register or similar instrument:
 - name of the person requesting the records/information;
 - name of the person for whom the request is being made (if different than the requestor);
 - access privileges of the requestor (as appropriate);
 - indication of the records and/or information requested;
 - date and time the request was received/registered;
 - name of the person registering the request;
 - access request registration number (as assigned by the preserver);
 - name of the person to whom a notification of receipt of request was issued;
 - indication of additional information required to register request (if necessary)
 - name of the person who issued the receipt notification; and
 - date and time the receipt notification was sent.
 - b. *to retrieve information to process preservation access requests* (A4.5.3.1.2), meaning to gather the information, from record descriptions and other descriptive instruments and from information about the preserved records in storage and their digital components, that is needed to process access requests and translate them into retrieval requests that can be processed by the preservation information and storage systems;
 - c. *to generate preservation retrieval requests* (A4.5.3.1.3), meaning to translate the access requests into requests that can be processed by the permanent preservation storage and information systems for the purpose of retrieving the exact digital components and/or information required to fulfil the access requests;
 - d. *to generate preservation request specifications* (A4.5.3.1.4), meaning to issue instructions to the preservation retrieval and access systems on how to fulfil retrieval and access requests based on analyses of the requests and the request processing information in relation to the preservation retrieval and access systems' strategies, rules and procedures (including procedures for maintaining authentic copies of records) and access privileges.
2. *to retrieve the requested records and/or information* (A4.5.3.2), which involves outputting copies of the digital components of the requested records, information about the digital components and rendering and/or content information about the records retrieved from storage in the permanent preservation system in response to retrieval requests for the components and/or information and in accordance with any request specifications;

3. *to verify the retrieved records and/or information (A4.5.3.3)*, which involves examining the digital components and/or information retrieved to determine whether all the components and information that were requested have been received and can be processed for output in accordance with the current preservation access strategies applicable to those records. In cases where digital components are encountered that need updating or correcting, they are redirected, along with information about the problems encountered, to the maintenance function of the permanent preservation storage system for further action. Moreover, for retrievals containing digital components that cannot be processed or that are incorrect or incomplete, an order to rectify the retrieval may be issued.
 - a. If the completeness, accuracy and ability to process the retrieved components and information is verified, the following information is recorded as metadata in a retrieval register or similar instrument:
 - date/time the retrieval was accepted as verified;
 - indication of the measures used to verify the retrieval;
 - name of the person verifying the retrieval;
 - retrieval verification registration number; and
 - retrieval request registration number.
 - b. If the retrieval cannot be verified, the following information is recorded as metadata in the retrieval register:
 - date/time the retrieval was rejected;
 - name of the person rejecting the retrieval;
 - name of the person to whom an order to rectify the retrieval was issued;
 - name of the person who issued the order;
 - date and time the order was sent;
 - indication of the measures used to assess the retrieval;
 - indication of the reason(s) for the rejection;
 - retrieval rejection registration number; and
 - retrieval request registration number.
4. *to provide access to retrieved preserved records and/or information (A4.5.3.4)*, which involves providing users with access to copies of preserved records and/or information about the records. For certain requests, such as those under copyright and privacy laws, it may be necessary to document and keep information about the records and/or information issued in response to requests, to whom the records and/or information were issued and when. In cases where redacted records are issued, a copy of the redacted record should be created and its existence properly documented with the appropriate metadata. Unsuccessful attempts to provide access to the records and/or information trigger the creation of a “notification of rejection of preservation access request” that is issued to the requestor, a record copy of which is also retained by the preserver. The component activities of providing access to retrieved preserved records and/or information are:
 - a. *to reconstitute the preserved records and/or information (A4.5.3.4.1)*, meaning to link or assemble all the verified digital components of the requested records and/or information for the purpose of reproducing and manifesting (presenting) to the user copies of the records and/or information in authentic form and, if necessary, to redact information to meet privacy and/or copyright requirements. Integrity metadata captured for this activity could include:

- indication of any problems encountered in reconstituting the records and/or information in authentic form;
 - indication of required maintenance action(s);
 - indication of any redaction for privacy or copyright reasons;
 - indication of the reason/authorization for the redaction;
 - date of the redaction;
 - name of the person responsible for handling/executing the redaction; and
 - registration number of the record copy of the redacted record issued to the user;
- b. *to manifest preserved records and/or information (A4.5.3.4.2)*, meaning to present to the user copies of the reconstituted requested records and/or information about the records with the appropriate extrinsic form and, in the case of records aggregates, with information about their relationships to one another (archival bond). This activity also involves providing users with a Certificate of Authenticity, if requested. Regarding metadata, this activity results in the production of two sets: one set of integrity metadata for the preserver to document the activity and one set of identity and integrity metadata for the user. Metadata captured for this activity could include:

Designated Preserver (integrity metadata)

For requests that are fulfilled (in part or in whole)

- indication of the record(s) and/or information presented;
- indication of any redaction for privacy or copyright reasons (as appropriate);
- indication of a Certificate of Authenticity, if issued;
- indication of the means by which the records were authenticated
- name of the person to whom the record(s) and/or information were presented;
- date when the record(s) and/or information were presented;
- name of the person responsible for handling/effecting the access request;
- indication of the state or condition of the record(s) and/or information at time the request was fulfilled (including, especially, an indication of instances where a copy of a presented record is known not to fully and faithfully reproduce the elements expressing its identity and integrity);⁵⁹ and
- indication of any problems encountered in manifesting the records and/or information in authentic form.

For requests that cannot be fulfilled (in part or in whole)

- indication of why the request cannot be fulfilled;
- name of the person responsible for determining that the request cannot be fulfilled;
- indication that a notification of rejection was sent;
- name of the person to whom the rejection notification was sent;
- name of the person responsible for issuing the rejection notification; and
- date/time the rejection notification was sent.

Records User

Identity metadata

- name(s) of the person(s) concurring in formation of the record(s);
- name(s) of action or matter;

⁵⁹ As per InterPARES 1 Baseline Requirement B.2.d (Authenticity Task Force, “Appendix 2,” op. cit., 213.).

- date(s) of creation and transmission of the record(s);
- expression of archival bond; and
- indication of any attachments.

Integrity metadata (as necessary)

- indication of access privileges used to control preservation of the presented record(s);⁶⁰
 - indication of protective procedures used to prevent corruption of the presented record(s);⁶¹
 - indication of protective procedures used to guarantee the continuing identity and integrity of the presented records against media deterioration and across technological change;⁶²
 - indication of the means by which the presented record(s) was/were authenticated;
 - indication of instances where a copy of a presented record is known not to fully and faithfully reproduce the elements expressing its identity and integrity;
 - indication of any redaction for privacy or copyright reasons;
 - indication of the reason/authorization for the redaction;
 - date of the redaction;
 - name of the person responsible for handling/executing the redaction;
 - date when the requested record(s) and/or information were presented; and
 - name of the person responsible for handling/executing the access request.
- c. *to package preserved records and/or information for output (A4.5.3.4.3)*, meaning to combine the digital components of the requested records and/or information with instructions on how to reconstitute and manifest the records or information with the appropriate extrinsic form. Regarding metadata, this activity results in the production of the same two sets of metadata outlined above, with the exception of the indication of a Certificate of Authenticity.

⁶⁰ As per InterPARES 1 Baseline Requirement B.1.b (Ibid.).

⁶¹ As per InterPARES 1 Baseline Requirements B.1 - Controls over Records Transfer, Maintenance, and Reproduction and B.2 - Documentation of Reproduction Process and its Effects (Ibid.).

⁶² Ibid.

Business-driven Recordkeeping Model⁶³

Introduction

This part of the Modeling Cross-domain report:

- explains the principles and concepts that underpin the BDR model;
- explains the model itself;
- positions the model in relation to the business activities of creating organizations;
- positions the model in relation to current archival thinking; and
- suggests possible approaches to implementation of the model.

Relation to other research

This modeling effort was influenced and informed by related work undertaken by the Modeling Cross-domain as well as by work undertaken by other InterPARES 2 research groups. This work includes the development of the Chain of Preservation (COP) model, the case studies conducted in the focus groups and the work undertaken by the Description Cross-domain. The model also incorporates key components of the model of the preservation function that was produced under InterPARES 1.⁶⁴

Beyond InterPARES, the model benefited from the results of work conducted through other initiatives such as the digital preservation cluster of the Delos Project,⁶⁵ the Clever Metadata Project and Records Continuum research at Monash University,⁶⁶ the work on records management standards in ISO TC46/SC11 (standards: ISO 15489:2001, and ISO 23081-1:2006),⁶⁷ and the DIRKS methodology developed by the National Archives of Australia.⁶⁸ The Open Archive Information System reference model (OAIS, ISO 14721:2003),⁶⁹ which served as the basis for the preservation function model for InterPARES 1, was also used as the basis for the model.

The model is designed to be technology independent. The preservation of digital information is heavily dependent on technology that can change rapidly through time. New approaches to managing records, including the application of grid technology, the use of registries, the emergence of service oriented architectures, the development of enhanced approaches to exploiting Web-based technologies and the maturation and adoption of related standards in business and technical domains, are among a very few of the many trends that are having a significant impact on the way digital information is being managed and preserved. Every effort

⁶³ The BDR model and this report were produced with the assistance of Babak Hamidzadeh (Library of Congress), John McDonald (private consultant), Kenneth Hawkins (U.S. National Archives and Records Administration) and William T. Underwood (Georgia Tech Research Institute).

⁶⁴ See Kenneth Thibodeau et al., "Part Three – Trusting to Time: Preserving Authentic Records in the Long Term: Preservation Task Force Report," in Duranti, *Long-term Preservation*, op. cit., 99–116. Online reprint available at http://www.interpares.org/book/interpares_book_f_part3.pdf.

⁶⁵ See http://www.delos.info/index.php?option=com_content&task=view&id=25&Itemid=51.

⁶⁶ See <http://www.sims.monash.edu.au/research/rcrg/research/crm>.

⁶⁷ See International Organization for Standardization, ISO 15489-1:2001 - Information and documentation—Records management—Part 1: General; and ISO 23081-1:2006 - Information and documentation—Records management processes—Metadata for records—Part 1: Principles, 2.

⁶⁸ See http://www.records.nsw.gov.au/recordkeeping/dirks-manual_4226.asp.

⁶⁹ See International Organization for Standardization, ISO 14721: 2003 - Space data and information transfer systems—Open archival information system—Reference model.

was made to position the model at a high enough level to be independent of these influences and yet at a level where it is possible to develop implementation strategies that are meaningful and practical.

Scope and objectives

As discussed in the first section of this report, the COP model adopts the perspective of the archivist concerned about preserving the accessibility of records generated by the creating organization. The reference point for the model is the archivist looking into the “business” of a creating organization and identifying the records that are deemed necessary to preserve for internal business needs, or are likely to contribute to wider historical or societal objectives and interests.

In contrast, the perspective of the Business-driven Recordkeeping (BDR) model is on the organization addressing its own “business” within broader juridical, economic and cultural contexts, and the records generated by that business. The viewpoint includes both those records needed for current business and those that need to be retained and preserved for the longer term historical interests of society. The overall intent of the model is to illustrate the nexus between the needs and activities of the business of a given organization and the records generated by those needs and activities and kept by the organization.

More than addressing the business and records nexus of a given organization, however, the model also seeks to establish a generic framework that can be used by any organization for managing records as long as required, independent of the specific business context of a given organization, the organizational structure and the scale or size of the organization (e.g., an incorporated individual, a multi-national private sector organization, a government, etc.). Finally, and in keeping with the ‘continuum’ concepts developed in Australia, the model also accounts for the position of the organization (and its business) within the larger context of “society.”

Given its perspective (i.e., the business of a given organization or organizations), this model will be of greatest interest not only to records managers but also, and most importantly, to program managers; that, is those managing the “business” of the organization, including those accountable for the fiscal and legal standing of the organization. By illustrating how the management of records is an integral component of the management of any business, the BDR model seeks to break down the barriers that often surround recordkeeping and other business processes. These barriers can be conceptual—such as the perspective that records management is something distinct and separate from the business of the organization—and social, between program managers and record managers and ultimately the archivists who are poised to secure those records requiring long-term preservation to meet societal and related historical requirements.

The specific objectives of the model are as follows:

1. To offer an integrated view of the business of an organization and recordkeeping.
2. To support parallel contexts and multiple views and perspectives (i.e. not only those within the business but also those who may be stakeholders, clients, partners, etc., as well as others, such as archivists, who may have interests in the records generated by the business).
3. To provide a framework for:
 - identifying the legal, juridical, ethical, business, organizational and archival requirements of specific business lines and their juridical contexts;

- illustrating the relationships (nexus/connection) and dependencies between business activities, the meta-process of capturing records (evidence) of these activities and the processes for managing the records themselves;
- integrating recordkeeping requirements in business activities such that the records required to provide evidence of the business activities can be captured and preserved in an appropriate manner; and
- managing (authentic and reliable) records throughout their existence and within different contexts of use and interpretation.

Given the focus of InterPARES 2 on artistic and scientific endeavours as well as the activities of government organizations, the model has been designed to be applicable to any organization regardless of sector.

Research issues and methodology

Research approach

The objective of the Modeling Cross-domain was initially to integrate the models developed in the UBC Project and the InterPARES 1 Project in one overarching and integrated model that would illustrate how records could be managed to ensure their authenticity and reliability through time. It soon became clear, however, that it would be difficult for such a model to account for the two very distinct perspectives that would need to be respected—that of the archivist and that of the creator (i.e., the “business perspective”).

The perspective of the archivist is based on the traditional concept that positions the archivist as a trusted third party with responsibility for long-term preservation of the trustworthiness (the reliability, authenticity and accuracy) of records and having the dictates of that preservation in mind. The other two parties are the records creator and users of the records external to the records creator, both of whom have an interest in maintaining the integrity of records. These interests, it is supposed in COP model, are asserted through the controls or constraints on the model.

The perspective of the “business” and the focus of this narrative are based on viewing records creation, use and preservation through the lens of the creating organization. According to this perspective records are generated by business processes and activities in support of the goals and priorities of a given organization. However, the interests of the organization in managing authentic and reliable records in support of these goals and priorities are augmented by the interests of other stakeholders such as partners, clients, auditors and society in general.⁷⁰ According to this perspective, and as a basic assumption of the model described by this narrative, the context(s) of records will always be at the forefront of concern. That is, records will be shaped not only by the organization that has need of them to support various business goals, but also by the various stakeholders who have their own goals. Partners, clients, auditors and society in general all have a role to play in the shape, nature and characteristics of the records generated in a given business process or activity. The interests of society in the records will be explicitly

⁷⁰ The concepts that form the basis for the model and this narrative were derived from the work undertaken in Australia on the “records continuum.” An explanation of the records continuum can be found in: Frank Upward (1996), “Structuring the Records Continuum, Part One: Post Custodial Principles and Properties,” *Archives and Manuscripts* 24(2): 268–285. Online reprint available at <http://www.sims.monash.edu.au/research/rcrg/publications/recordscontinuum/fupp1.html>; and Frank Upward (1997), “Structuring the Records Continuum, Part Two: Structuration Theory and Recordkeeping,” *Archives and Manuscripts* 25(1): 10–35. Online reprint available at <http://www.sims.monash.edu.au/research/rcrg/publications/recordscontinuum/fupp2.html>. A brief summary of continuum concepts is provided in Appendix 16.

recognized and taken into account when making and keeping records within the organization. In this model the archivist is actually an active player. The ability to be the archivist standing apart from the records creation, use and preservation processes is severely challenged in this model where it is expected that, in the ideal scenario, the interests of the archivist (i.e., on behalf of society or some other interest group) are accounted for and addressed within the same context as the interests of all other stakeholders.

Based on this perspective the actions that records managers and archivists (indeed anyone who is a stakeholder) perform on records must be documented and captured as evidence if the full “story” about the records is to be told. In this way, any future user will be able to know not only about the original transactions the records are accounting for, but also how the records themselves were managed through time. This is why the model addresses two levels of processes. The first level is the actual business process and the second level is the (meta-) processes involved in managing the evidence about the business process as reflected in the records. That is, one viewpoint focuses on the records of business transactions while the other looks at the records of the activities, processes and mandates integral to managing the records of those transactions. The advantage of incorporating both views is that a single comprehensive and highly integrated view can emerge based upon an explicit separation of the concerns of all stakeholders. In this way, business and archival decisions pertaining to what should be kept, how much should be kept, how long it should be kept, how it should be kept and why it should be kept, are informed by the widest range of interests.

Conceptual issues

Within the records continuum, the creation of records—that is, what records need to be made within the business process and why—is something that is seen as part of managing records. It should be determined as much as possible in the design of computer systems and software applications to enable required functions to be present in operational systems. From a business perspective it should be clear how the business process will be documented and why. To achieve this requires an understanding of the business, juridical and societal requirements in the given business context, which will also help determine what types of documents need to be created and with what technologies. This also touches on the question, when do records come into existence? Is it at the moment that they are registered in the records system, or is it after they already are created in the business process and have played a role in this process? From the records continuum point of view it will be the moment they are active in a transaction. This is part of the appraisal process, which is concerned with deciding (1) what records should be created to document a business activity and (2) how long those records should be retained.

The specific characteristics of digital records, especially the difficulty of preserving them across ever-new generations of information technology, make retaining them a challenge. Every transition to a new generation may entail loss of information and in some cases even loss of essential information that will impact on the authenticity of the records. Preservation becomes in this way part of the appraisal process too, because with each migration, conversion and even emulation an assessment has to take place to identify the best possible preservation strategy for a certain type of record. In this perspective, preservation is part of the process of maintaining records over time, which begins at the moment of designing the technological infrastructure and systems that will create, manage and maintain the records.

Digital preservation in this document is thus seen as the specific process of maintaining digital records during and across different generations of technology over time, irrespective where they reside.

The modeling techniques

It is impossible to model reality in all its aspects, relationships and expressions, not only because of the limitations of the human mind but more specifically because of the limitations of modeling itself. Modeling of reality in all its aspects provides a kind of meta-reality as incomprehensible as reality itself. This is why the intent of modeling per se is to take a “slice of reality” and to express certain aspects of that reality (or an object from that reality) graphically to understand how given objects are operating and interrelating. By virtue of its characteristics, a model seeks to reduce the complexity of reality to promote understanding that will enable informed actions and decisions to be taken.

The Preservation Task Force of InterPARES 1 developed a functional model of the process of preserving authentic digital records following the Integrated Definition (IDEF) method prescribed by the InterPARES International Team.⁷¹

In IDEF0, “A function model is a structured representation of the functions, activities or processes within the modelled system or subject area.”⁷² An IDEF(0) model includes activities and entities. An activity is depicted as a box whose name indicates the nature of the activity. An entity either goes into or comes out of a process (activity). Three types of entities go into a process: inputs (I) that are transformed or consumed in the process, controls (C) that govern its execution, and the mechanisms (M) needed to carry it out. Only one type of entity comes out of a process: the outputs (O) that are produced by acting on the inputs under conditions and constraints imposed by the controls. In IDEF(0) diagrams, the four types of entities are always depicted as arrows in the following arrangement: Inputs enter a process box at the left side. Controls enter at the top. Outputs exit from the right, and mechanisms enter at the bottom. Given this invariant order, the entity arrows are collectively referred to as ICOMs.⁷³

In IDEF(0) diagrams, there are two basic icons: boxes are used to represent activities or processes and arrows represent ICOMs. In IDEF(0), a process may be decomposed into its sub processes. This is depicted by creating a new, child diagram in which the parent process box becomes the outer boundary of the diagram and the sub-processes are depicted as boxes within that diagram. All ICOMs connected to a box at a higher level are shown entering or exiting at the corresponding edge of the decomposition diagram. Successive decompositions can be delineated to achieve whatever level of precision or clarity is desired. Such successive decompositions constitute a decomposition hierarchy. All IDEF(0) models start at the highest level, labelled “A0,” showing only one process box, which is the function being described taken as a whole, and the ICOMs that enter the function from the outside and that are output from the function. This simple notation provides a systematic and highly coherent method for describing a process to whatever degree of granularity is needed.

An example of such a diagram is shown in Figure 1 below.

⁷¹ The following section has been quoted from Thibodeau et al., “Preservation Task Force Report,” op. cit., 103.

⁷² United States Secretary of Commerce, *Draft Integration Definition for Function Modeling*, op. cit.

⁷³ Robert P. Hanrahan (1995), “The IDEF Process Modeling Methodology.” Available at <http://www.stsc.hill.af.mil/crosstalk/1995/06/IDEF.asp>.

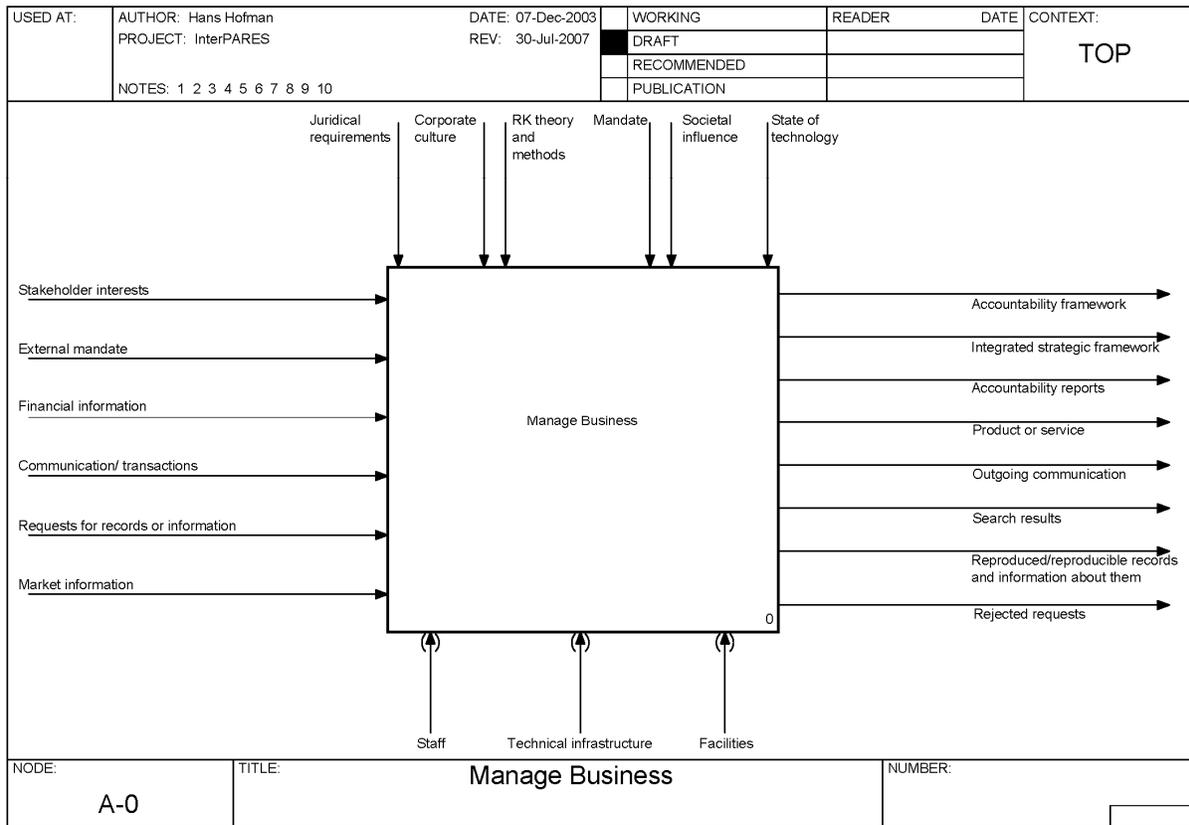


Figure 1. Highest level diagram of BDR Model in IDEF0 (A-0)

Although IDEF0 was viewed as adequate for the purposes of the development of the model, it was determined that certain adjustments would be needed to ensure that the model that emerged would be relevant and effective and, above all, capable of being implemented. To ensure that the modeling work captured essential aspects of the record continuum and its management, UML (Unified Modeling Language) class diagrams were also developed at a high level. UML class diagrams offered an object-oriented view that complemented the function-oriented view of IDEF0. UML uses a standardized graphical notation to represent classes of objects (including digital objects or artefacts but also the organizational and societal elements, instruments and constructs), along with their supporting information, expressing their interrelationships, characteristics and operations or behaviours.

First and foremost, UML is a language. There are rules governing how things can be combined to form expressions. The idea is that UML doesn't just give you a way to draw diagrams, but it gives you a way to express concepts and relationships.⁷⁴

The advantage of using UML class diagrams is that they allow identifying the classes of digital objects to be taken into account with their identity and other (meta)data elements, as well

⁷⁴ Dan Pilone, *UML 2.0 Pocket Reference* (O'Reilly Media, 2006), 3. UML is a specification of the industry consortium Object Management Group (OMG) and also is available from ISO as ISO/IEC 19501. More information about UML can be found at <http://www.omg.org>.

as the operations that can be performed on those (data) objects and the cardinality of their relationship with other objects.

Both the IDEF0 and the UML class diagrams are needed, since they each express important concepts in managing records from different perspectives. The IDEF0 model shows what processes, functionalities and activities are needed to support recordkeeping and management. It also shows how data and information are created, transformed and consumed by different functions. The UML class diagrams represent digital information objects that are central to managing records (e.g., records, retention schedules, etc.) and their composite structure, when relevant. The class diagrams also represent important attributes of the digital objects and show how the information objects relate to one another. It is possible to draw relationships between the IDEF0 model and the UML class diagrams. For example, data elements that comprise ICOMS in the IDEF0 model may appear as objects in the class diagrams with their attributes and relationships elaborated in the class diagrams.

In addition to employing UML class diagrams and recognizing the need to support multiple views, it was decided to adopt a liberal approach to the use of IDEF0 by stretching it in time and space (domain) as well as in levels of aggregation, thus making it scalable and more dynamic in its application.

The modeling work was undertaken by a small number of specialists comprising an archivist, an archival program analyst, a scientist and a computer scientist. Research assistants from the University of British Columbia supported the work by undertaking research on business models and definitions. As a result of time limitations it was not possible to conduct a “walkthrough” of the model, which is why the model still requires testing and validation and should be viewed as an intermediate result of the overall InterPARES 2 Project.

Applying the model

Principles that underpin the model

In understanding the model, there are some important principles that need to be taken into account. These principles, which serve as the basis for the two different expressions of the model, are as follows:

1. the model must be applicable to all types and sizes of organizations, ranging from an individual to a multinational;
2. the model must be applicable through time and through multiple dimensions and thus expressing more than one view and perspective; and
3. the model must be technology independent.

The model must also address the two dimensions of preservation: time and space. Through time, the authenticity, completeness, meaningfulness and usability of records needs to be maintained, despite changing cultural contexts and changing technologies.

Across space, different organizations representing multiple domains may be involved in the management of records both contemporaneously and sequentially through time. For instance, records created and used in a record creating organization may also be of interest to third parties. Across space, for instance, they may be of interest to citizens, audit authorities, tax revenue office, stakeholders and other parties depending on the business context. Through time, they may be managed by subsequent agents that have a responsibility for their preservation.

The model needs to reflect the most complicated situations and be applicable to organizations having complex mandates, organizational structures, business processes, etc. At the same time, however, the model must also be capable of being applied to the very smallest unit of

“organization”—the individual, one-person enterprise. Needless to say, in the case of the one-person enterprise, the detailed diagrams and other complex aspects of the model may not be necessary. Regardless, when used it will be necessary to identify clearly at what level of aggregation the model is to be used. Within a given organization, for instance, it will be important to for the organization to determine whether the model is to be used for the whole organization, thereby including all business processes of the organization, or for one specific business process.

The model is thus indifferent to underlying organizational structures. What it tries to express is the coherence of primary business activities and the meta-processes of recordkeeping, no matter what organizational structures may exist. The overall intent is to support a perspective where the management of the business and the management of the records of the business are coherent and harmonized.

Benefits of the model

By taking the organization and the organization’s business as a starting point, the model will help organizations ensure that their recordkeeping policies and strategies are in direct line with and supportive of their business needs. By embedding recordkeeping within the business, organizations will be able to secure the following benefits (as expressed in ISO 15489:2001, clause 4):⁷⁵

- conduct business in an orderly, efficient and accountable manner,
- deliver services in a consistent and equitable manner,
- support and document policy formation and managerial decision making,
- provide consistency, continuity and productivity in management and administration,
- facilitate the effective performance of activities throughout an organization,
- provide continuity in the event of a disaster,
- meet legislative and regulatory requirements including archival, audit and oversight activities,
- provide protection and support in litigation including the management of risks associated with the existence of, or lack of, evidence of organizational activity,
- protect the interests of the organization and the rights of employees, clients and present and future stakeholders,
- support and document current and future research and development activities, developments and achievements, as well as historical research,
- provide evidence of business, personal and cultural activity,
- establish business, personal and cultural identity, and
- maintain corporate, personal or collective memory.

The model is a tool that organizations can use to systematically analyze, design and begin to implement their recordkeeping framework such that it emerges as an integral component of the organization’s business. Given that most organizations have at least some of the components of recordkeeping in place (i.e., no matter how modest these components might be, the organization’s are not starting with a clean slate), the model can be used to audit the existing situation and assess the extent to which various approaches to designing the recordkeeping function may or may not be appropriate to the given business context it is serving. The results will enable decisions to be made concerning not only the design of the recordkeeping function

⁷⁵ International Organization for Standardization, ISO 15489-1:2001, op. cit., 4.

and paths to implementing a recordkeeping system, but also how identified gaps between the recordkeeping function and the business functions of the organization can be closed.

In this respect, the UML class diagrams of the model identify the main *information objects* that are relevant in recordkeeping, such as agents, business and recordkeeping activities and records. For each of these entities, information has to be captured and kept over time. These information objects may be further detailed in sub-classes and through their interrelationships. All will be described through their attributes and, to some extent, through the operations that can be performed on them. Thus, the class diagrams help identify what information has to be created, captured and maintained over time in a recordkeeping environment.⁷⁶

In contrast, the IDEF0 component of the model focuses more on the *activities* that need to be undertaken to implement recordkeeping in an organization. Those activities regard the recordkeeping needs, risks, requirements and subsequent policies, strategies, procedures and instruments, as well as the actual recordkeeping activities that are needed and appropriate in the organization, given the business functions and activities for which it is responsible.

The two views (the information-focus UML class diagrams and the activity-focus IDEF0 diagrams) are complementary and provide a good framework for organizations to identify what has to be done to implement good recordkeeping.

The model provides a framework and tool to:

- support organizations to implement recordkeeping in a systematic and structured way taking into account the current situation and the capability of the organization to achieve, if needed, better recordkeeping policies and practices;
- ensure that business activities have proper recordkeeping processes and procedures implemented; and
- ensure recordkeeping processes are properly embedded in business activities.

Finally, a model of a prospective operational recordkeeping environment enables the organization to conceptualize, plan, acquire resources, communicate with both technical and business stakeholders and evaluate, make and, if necessary, revisit decisions about realizing the model's functions in systems or services.

Overview of the Business-driven Recordkeeping Model⁷⁷

In this section, the BDR model as developed with the two different modeling techniques (IDEF0 and UML Class Diagrams) will be discussed, as far as possible, in parallel to provide the reader with the opportunity to compare the two different expressions.

Introduction

The first objective of the model is to identify and express the relationship between doing business activities and the information used and created in doing this, as well as the capture and management of that information as records. The second process is the management of both sets of activities.

⁷⁶ Guiding the class diagrams was also the draft technical specification ISO-23081-2 on metadata for managing records.

⁷⁷ The Business-driven Recordkeeping model's IDEF0 diagrams, together with the IDEF0 activity and arrow definitions and the UML class diagram definitions, are provided in Appendix 15.

In taking this perspective one can identify three types of processes: the actual business processes, the actual meta-process of managing records (recordkeeping) and the overarching higher level meta-process of managing (the interaction between) these two.

The different types of processes (or contexts) leads to three distinct views expressed in UML class diagrams:

- *the business view*—taking the (organizational) perspective of a business in its activities and creating records; the core item for business is the transaction. From this view recordkeeping is viewed as a function of business;
- *the recordkeeping view*—taking the perspective of capturing and managing records created in a business; the core item for recordkeeping is the record. From this view a business activity provides the context of the records; and
- *the framework view*—taking the perspective of the need to integrate both the business view and the recordkeeping view so that they are properly aligned. This reflects the layer that controls and amalgamates or integrates both previous views.

In principle, these three views occur in any business situation. Depending on the scale, the complexity of interaction between them will increase and will lead to differentiation in the processes at each level with inherent proper organizational structures. A one-person shop does not need to differentiate (organizationally) between all the management processes that will be closely knit together. In a multinational organization, whole departments may be dedicated to one specific process; such as the process of accounting or that of records management, for instance. One layer that may not be explicitly visible in the IDEF0 component of the model is the wider context within which all three of these views sit: the societal and cultural dimension. To make the continuum approach view complete, however, this dimension has to be added:

- *the societal view*—taking the perspective of the ambient contextual environment, needed to understand the external influences on a business and its recordkeeping practices. This layer has its own dynamics and is (usually) out of the control of the organization that runs a business.

It is reflected indirectly, as it should be translated into requirements and constraints that will govern business and recordkeeping business, and does not surface explicitly. For this reason, a UML class diagram has been developed to represent the societal view. In this diagram, the classes of business activity and agent should be seen at a higher level of abstraction/generality than in the business or recordkeeping views. The societal view is both the broader context of the inner dimensions and a perspective or entity in its own right that embeds the agents (organizations, individuals) of which it consists.

Each of the four views does not stand on its own, but has an overlap with the other three. As such, they are interconnected and represent a multidimensional view on recordkeeping in line with the records continuum concept.

The core diagram

Starting from the diagram that delineates the object or area of observation from its context, the IDEF0 methodology decomposes the functions and processes within that area into ever more detail, until a level is reached that does not need further decomposition.

As indicated, this model takes the view of an organization (ranging from an individual to a multinational company) as its starting point and identifies all processes needed to perform recordkeeping in relation to any type of business activity. The core diagram is shown in Figure 2

with the top level of the three most relevant areas of activity: managing the business framework (A1, including other subordinate frameworks such as the recordkeeping framework), carrying out the actual business activities (A2) and carrying out the activities for managing records (A3).

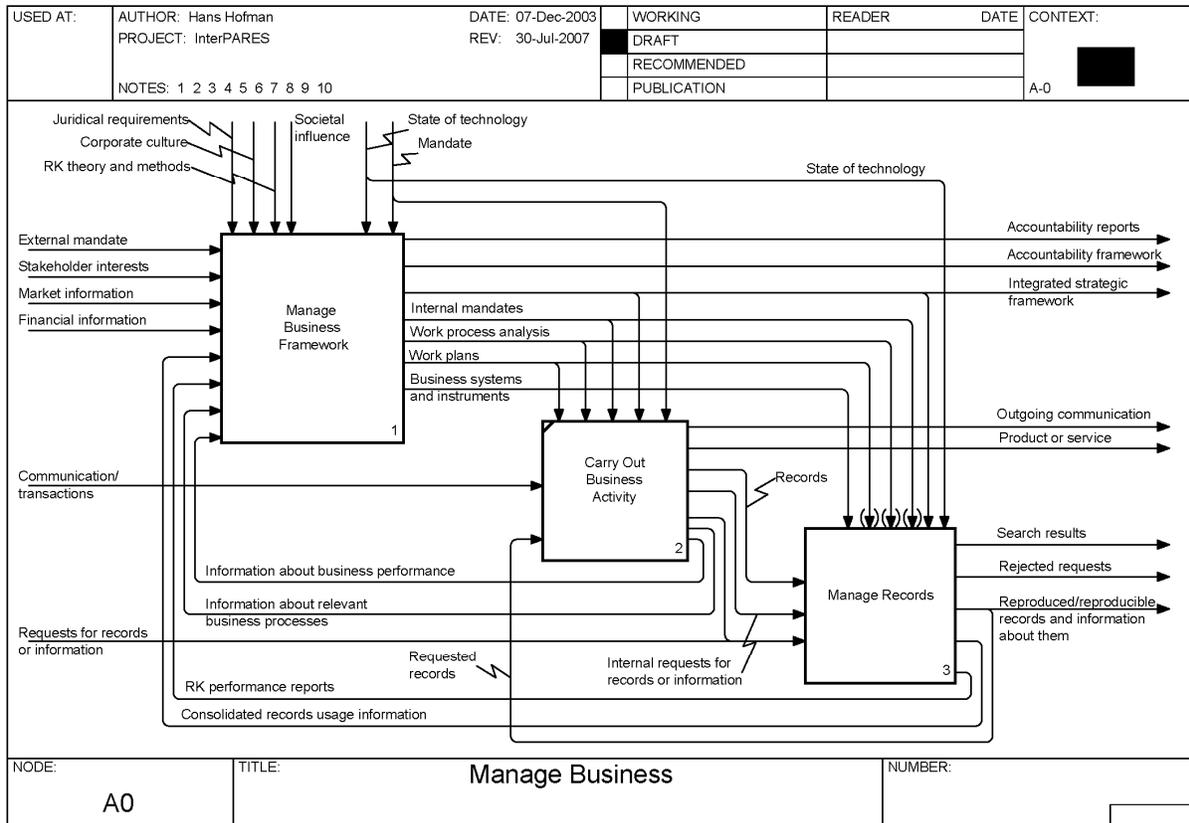


Figure 2. High level model of the business view (A0)

As indicated, in the IDEF0 methodology each of the boxes or processes in the A0 diagram is further decomposed into more detailed activities explaining what is needed to perform the high level process properly. In the domain of recordkeeping (box A3), the ISO 15489:2001 standard has served as a framework for identifying the processes involved, represented in activity boxes A1 and A3. For the box representing the carrying out of a business activity (box A2), this turned out to be more difficult for the domain of carrying out a business activity for two reasons. First, no appropriate generic reference model could be identified that could serve as a framework for it. Second, the alternative of using a real business activity would have provided an example of what could be expressed here, but at the same time would have limited the model to that one business activity. So it is left to the user of this model to take a relevant business activity or process as an example and decompose it into the steps that are needed to carry it out. When that is done, it will give “real world” meaning to the first and third boxes (A1 and A3), because they will be contextualized.

Thus, the model should be seen as an empty shell that can serve as an instrument for analyzing the business situation in relation to recordkeeping. The model becomes “alive” when

box A2 is decomposed based on a concrete business activity. Doing so will also set the scope of the whole model.

Despite the above, it can be said that it is in carrying out a business activity that the three axes/dimensions of *transactionality*, *identity* and *evidentiality*, as identified in the records continuum model, come together. Agents (*identity*) carry out transactions (*transactionality*) that are documented in records (*evidentiality*). Each of these dimensions can occur at different levels of aggregation. The scope and complexity of the business will determine how many levels of aggregation may be necessary and how complicated the interrelationships are.

It has to be noted here that the evidentiality dimension also occurs at the two other levels of records: that is, the management of records themselves and the management of the business, both representing processes that have to be accounted for and subsequently documented, as well. As such, this represents the recordkeeping dimension.

Each of the three boxes in the A0 diagram of the IDEF0 model is also represented in UML class diagrams: the (Business and Recordkeeping) Framework view, the Business view and the Recordkeeping view, respectively. A fourth class diagram has been made representing the Societal view, which is comparable to the context diagram (A-0) of the IDEF0 model (see Figure 1).

Business activities

As mentioned above, box A2 in the IDEF0 diagram represents the actual business activities to be carried out. In principle, any actual business activity can be taken and subsequently be decomposed using the IDEF0 technique. Such decomposition will require the identification of the level of observation of the business function or activity and, subsequently, the analysis of the function or activity and how it is or should be performed. Such an analysis will identify not only how the business activity is carried out, but also by whom, when and why records will or should be created.

To complement the IDEF0 model, a generic, conceptual UML class diagram was made of the business activity (and transactions) and its relationship with records and record transactions and is given in Figure 3, below.

Four main clusters of objects can be identified:

1. the business transaction entity and the (business) activity to which it belongs or of which it is a part; in turn relationships are drawn to function, mandate, jurisdiction, business plan, etc.;
2. the agent entity responsible for the business activity, rights and associated recordkeeping;
3. the record entity and its metadata; and
4. in turn, these objects are governed or controlled by the classes of mandates and the business and recordkeeping frameworks.

The following class diagram does not reflect the fact that, in some cases, the record itself can be at the same time the business transaction.

The processes for managing policies and frameworks

Policies and strategies are essential for a successful recordkeeping function in an organization. Organizations will have mission statements based on the responsibilities they have for carrying out business functions and activities. Derived from that they will develop policies that determine what the objectives and goals are and what frameworks will be applicable for achieving these objectives and goals.

In the following diagram (Figure 4), the high level functions are identified that will help organizations to develop the business framework and more detailed strategic plans. Policies serve two purposes: one internal, telling what has to be done according to what standards, rules and procedures, instruments and systems, and the other external, explaining to third parties under what policies or conditions the organization will perform its functions and obligations. An essential part of this activity should be a policy and framework for managing information and, more specifically, for managing the organizational records.

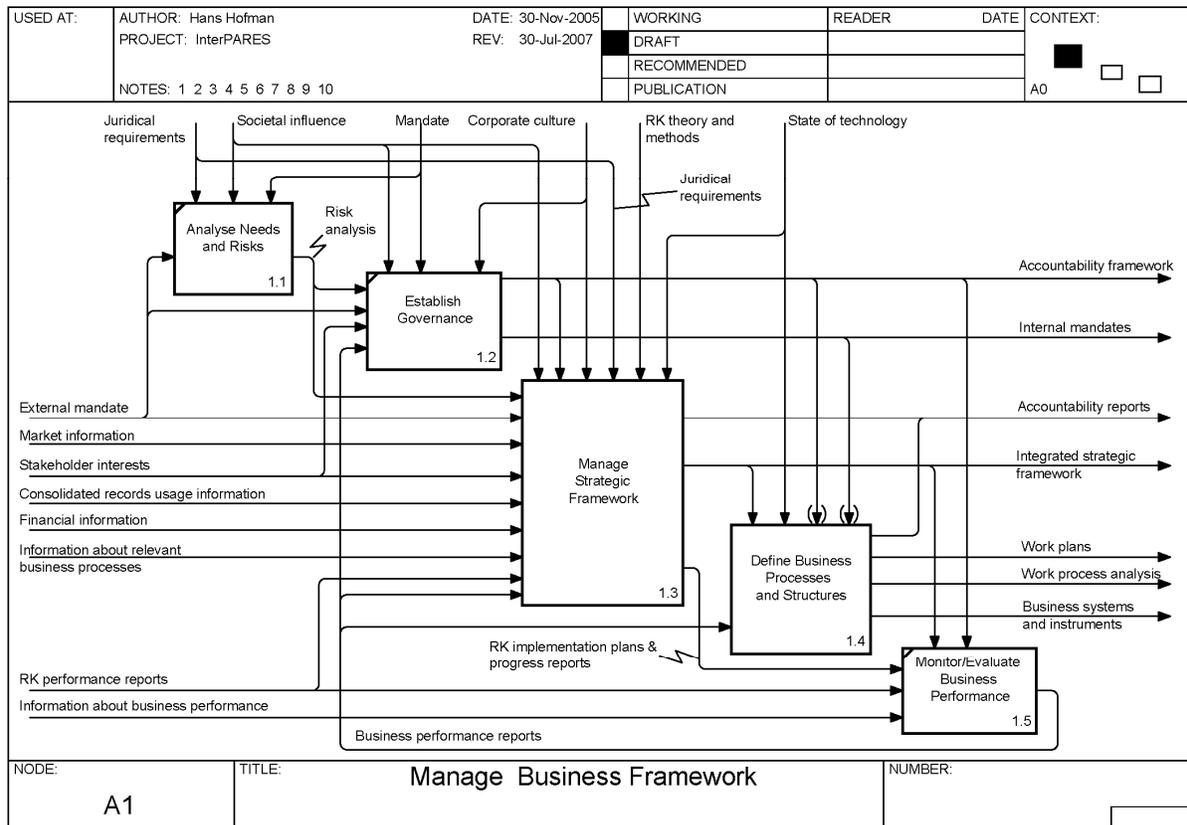


Figure 4. Overview of the main policy activities in managing a business (A1)

Such a framework and policy will be based upon an analysis of the organization’s functions and juridical and societal context. This also will include an identification and analysis of risks and measures for how to mitigate those risks. The framework will guide all business and recordkeeping activities of the organization.

The processes involved are (IDEF0 model, A1; see Figure 4):

Analyse Needs and Risks (A1.1)

Establish the business needs for records (including how long they are required to be retained), identify the risks for the business and the organization that need to be mitigated by the proper creation and management of records, along with those risks that will be present if these records will not be properly created and managed, to identify the requirements for records management. This activity is controlled by legal, juridical and organizational or business requirements.

Establish Governance (A1.2)

Set the overall strategic direction of an organization by establishing the set of responsibilities and practices necessary to ensure that the organization is accountable for fulfilling its mandate, achieving its stakeholders' objectives, meeting the current societal, ethical and moral duties, managing its risks appropriately, using its resources responsibly and monitoring its performance effectively.

Manage Strategic Framework (A1.3)

Establish strategic plans outlining the organisation's current and future direction, priorities and resource allocation strategies, in line with its business needs and key stakeholder interests—as well as including the required mitigation of business risks identified—implement them within an overall strategic framework, monitor the performance and application of the established plans both for the business activities and the recordkeeping processes and, if necessary, subsequently adjust the plans to continue to meet business and key stakeholder needs and interests.

Define Business Processes (A1.4)

Define an organisation's business operational targets and outcomes, delegate and assign resources, develop business and workplans, and design and develop business work processes, necessary instruments and systems structures to effectively manage the organisation's resources and support its work processes.

Monitor and Evaluate Business Performance (A1.5)

Periodically assess the performance of the business processes in relation to the organisation's strategic framework and the accountability framework. Based on the monitoring, produce business performance reports to inform the organisation's appropriate management functions to confirm or revise the business strategic framework, or business processes and structures.

One of the purposes of the viewpoint expressed in the A1 view is to identify where the business framework meets the recordkeeping framework. This happens as part of the A1.3 activity (Manage Strategic Framework). One of the strategic plans that has to be developed is the recordkeeping framework (activity A1.3.4.3). This will be done in close connection with a risk management framework and the business framework.

Important activities in the process of developing a recordkeeping framework are apart from the development itself: namely, implementing it (A1.3.4.3.3) and evaluating its performance and adequacy (A1.3.4.3.4). Implementation is then guided by a readiness and capacity assessment to identify what is needed to transform the organization from the current situation to one that is better suited to address the recordkeeping requirements within the given business context.⁷⁸ This will not be a onetime activity, but will need to be repeated periodically, depending on the results of the monitoring process. This monitoring process will regard both the internal performance, such as whether goals are met or how many failures are occurring, and the external developments, such as change in technology or in legislation.

A good model for the whole management process is the “Deming Cycle,” which distinguishes the processes of *plan* (define the policies and plans), *do* (implement the policies and plans), *check* (monitor and assess what is happening internally and externally), and *adapt* (decide on changes to improve).

⁷⁸ For a fuller overview of this approach, see http://www.tbs-sct.gc.ca/emf-cag/gcc-ec/ig-ge_e.asp.

The UML class diagram expresses a different view that focuses on the classes of information objects that are involved in setting policies and frameworks, their attributes, operations and relationships with one another.

In the diagram below (Figure 5), several clusters of classes can be distinguished:

1. the business activity cluster (gold) that is closely related to the business plan and the agent that is governed by a strategic framework;
2. the cluster for analyzing needs and risks (blue) leading to systematic and explicit identification requirements and an accountability framework;
3. the framework cluster (purple), including all types of policy frameworks necessary to do business; and
4. the classes mediating and interconnecting (light yellow) the different clusters such as the agent and the internal and external mandates.

As with the IDEF0 model, only a top level view is given here. For each aspect represented in Figure 5, new UML class diagrams at a lower level may be required that will represent a more refined and detailed view of underlying classes of activities and entities along with their attributes.

The recordkeeping processes

The third high level IDEF0 box (A3), which models the function of managing records, can be decomposed into four main processes (Figure 6) with the following definitions:

Capture Records (A3.1)

Based on rules established in the recordkeeping framework, the capture function identifies and brings under control the records that are created in the business activity and that need to be maintained. With the capture of those records, the required metadata are also captured/extracted to ensure the authenticity, usability, integrity and reliability of the records. The capture of metadata is done every time a record or aggregation of records is used in a business process. The capture process includes the registration and classification of the records as well as, if needed, the assignment of key words, so that the records are (uniquely) identifiable and searchable. The valid recordkeeping instruments will guide the registration and classification. Identification and information about the performance of this function are produced for evaluation purposes.

Maintain Records (A3.2)

This process is decomposed based upon the preservation function model as produced by the Preservation Task Force of the InterPARES 1 Project.

Following direction established in the preservation strategy as part of the recordkeeping framework for a given body of records selected for preservation, apply preservation method(s) targeted to that body of records to implement the preservation action plan for those records by maintaining the digital components of accessioned digital records, along with related information necessary to reproduce the records, certify their authenticity and enable correct interpretation of the records.

The maintain activity also carries out the disposition function, so that records are kept no longer than needed.

This maintenance activity enables the output, in response to a retrieval request, of the digital components of a record, along with information about that record or, if the request is only for information, the requested information. The “maintain” process also produces management or performance information that is used to evaluate execution of the “capture” function (A3.1). The process is carried out by persons responsible for preservation, using infrastructure technology.

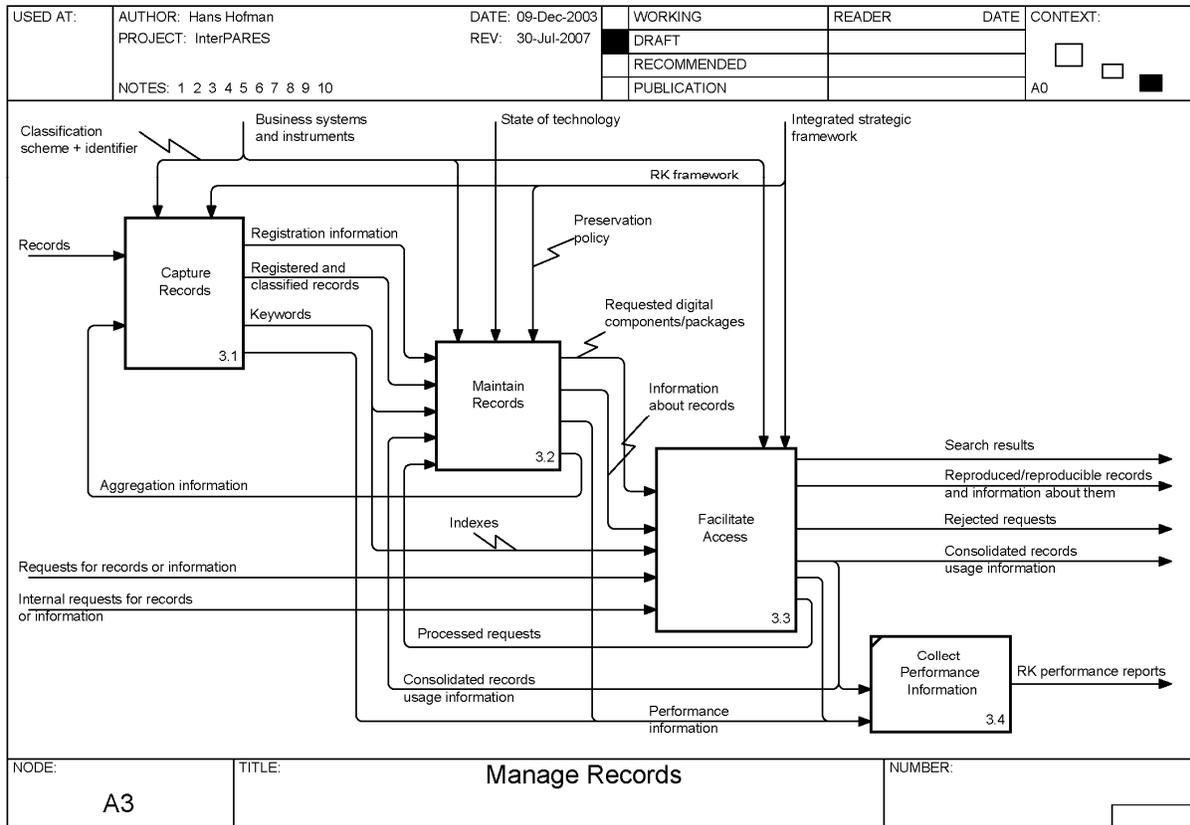


Figure 6. The Recordkeeping processes. IDEF0 - A3 diagram

Collect performance information (A3.4)

Synthesize and compile reports on the performance of the capture, maintain and facilitate access functions based on information continuously collected from these functions to inform the “evaluate recordkeeping framework performance and adequacy” function (A1.3.4.3.4). These reports may contain information about the applicability of policies, rules and methods, deviations from policies/rules and malfunctioning of systems, as well as suggestions for improvement. Other reports will be made with consolidated information about usage of records or aggregations.

The following UML class diagram (Figure 7) reflects a different expression of the recordkeeping function, drawing particular attention to the classes of objects involved in carrying out recordkeeping activities.

Those activities will be guided by a recordkeeping framework as established by the recordkeeping management function (see Figure 5). The diagram shows what transactions can be performed on the records (at all levels of aggregation), and the accompanying metadata, to maintain them as long as required. At the same time it identifies what metadata should be captured about the records and recordkeeping instruments and how these transactions should be documented. The classes of information objects and their attributes reflect, as such, a metadata schema needed to perform the recordkeeping function.

The following main clusters of UML classes can be identified:

1. the intellectual record and its aggregates, the associated contextual metadata and the essential characteristics (blue);
2. the technical components and aspects of the digital record (light yellow); and
3. the recordkeeping transactions (purple).

The broader context: the Ambient Society

In the IDEF0 model, the broader context of the organization is reflected in the A-0 diagram, which identifies how the organization is communicating with both its immediate and more distant environments.

These can be divided into four different areas:

1. developments, laws and other influences that have an impact on how the organization will operate and carry out its mandate. Together, these constitute the controls, which include juridical requirements, corporate culture, recordkeeping theory and methods, mandate, societal influence and state of technology;
2. input (material and immaterial) that are used by the organization and/or transformed into output;
3. output that serves the customers, citizens or other stakeholders; and
4. mechanisms that enable the organization to function, such as staff or personnel, technical infrastructure and facilities.

The top-level IDEF0 diagram, A-0 (see Figure 1), shows the most important influences and relationships between an individual or an organization and its environment. Within the lower level diagrams of the model some of these may be further decomposed into more precise descriptions.

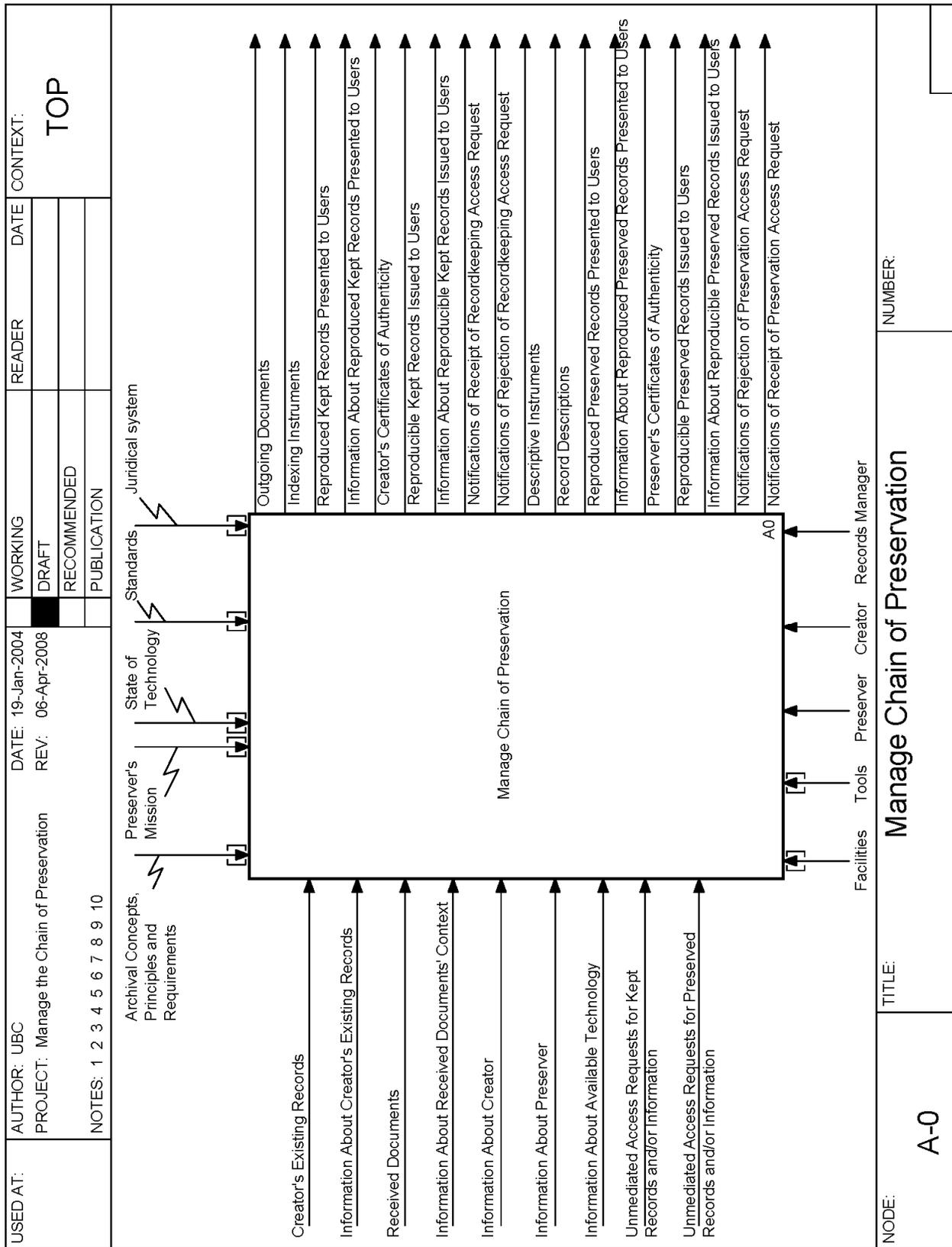
The UML class diagram with the societal view (Figure 8) is an attempt to model a recordkeeping perspective on society. It reflects the fourth dimension of the records continuum paradigm and, as such, is an entity in its own right.⁷⁹ It is within society that records, archives and archival institutions play a role and it will also be developments and aspects of society that will determine how records and archives will be created, used and managed.

⁷⁹ For a more comprehensive description of the societal aspects of the records continuum, see Sue McKemmish, Michael Piggott, Barbara Reed and Frank Upward (eds.), *Archives: Recordkeeping in Society* (Wagga Wagga, Australia: Centre for Information Studies, 2005), especially chapters 7–12.

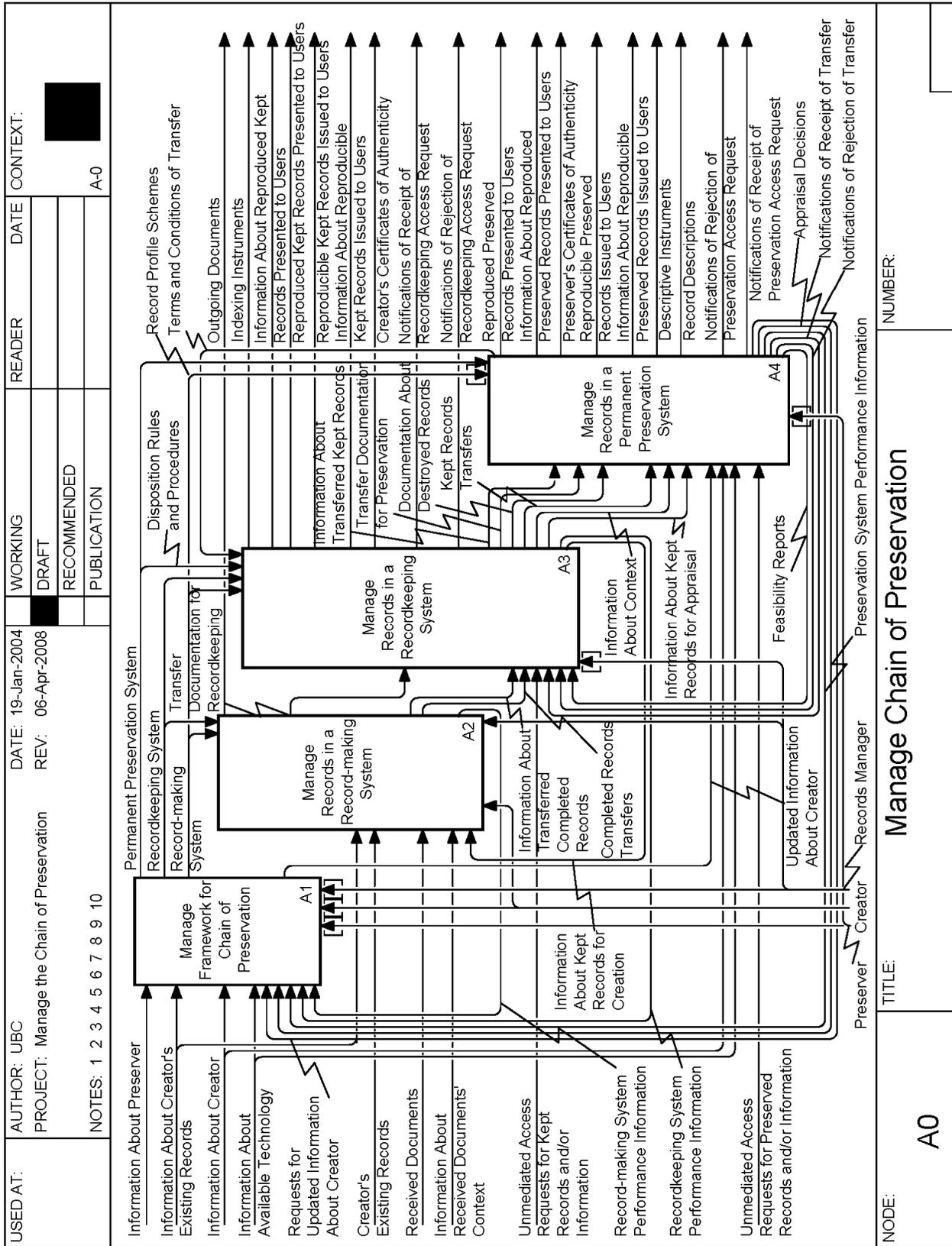
Appendix 14

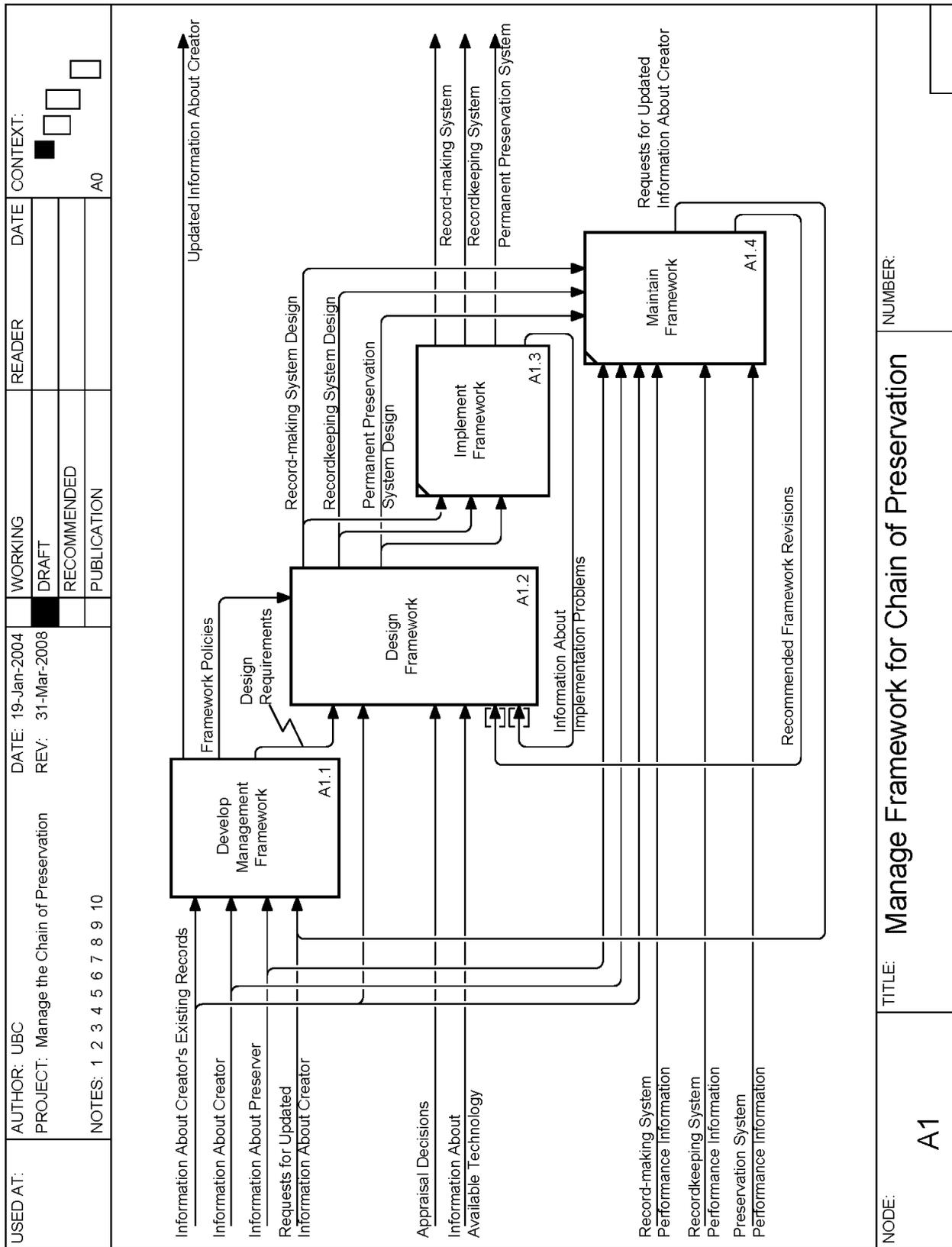
Chain of Preservation Model

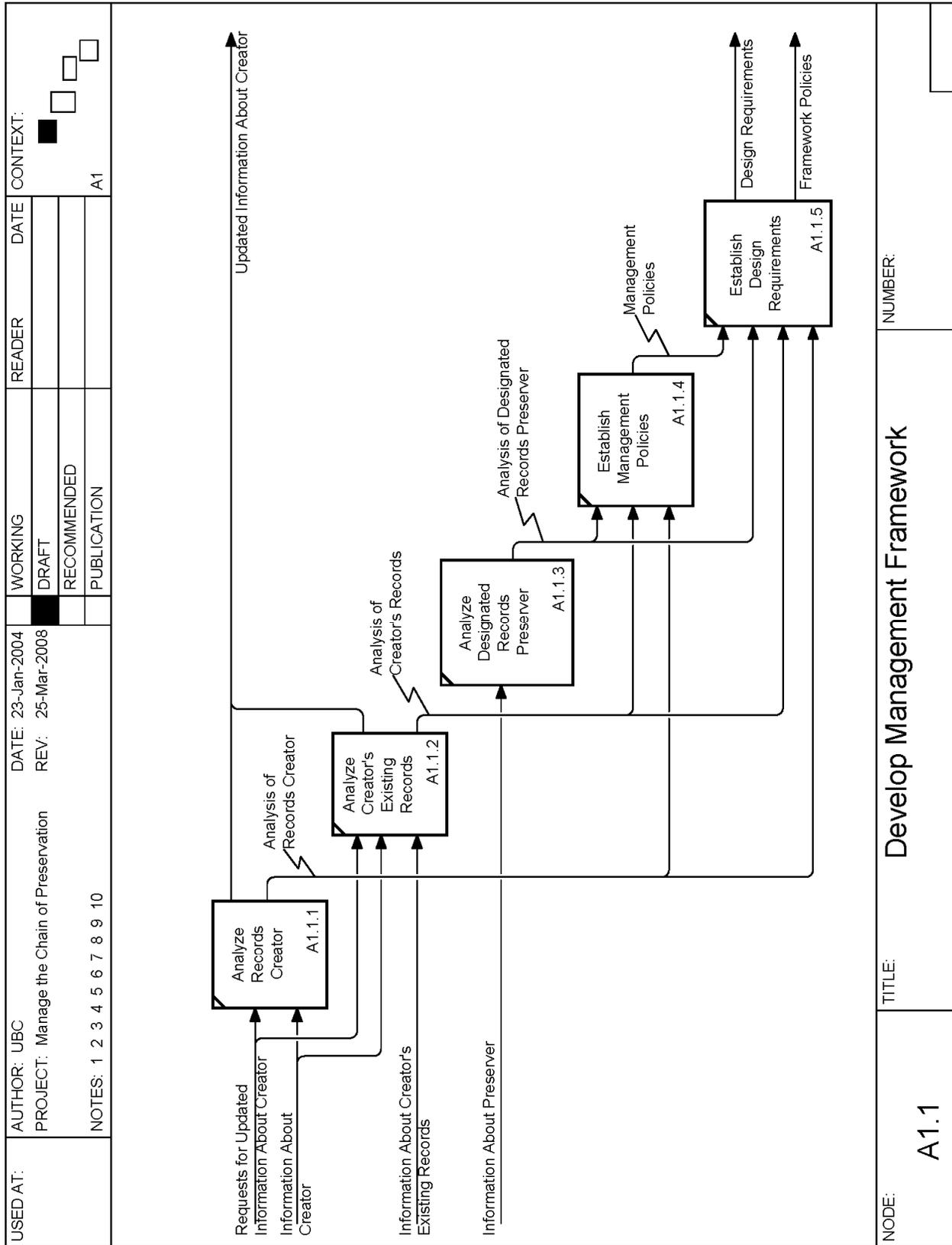
Diagrams and Definitions



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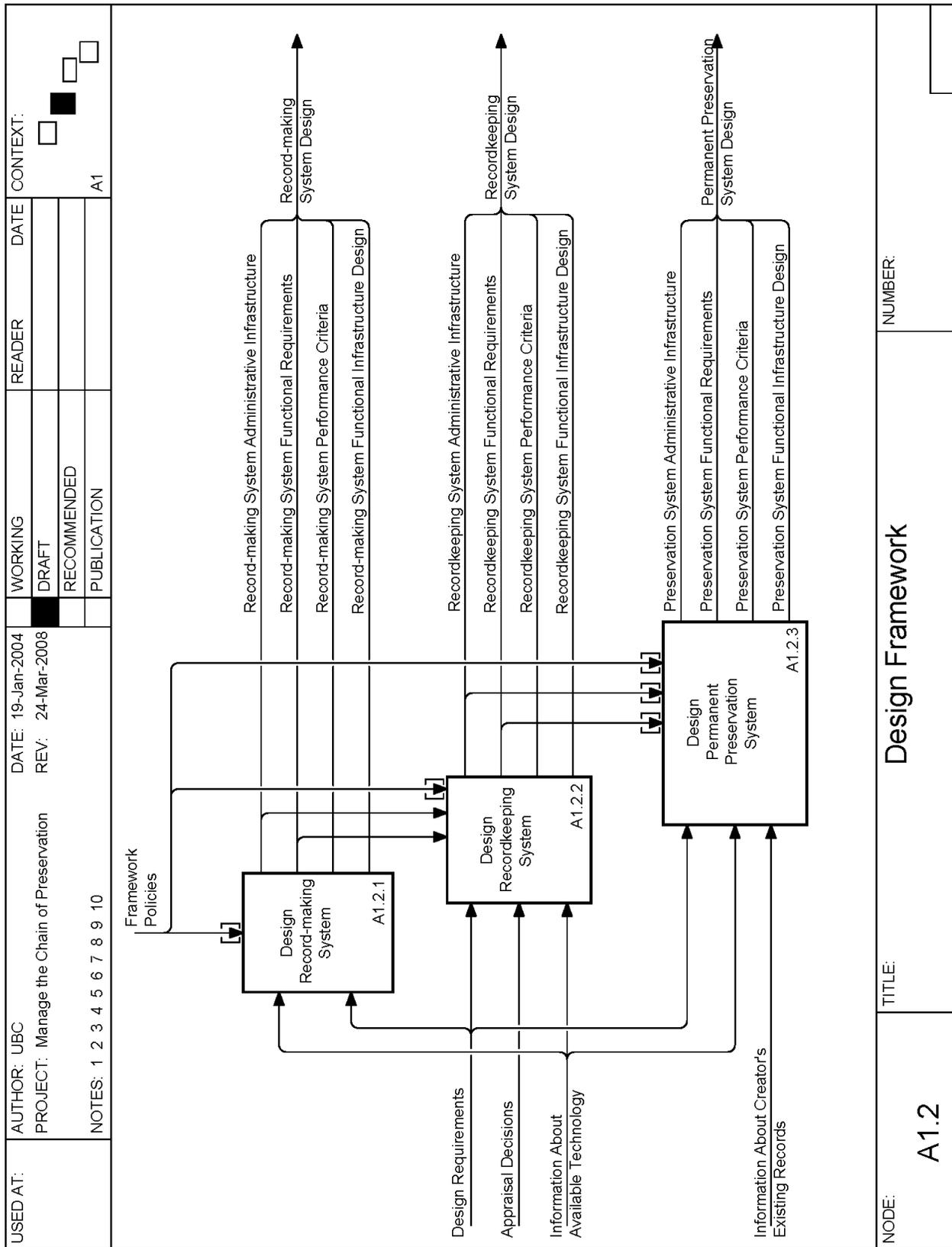
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Develop Management Framework

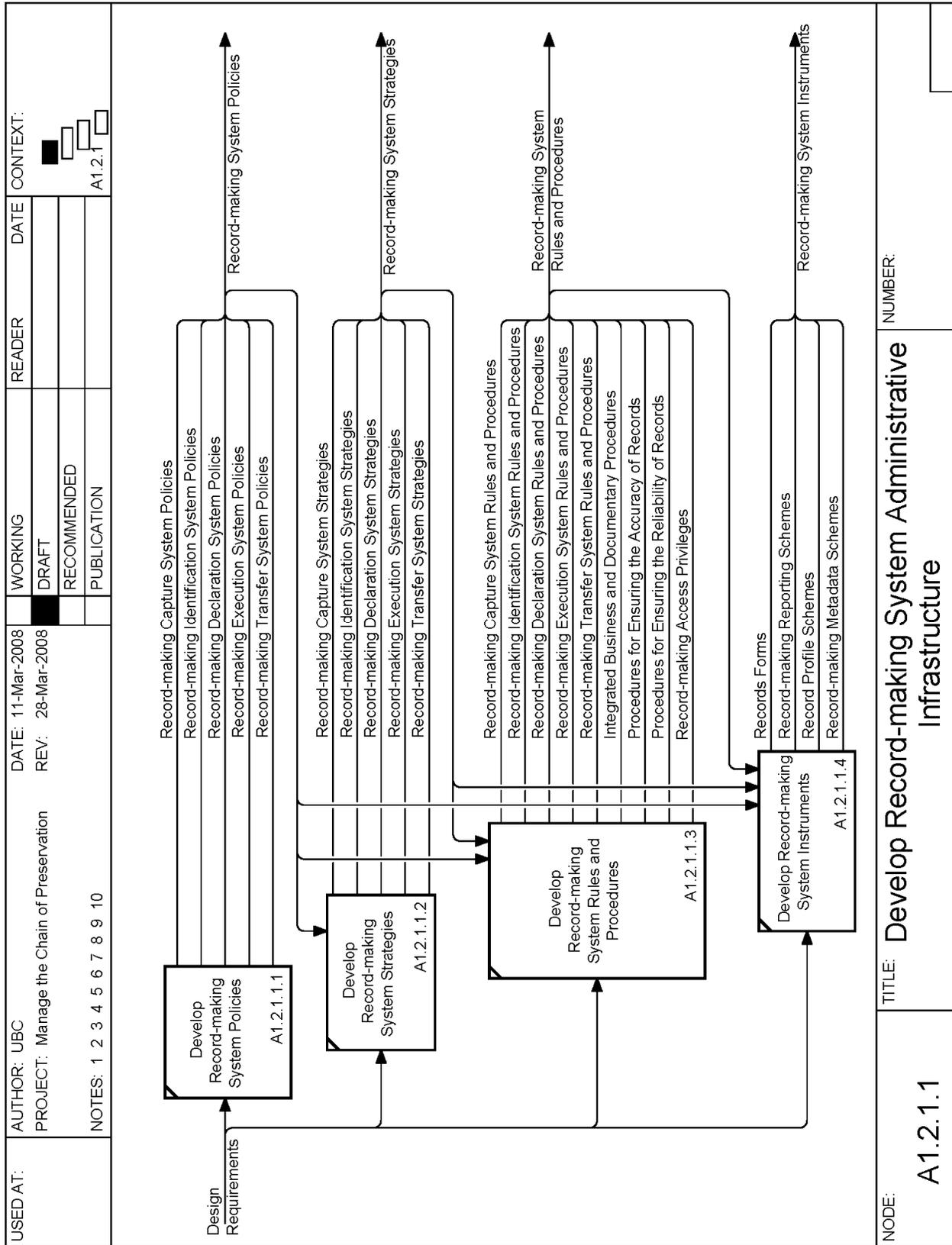
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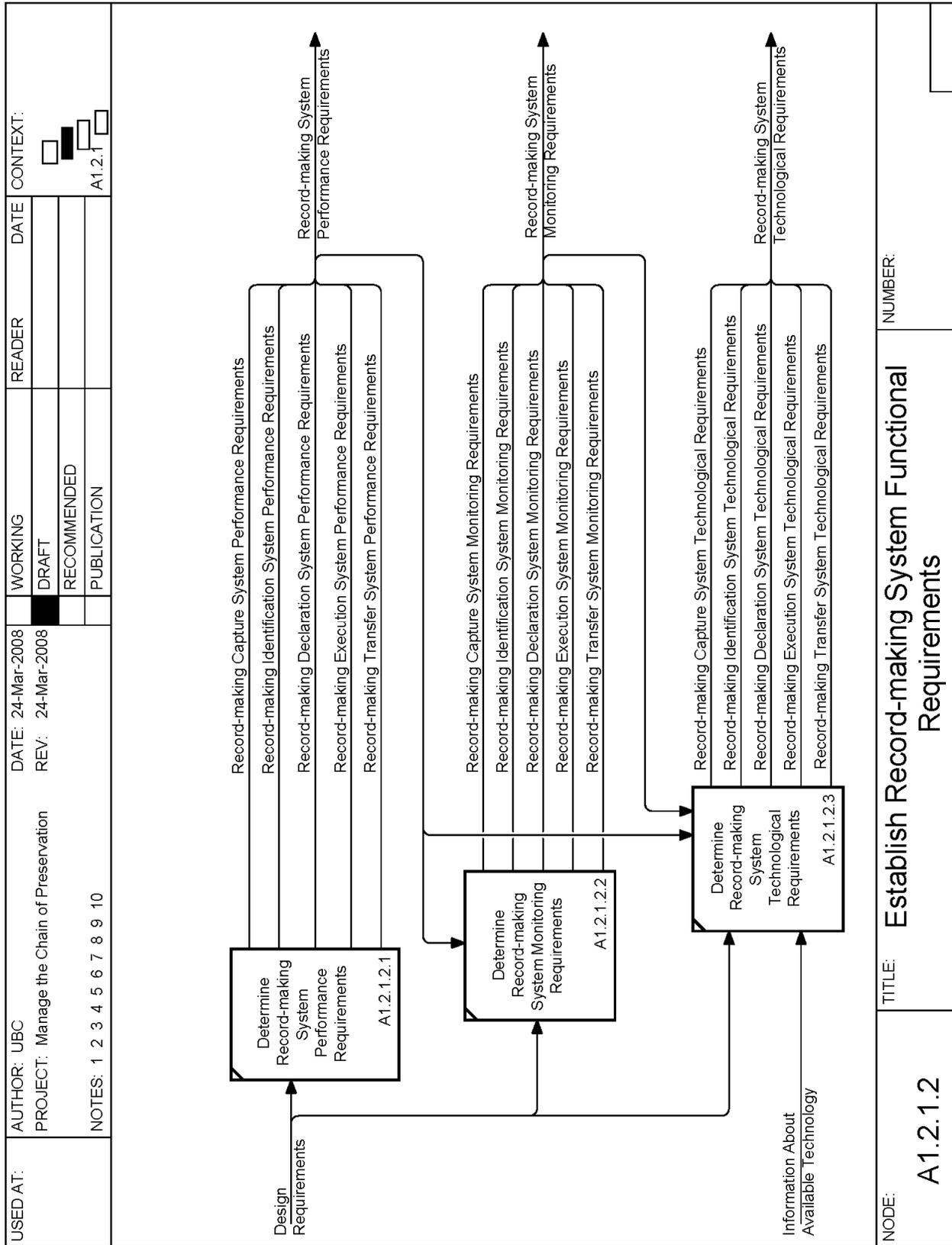


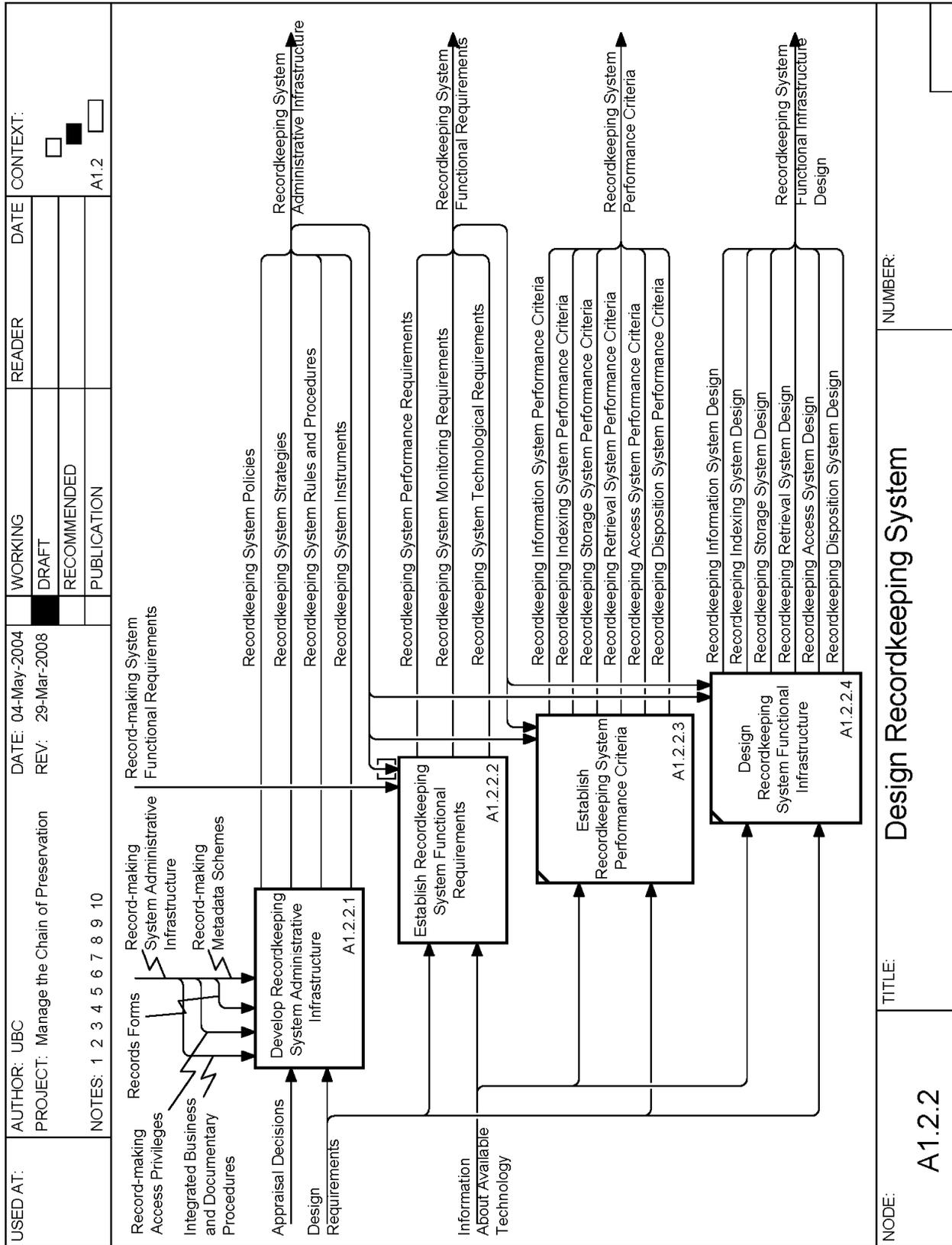
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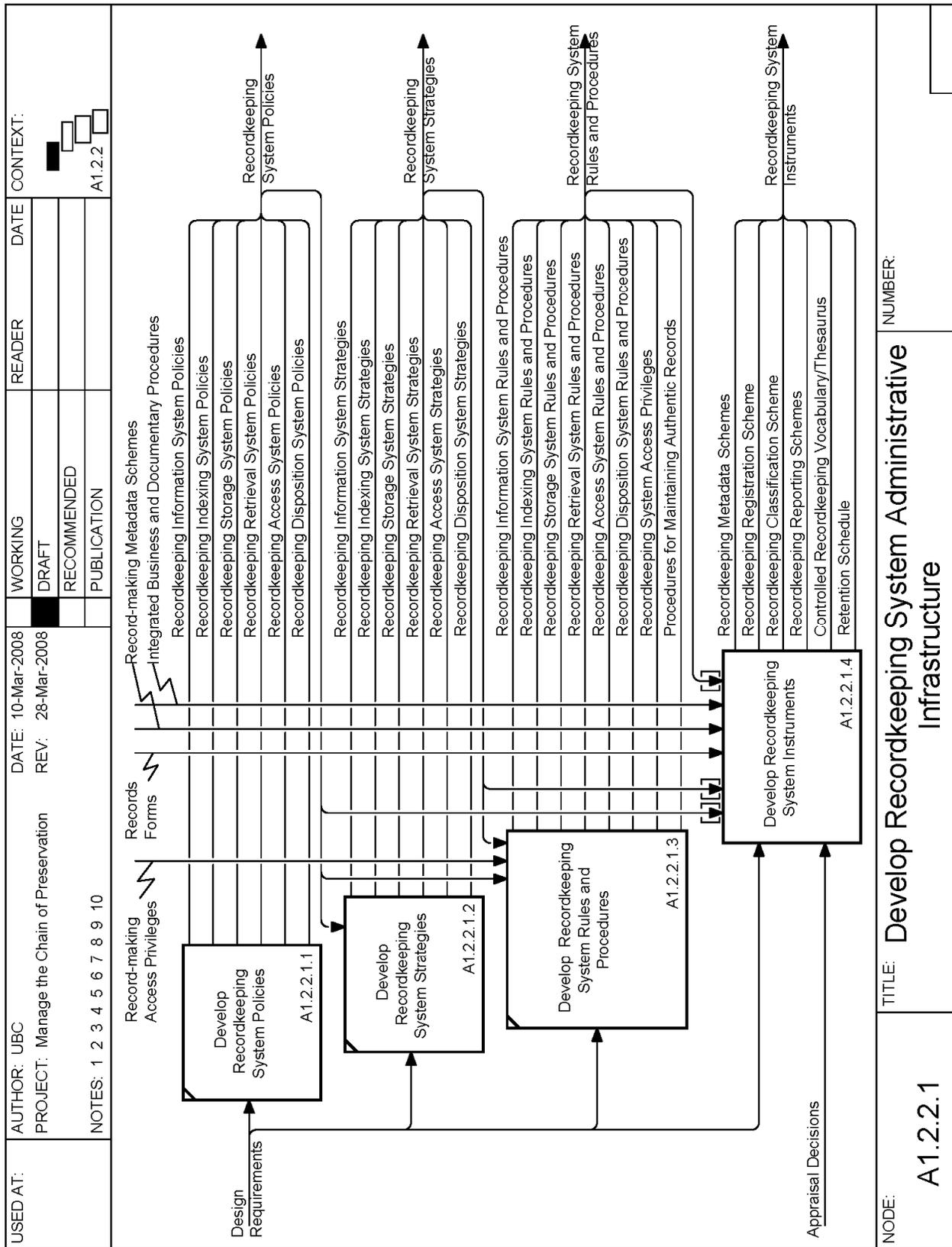
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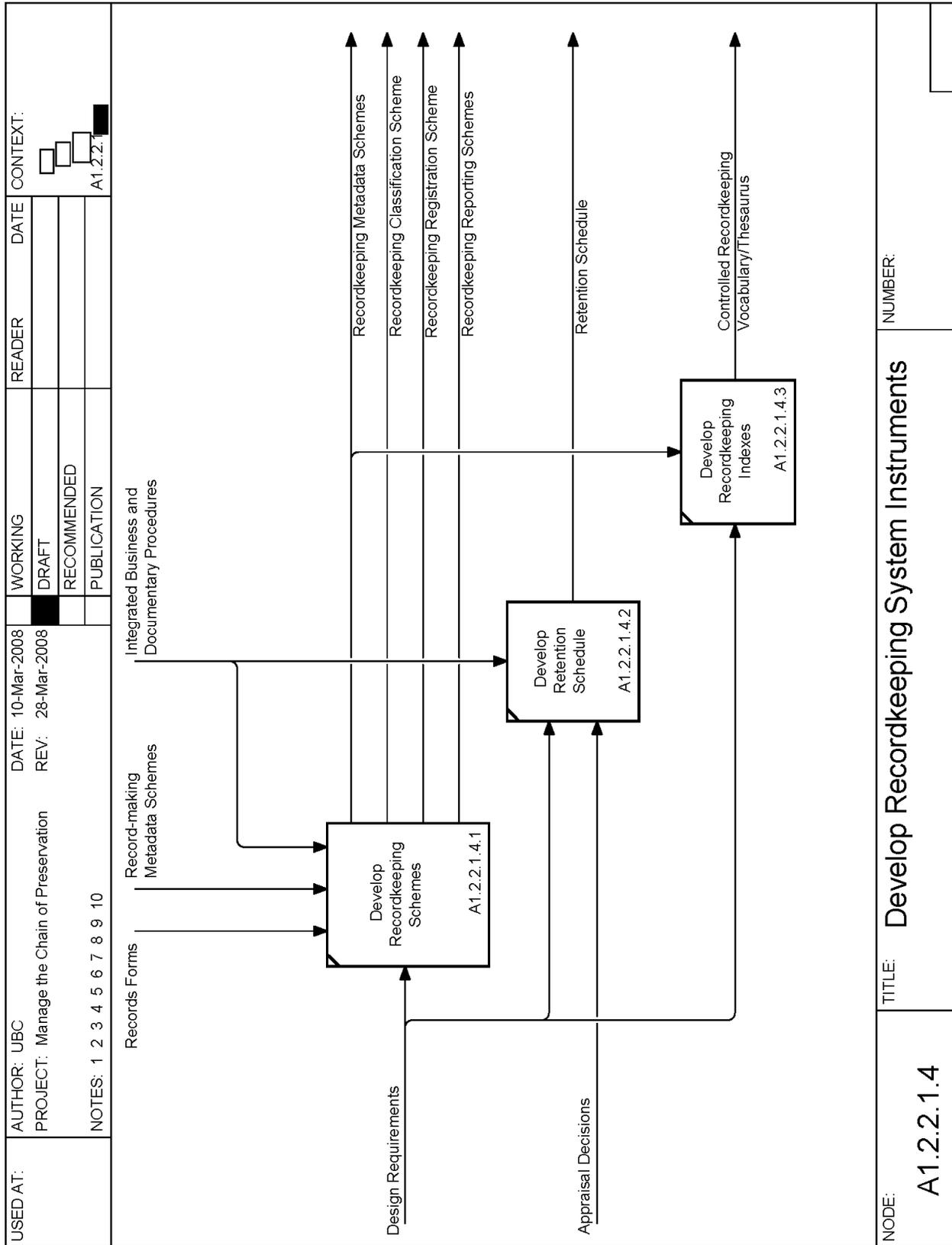
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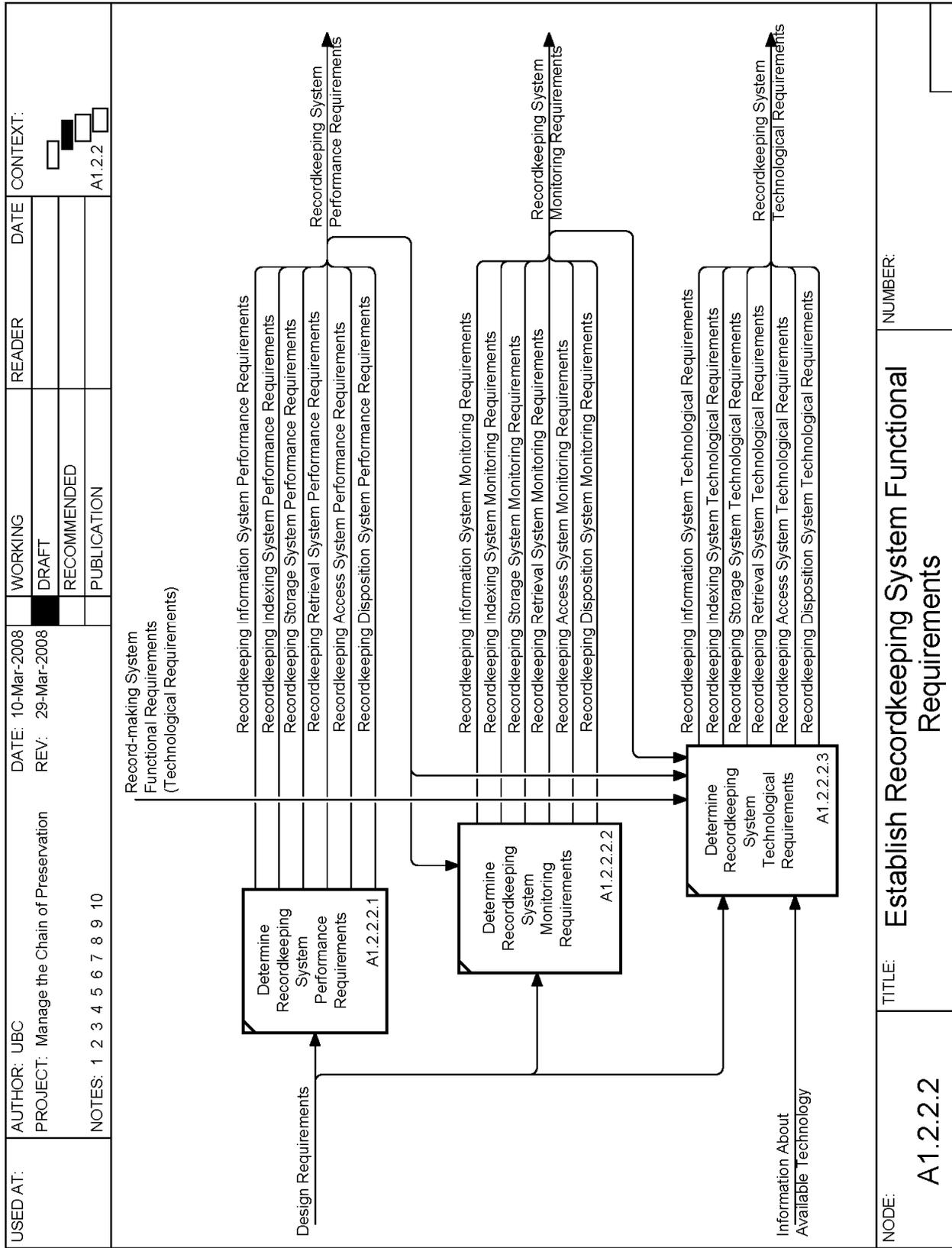


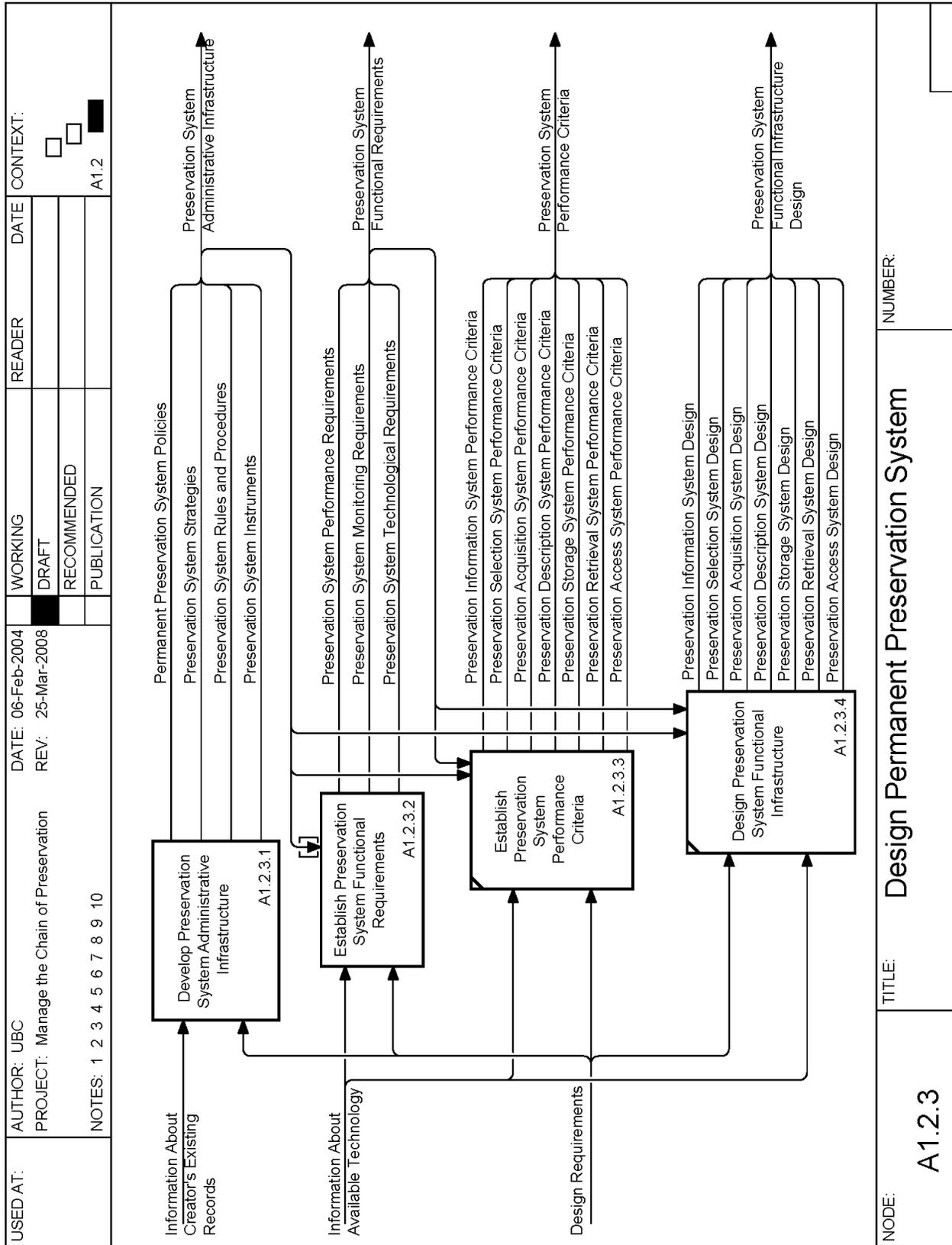


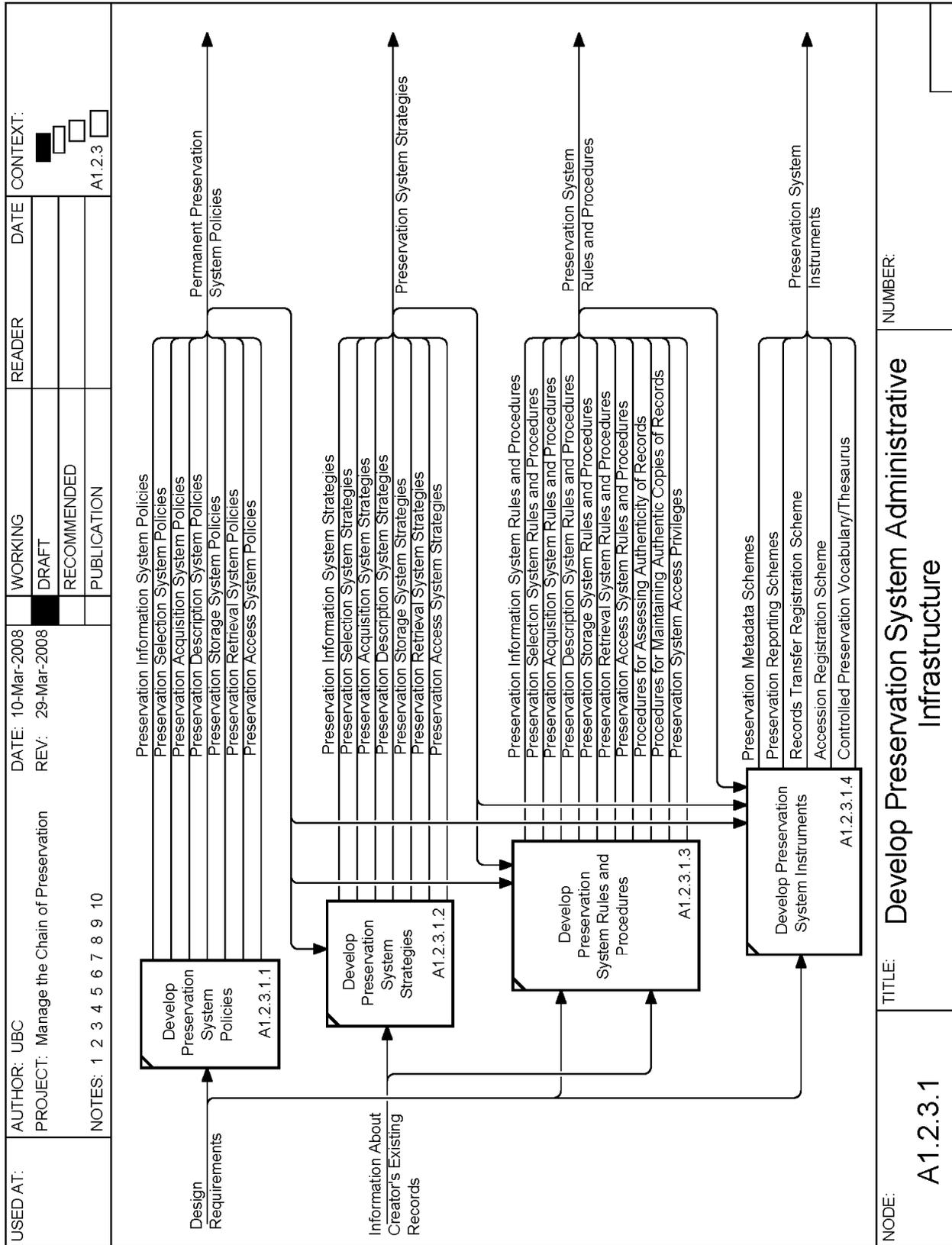


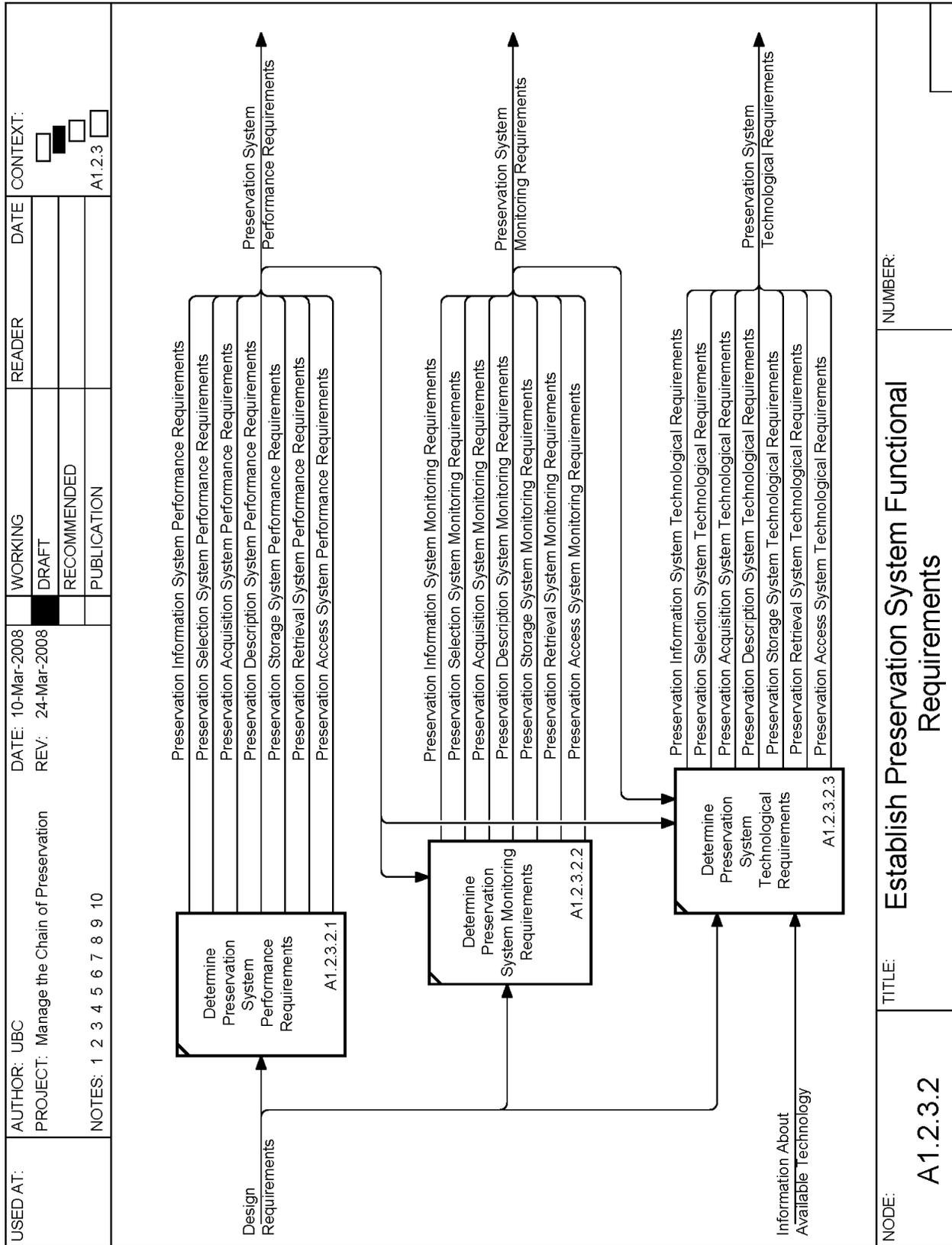








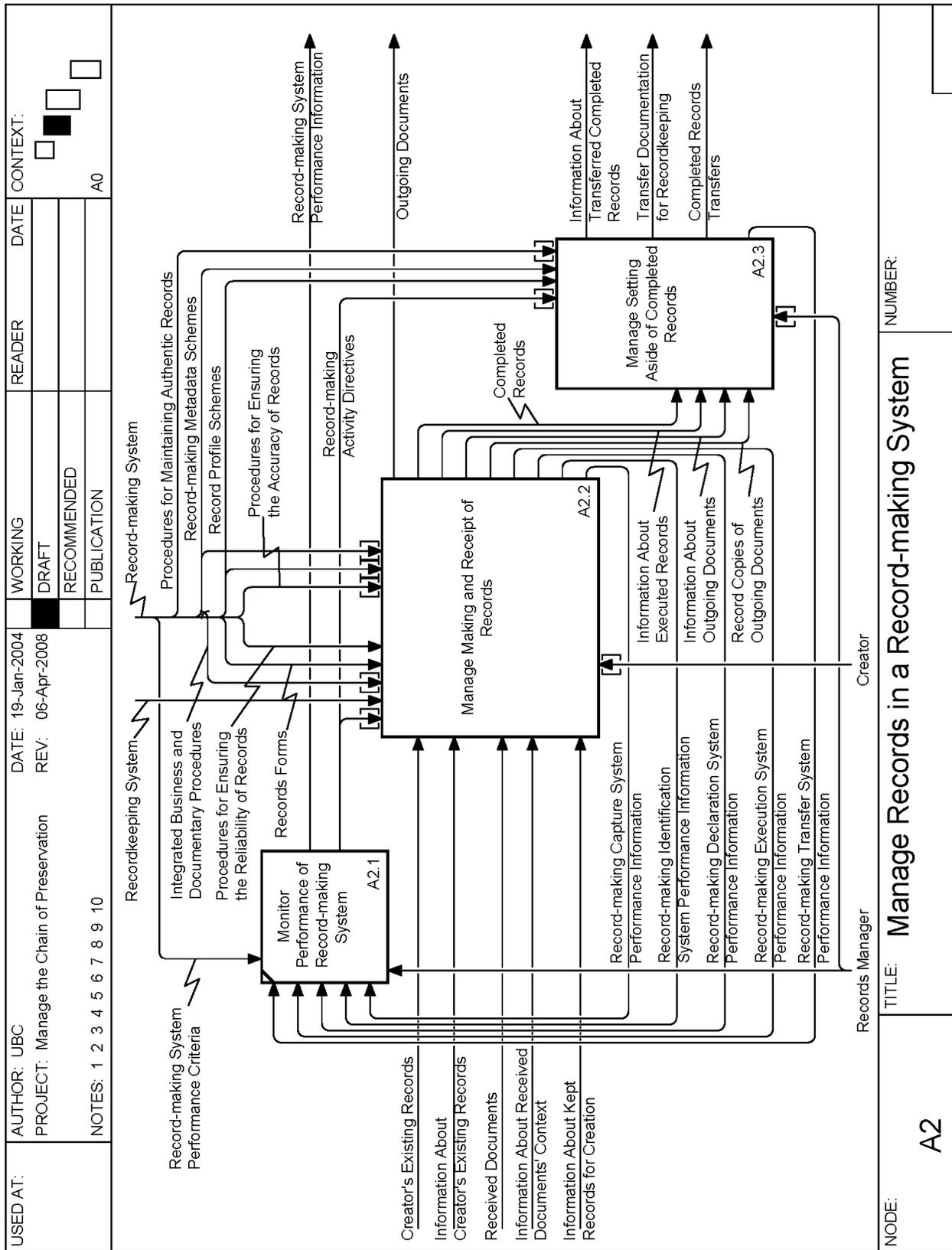


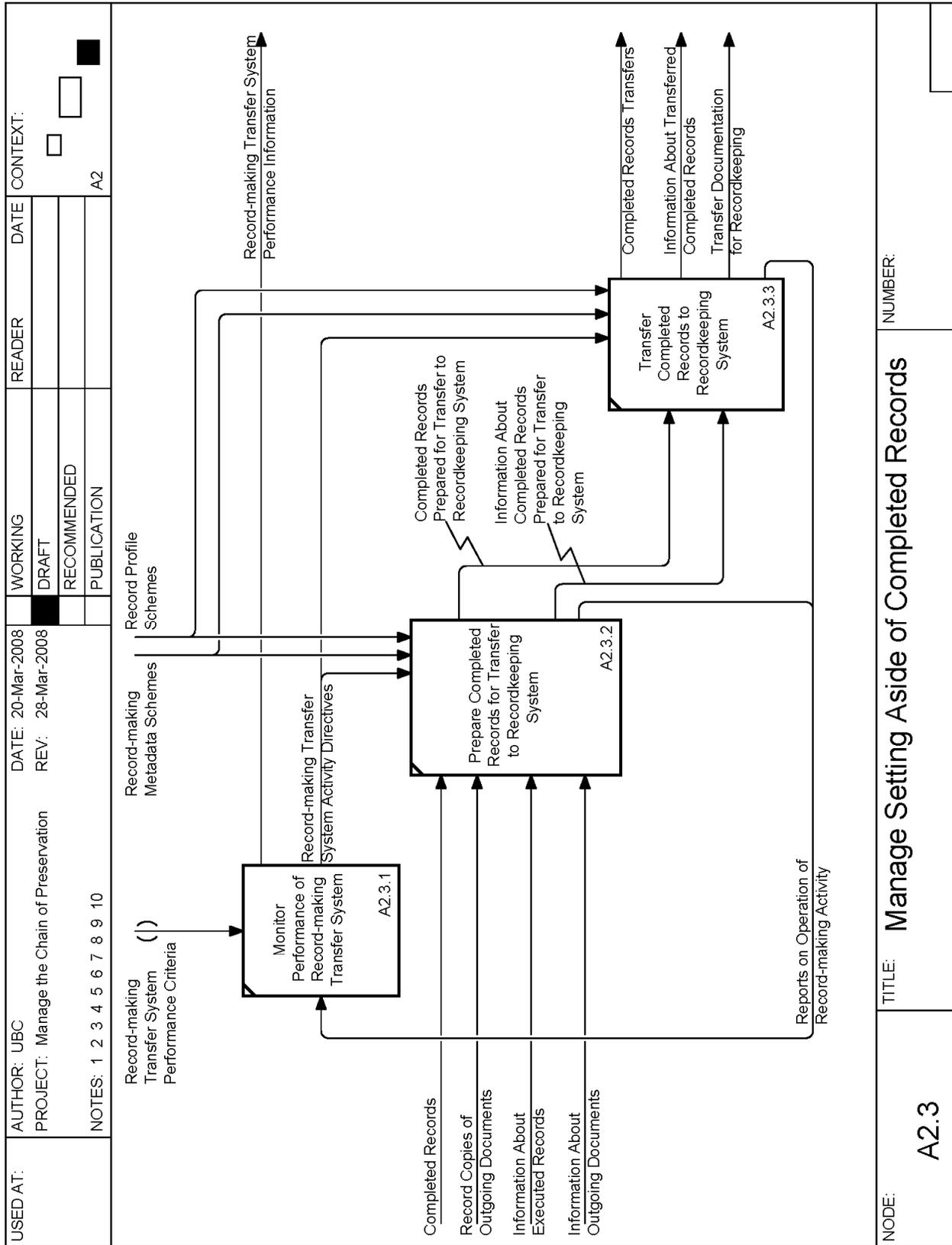


Establish Preservation System Functional Requirements

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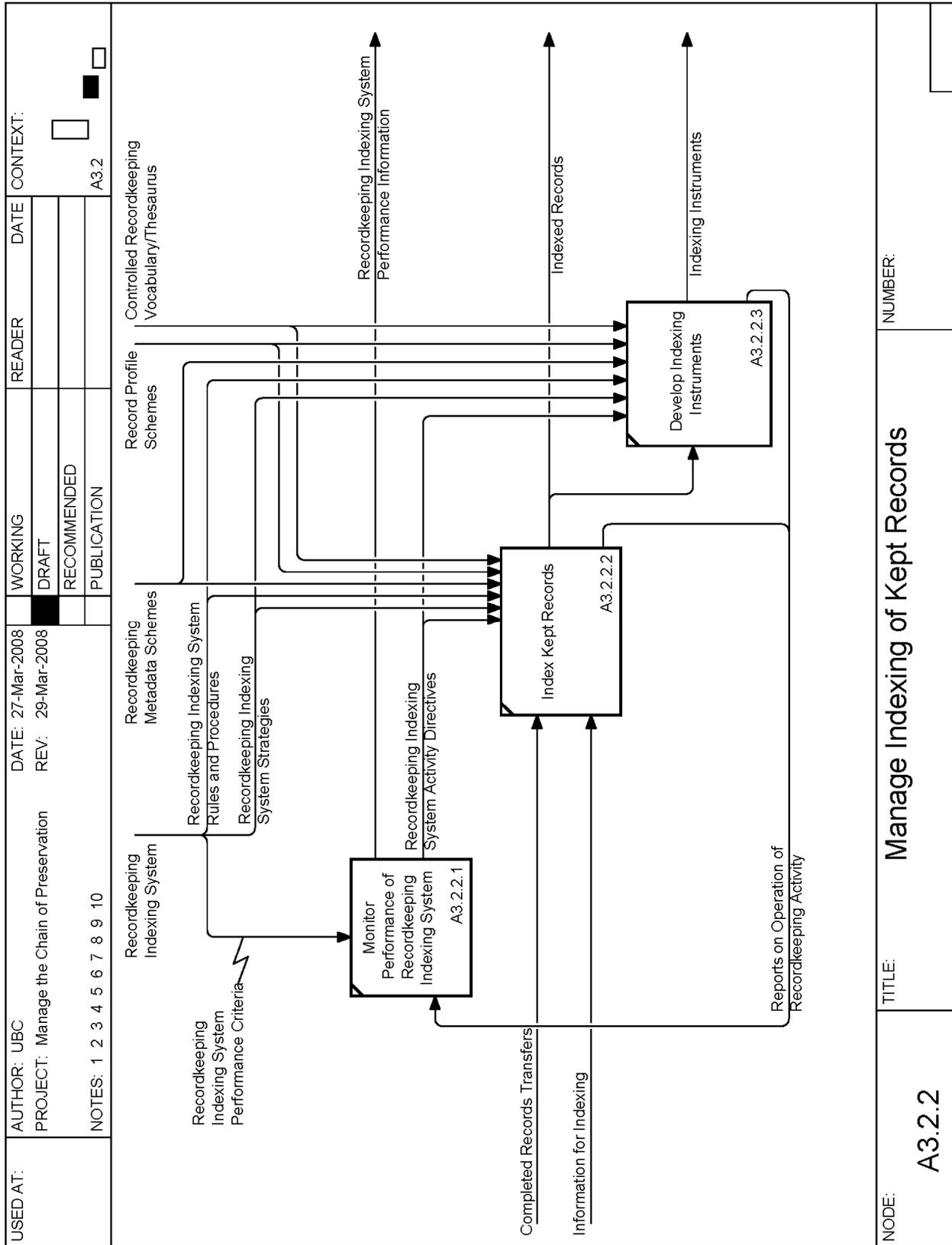


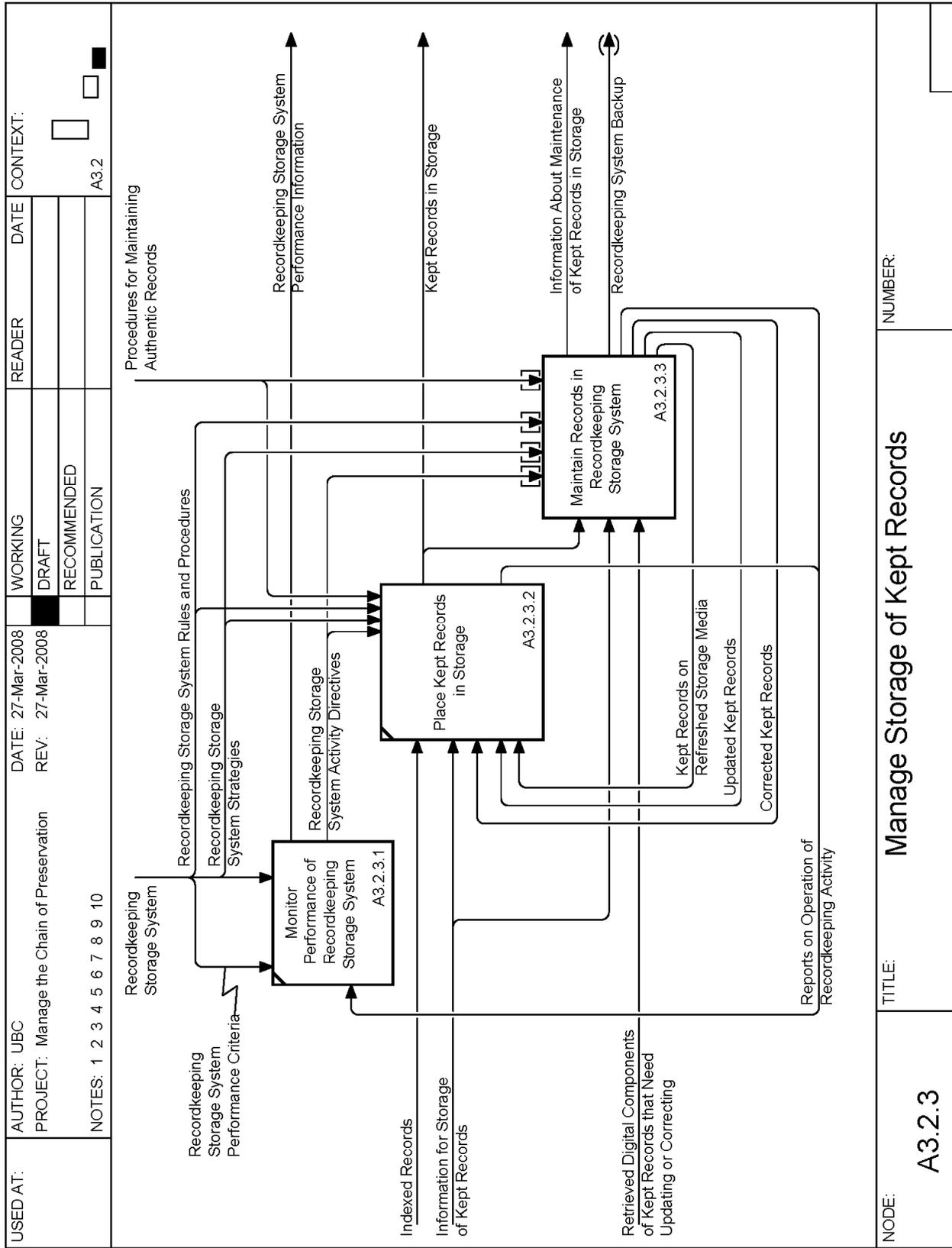


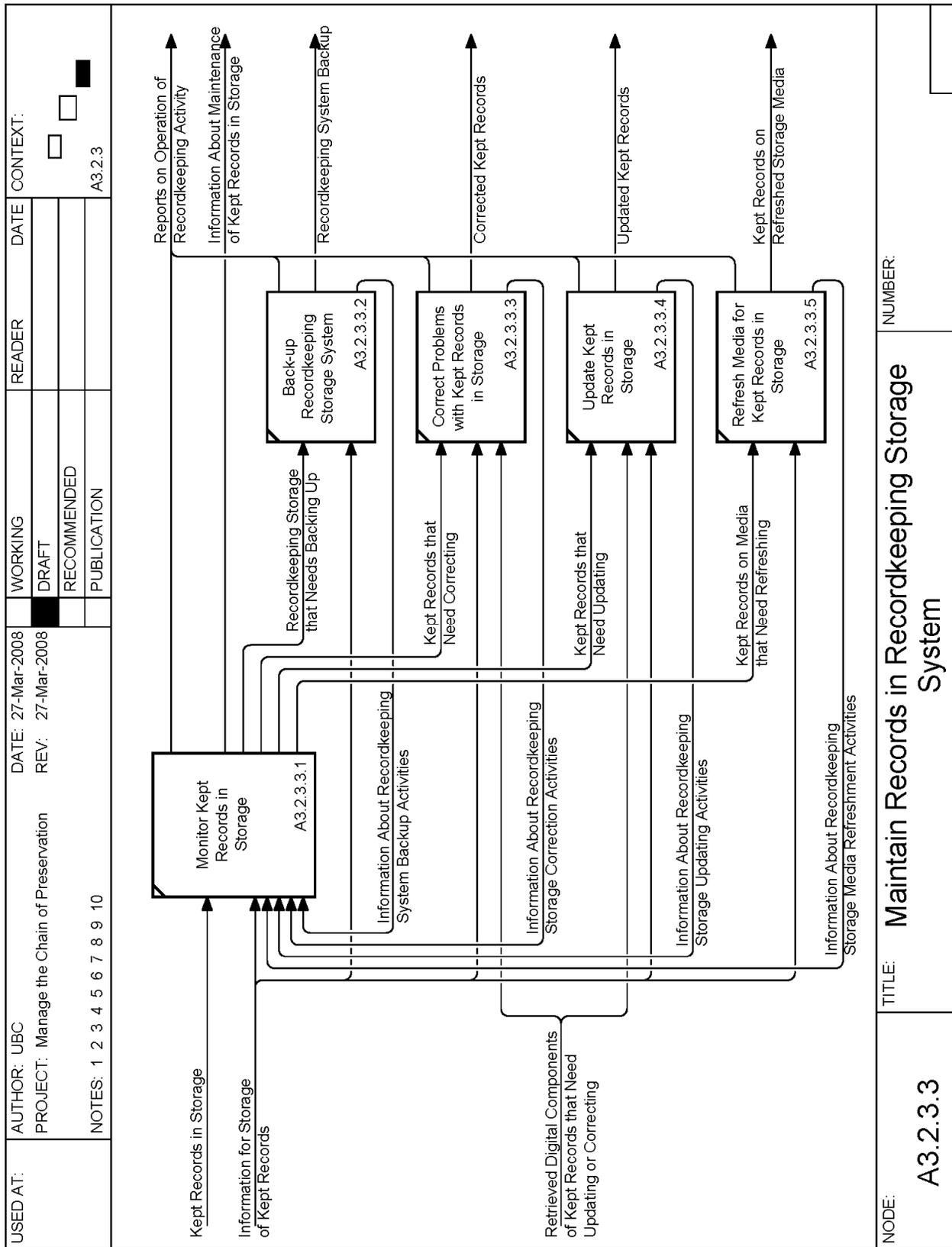
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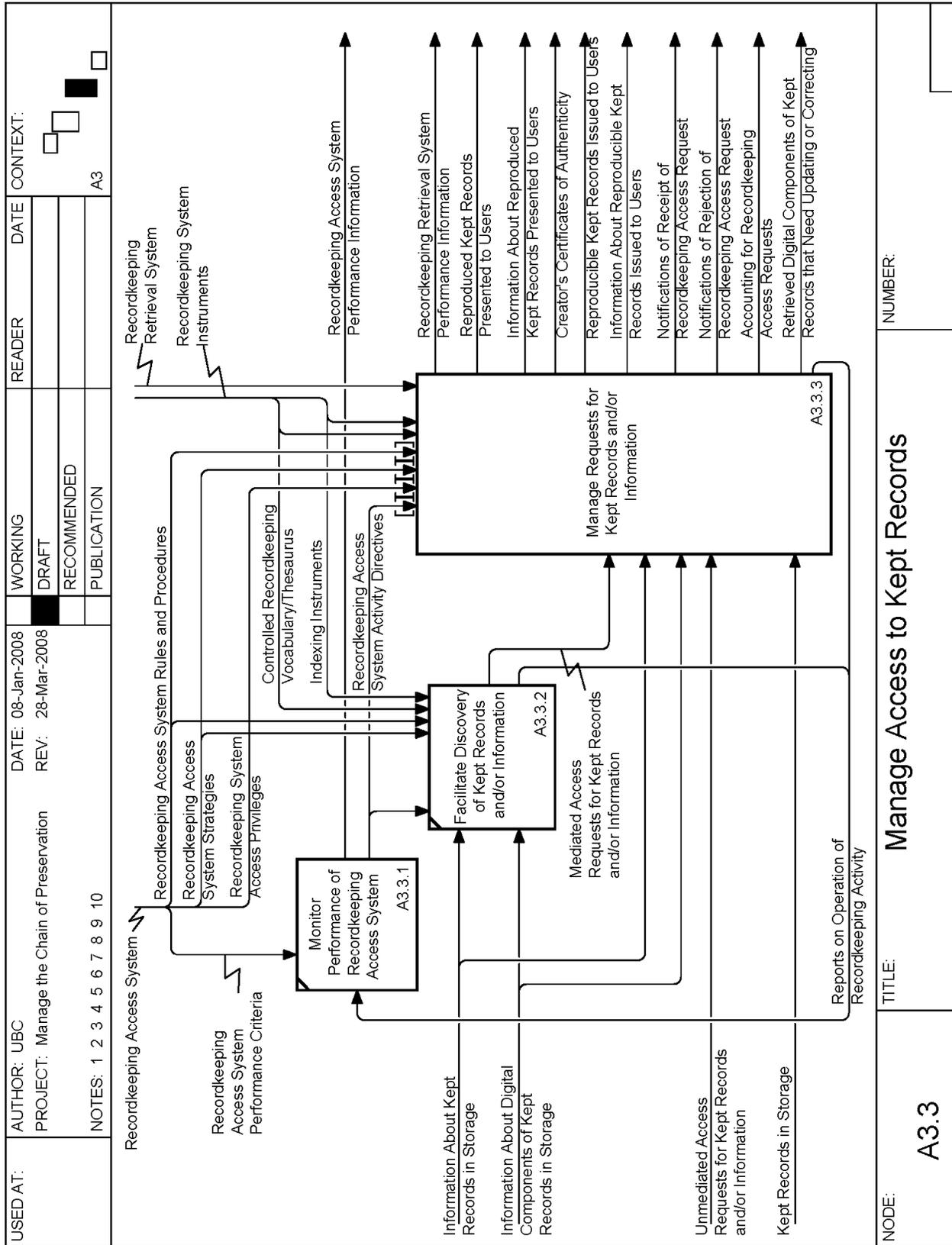
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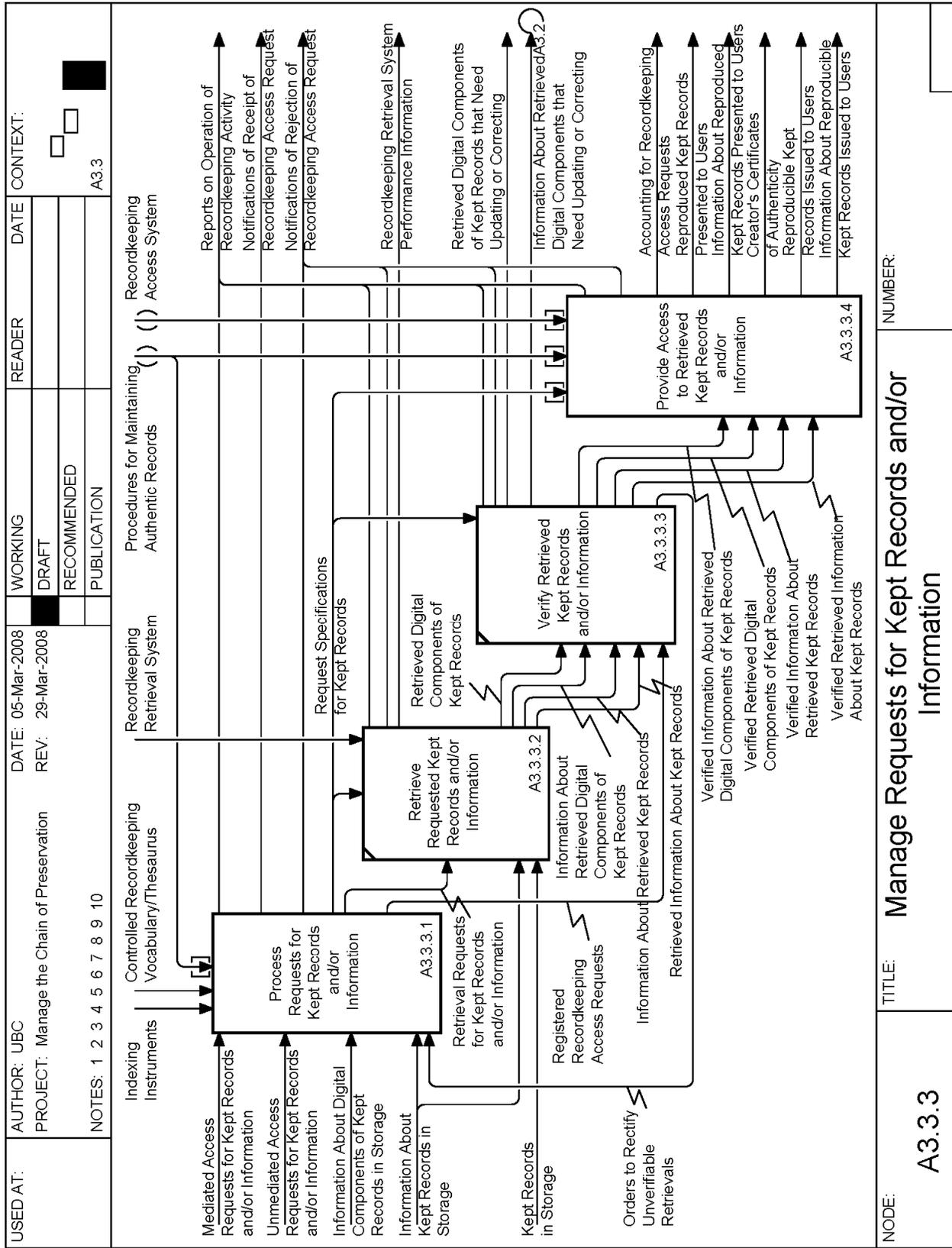
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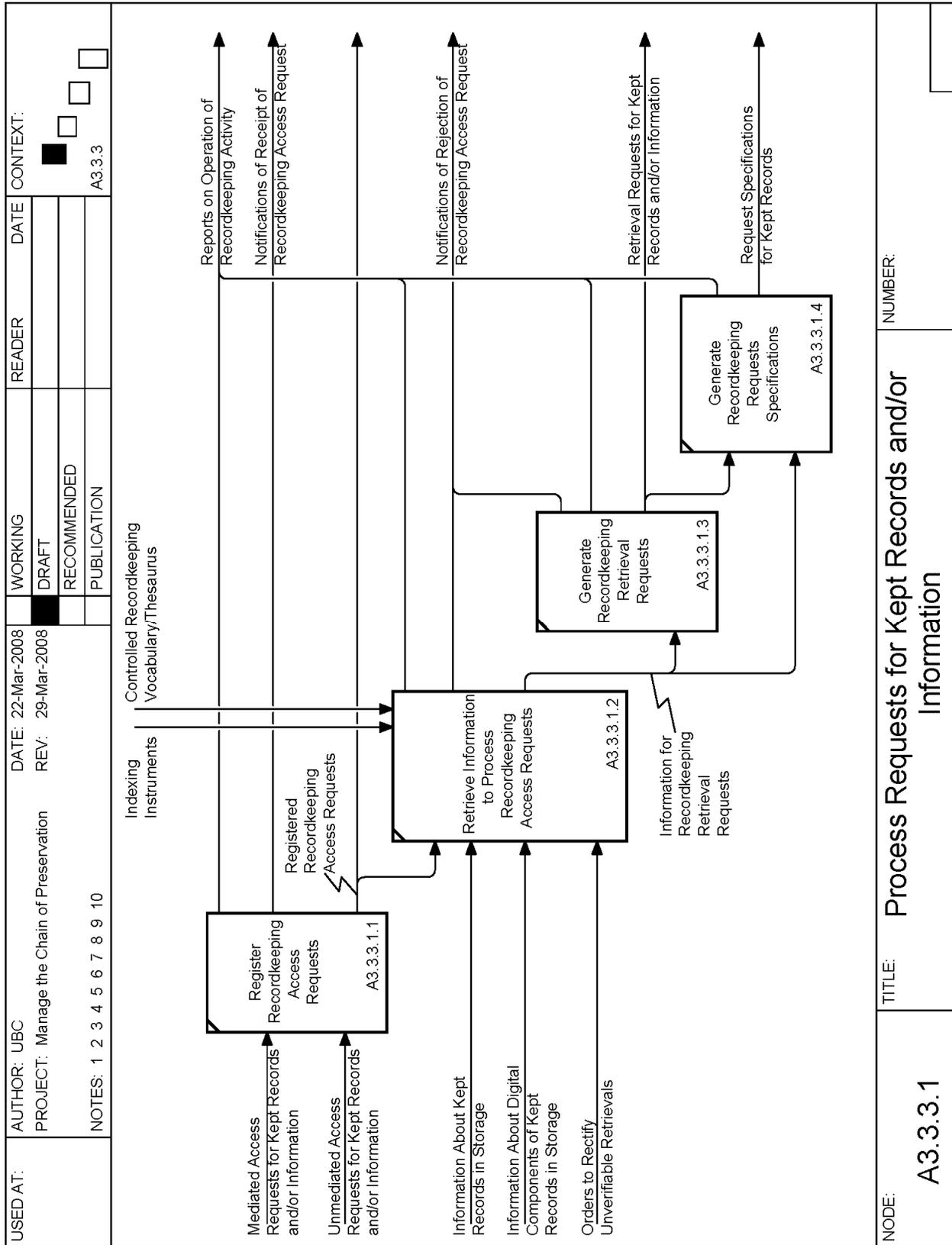


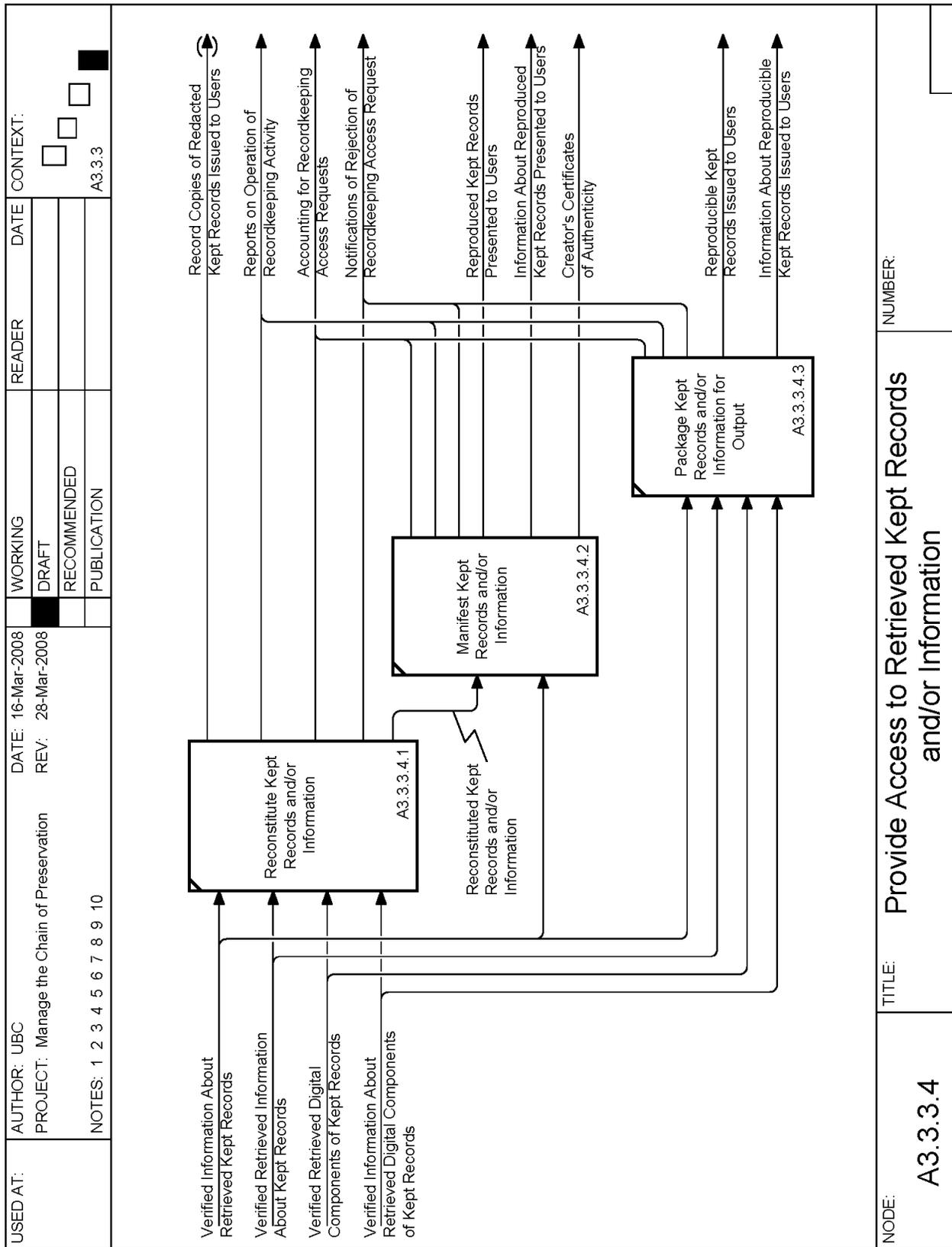


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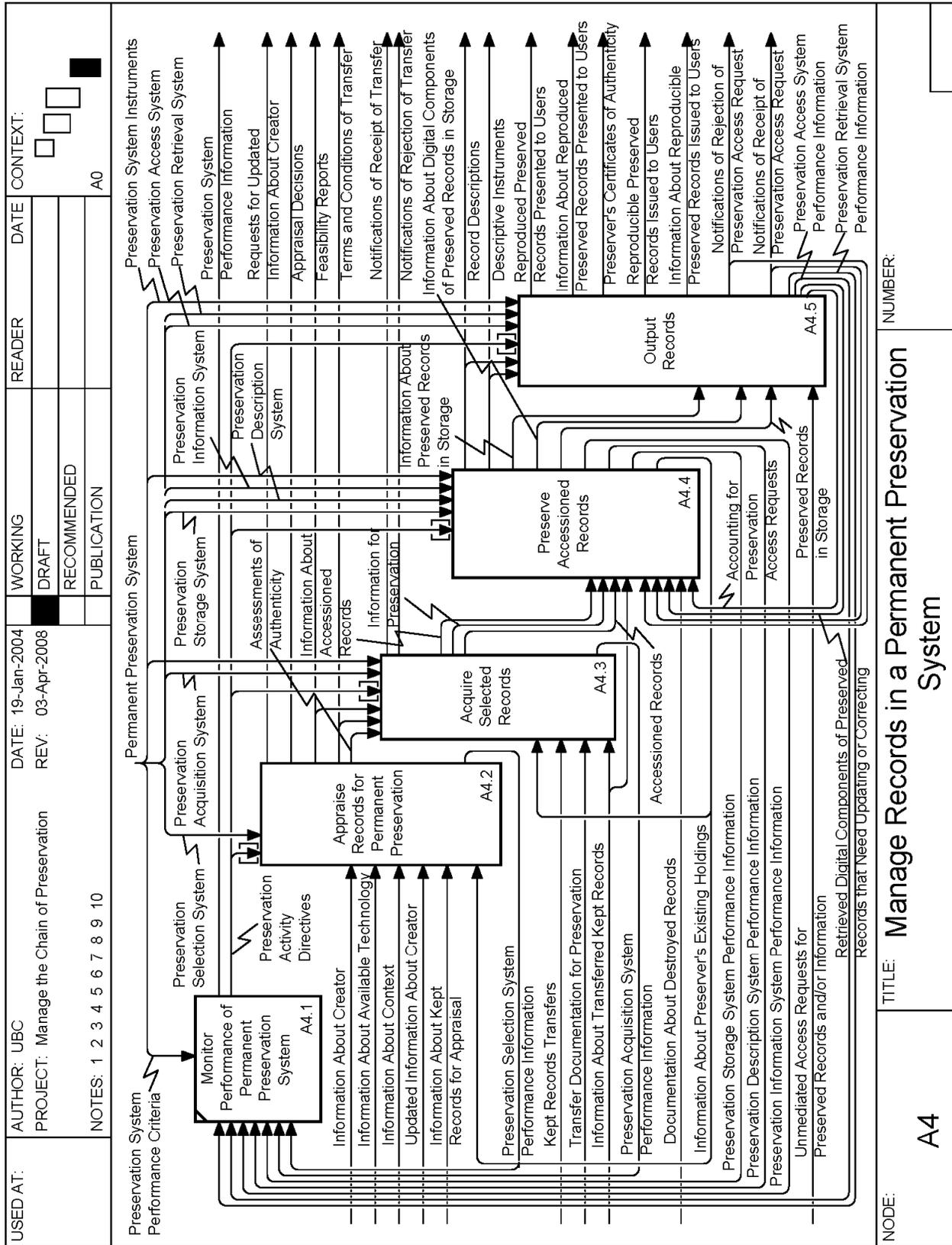
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Manage Requests for Kept Records and/or Information

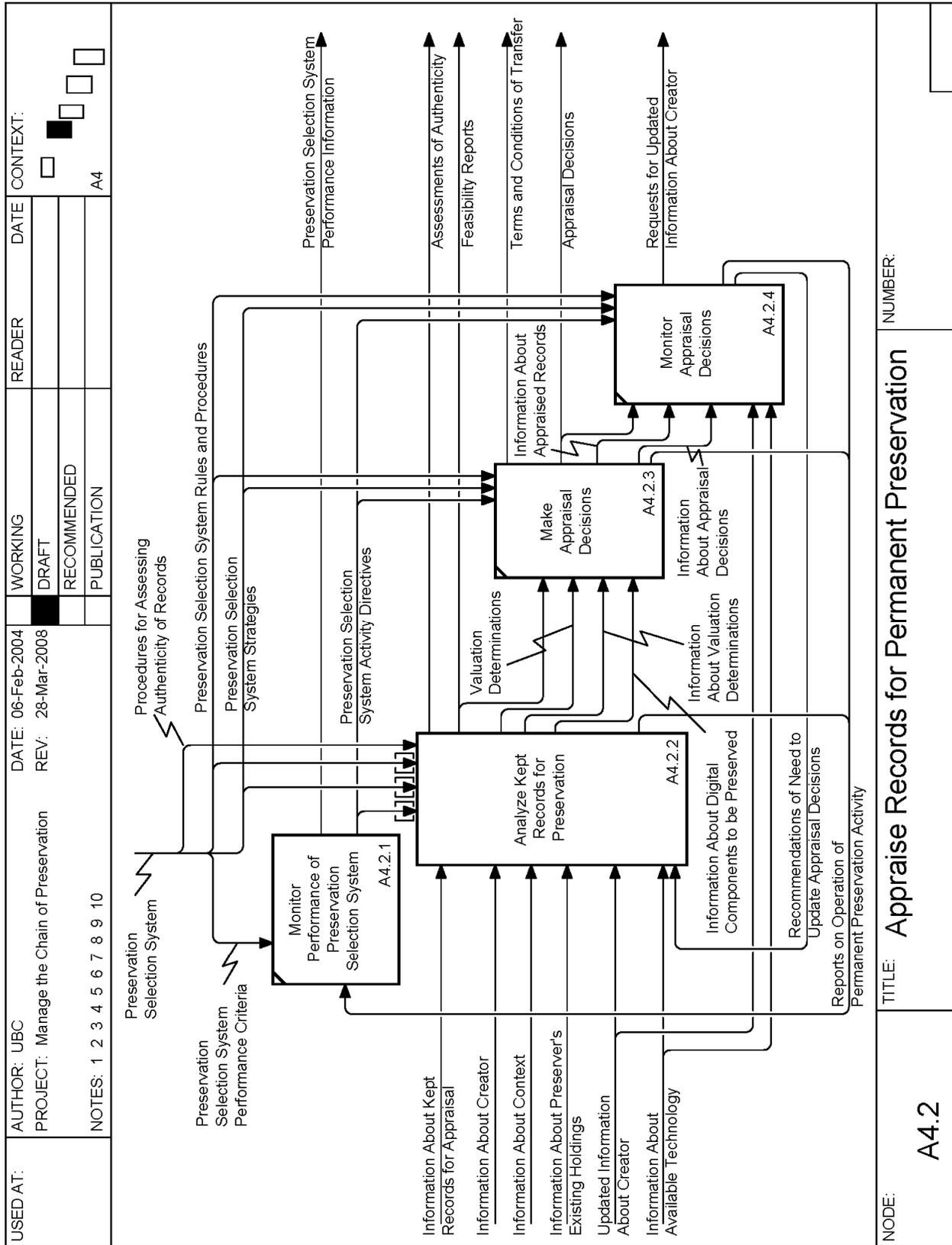
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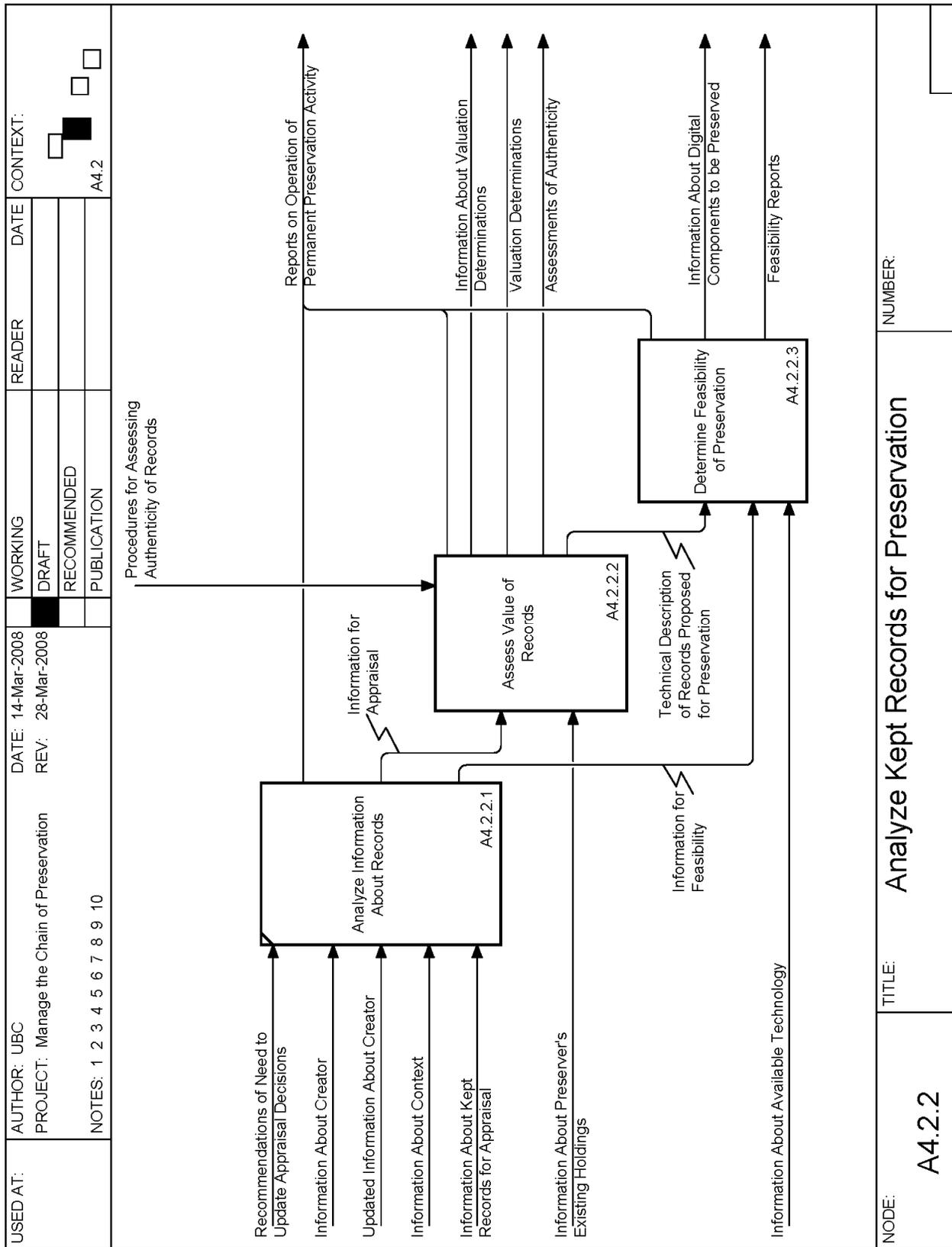


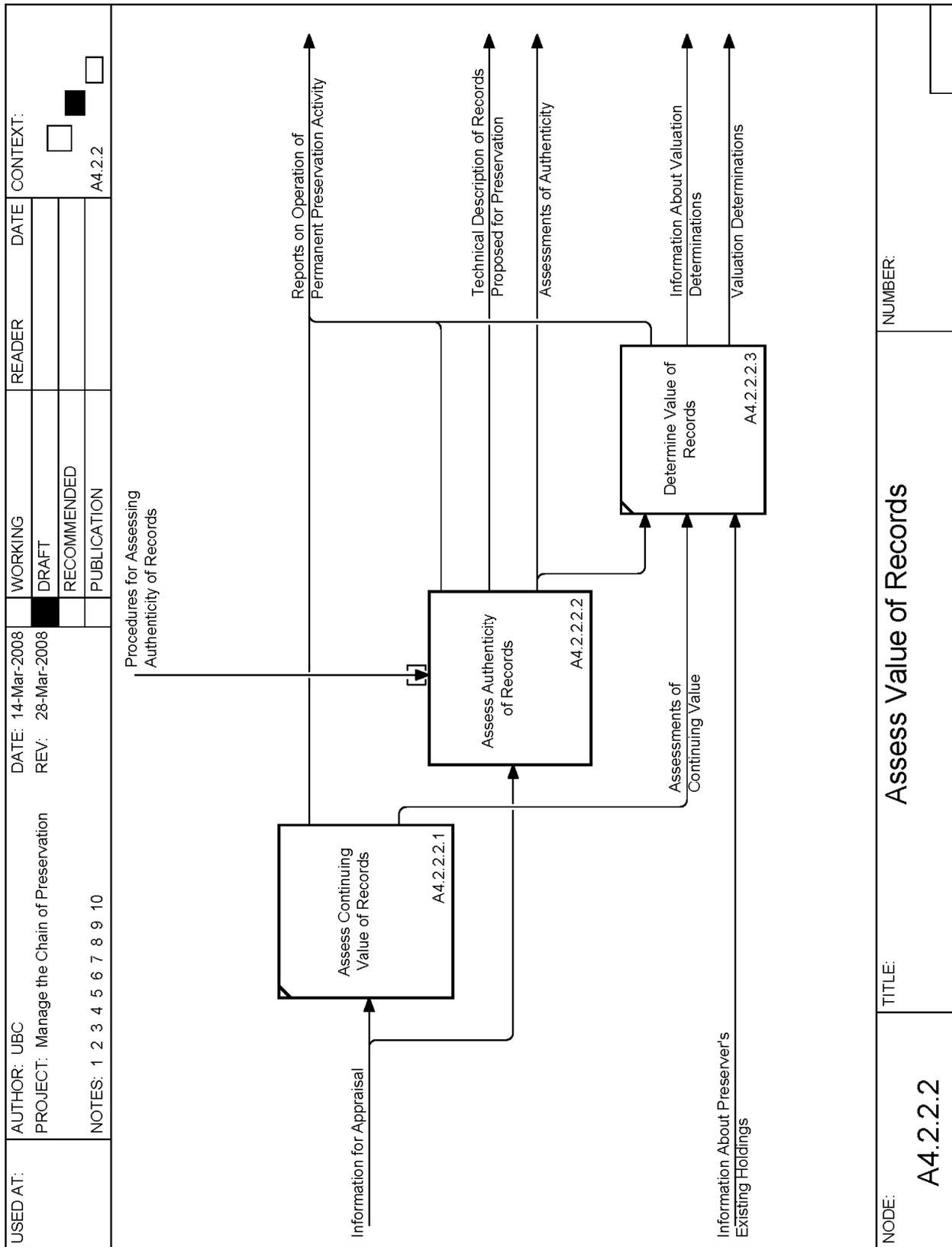


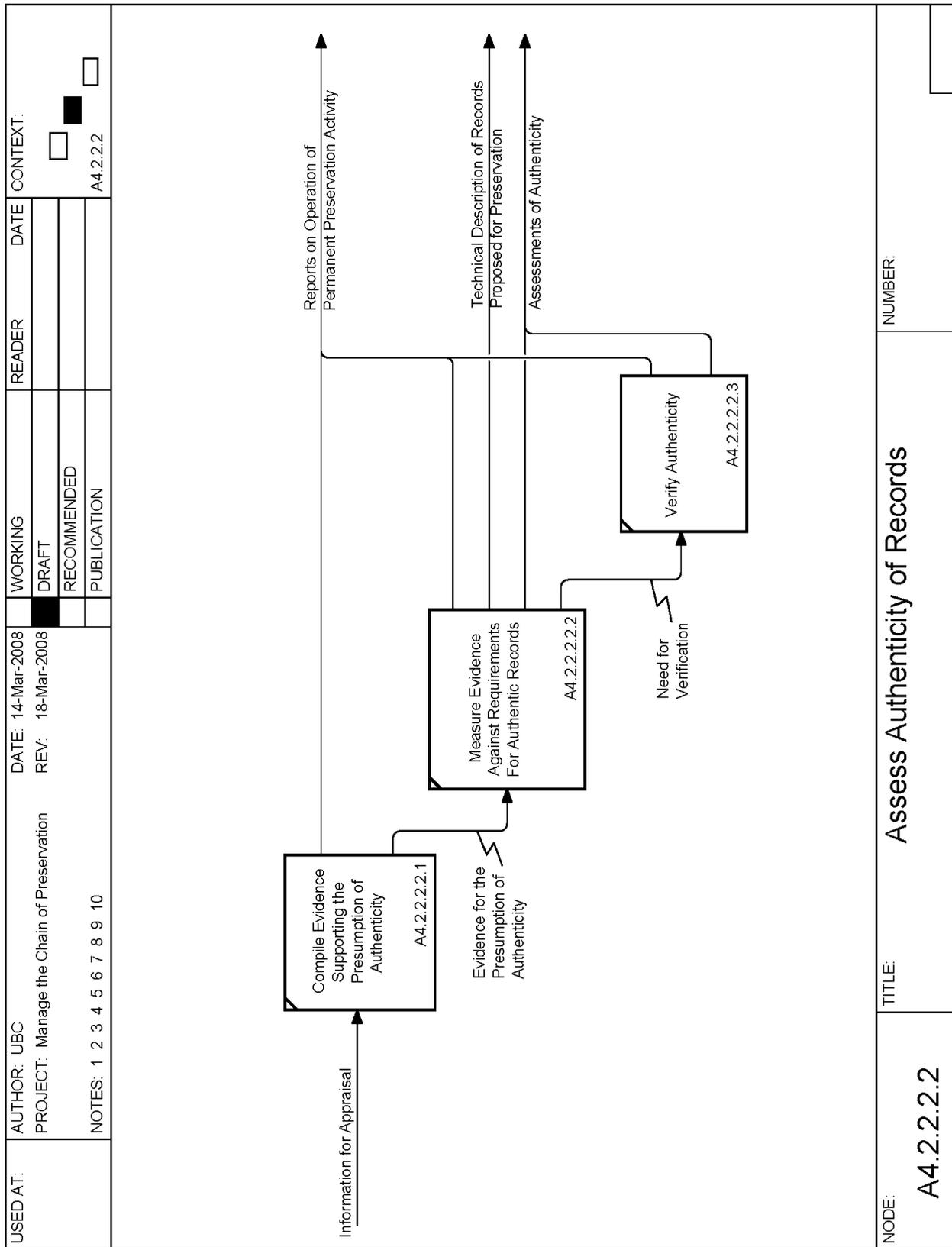
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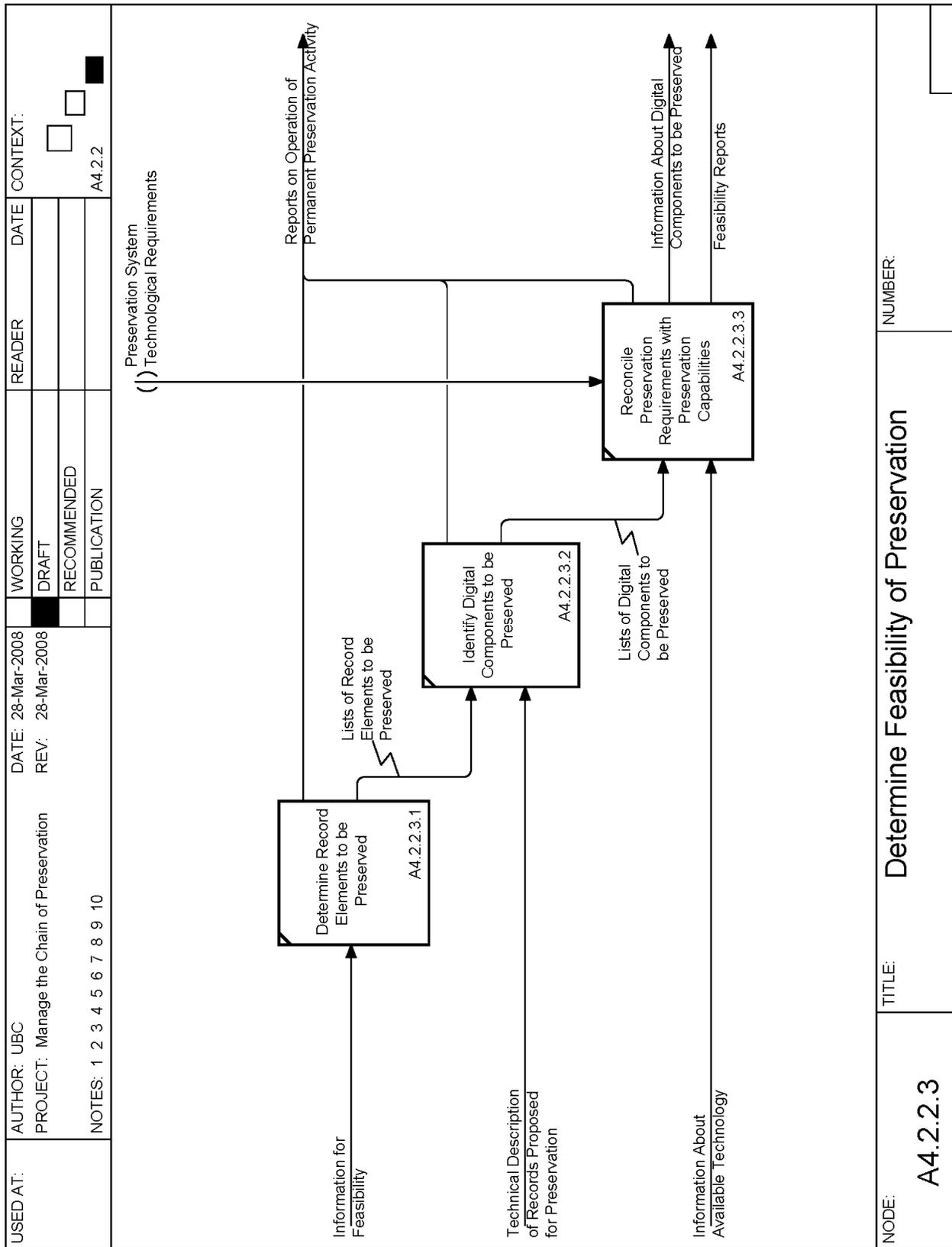
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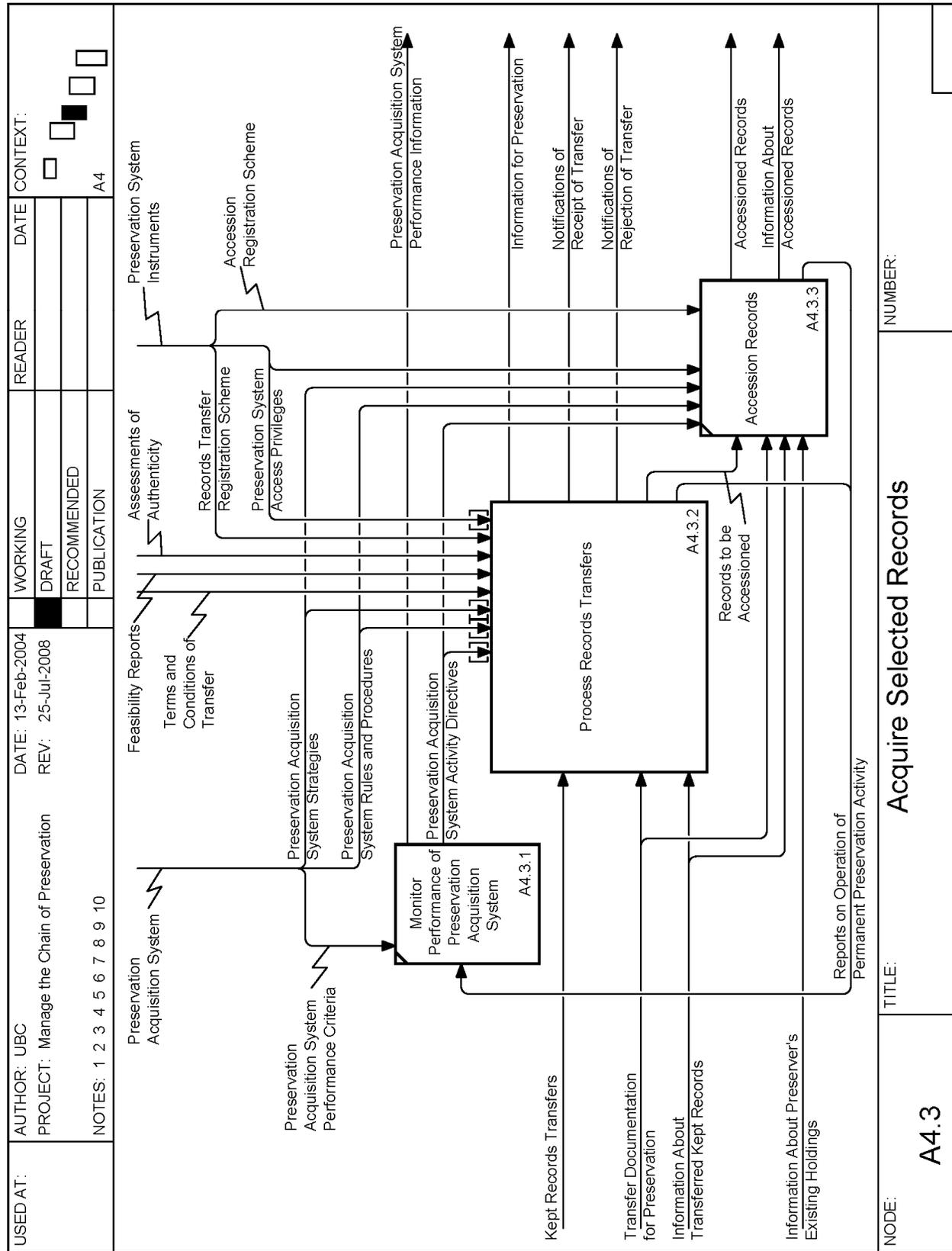
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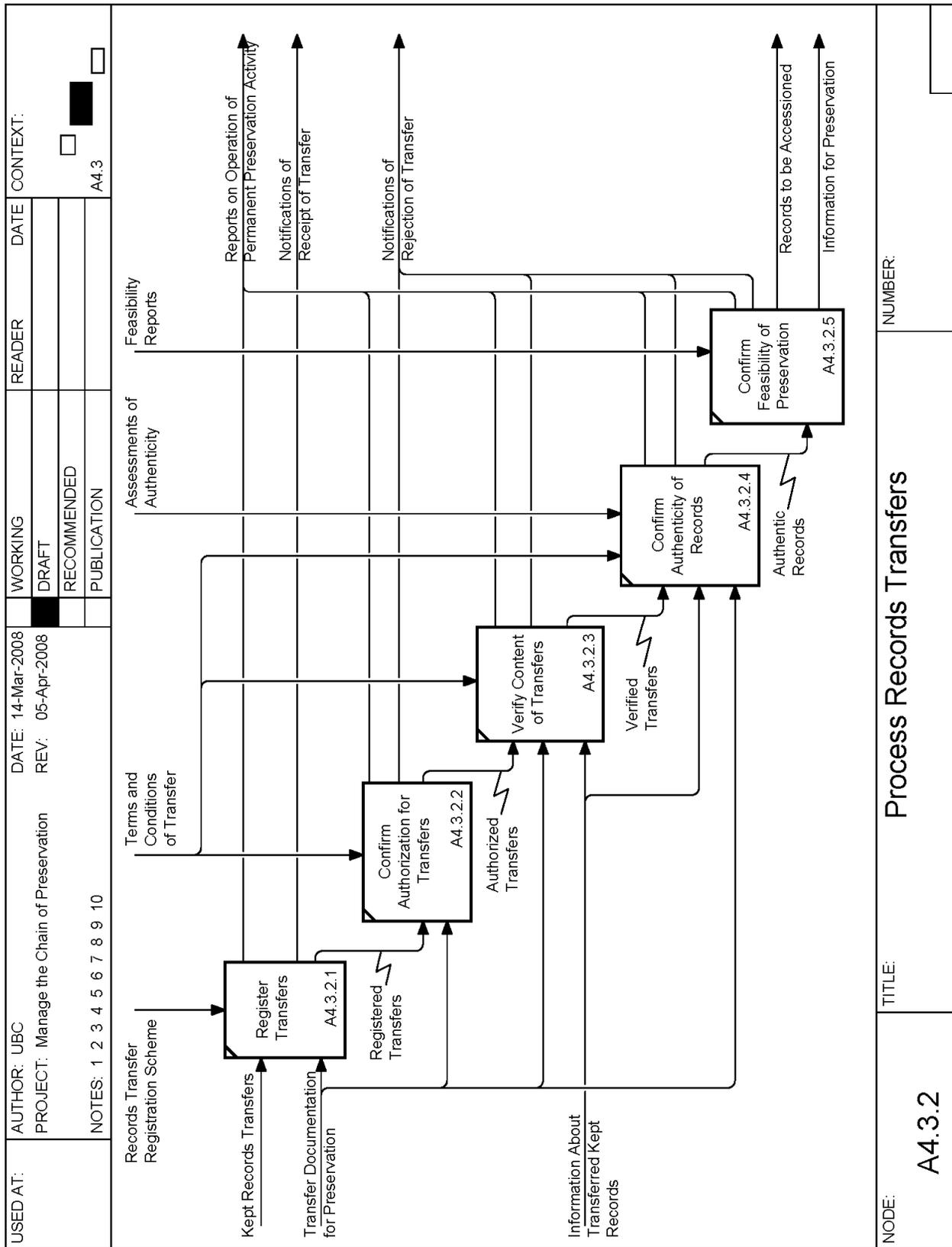








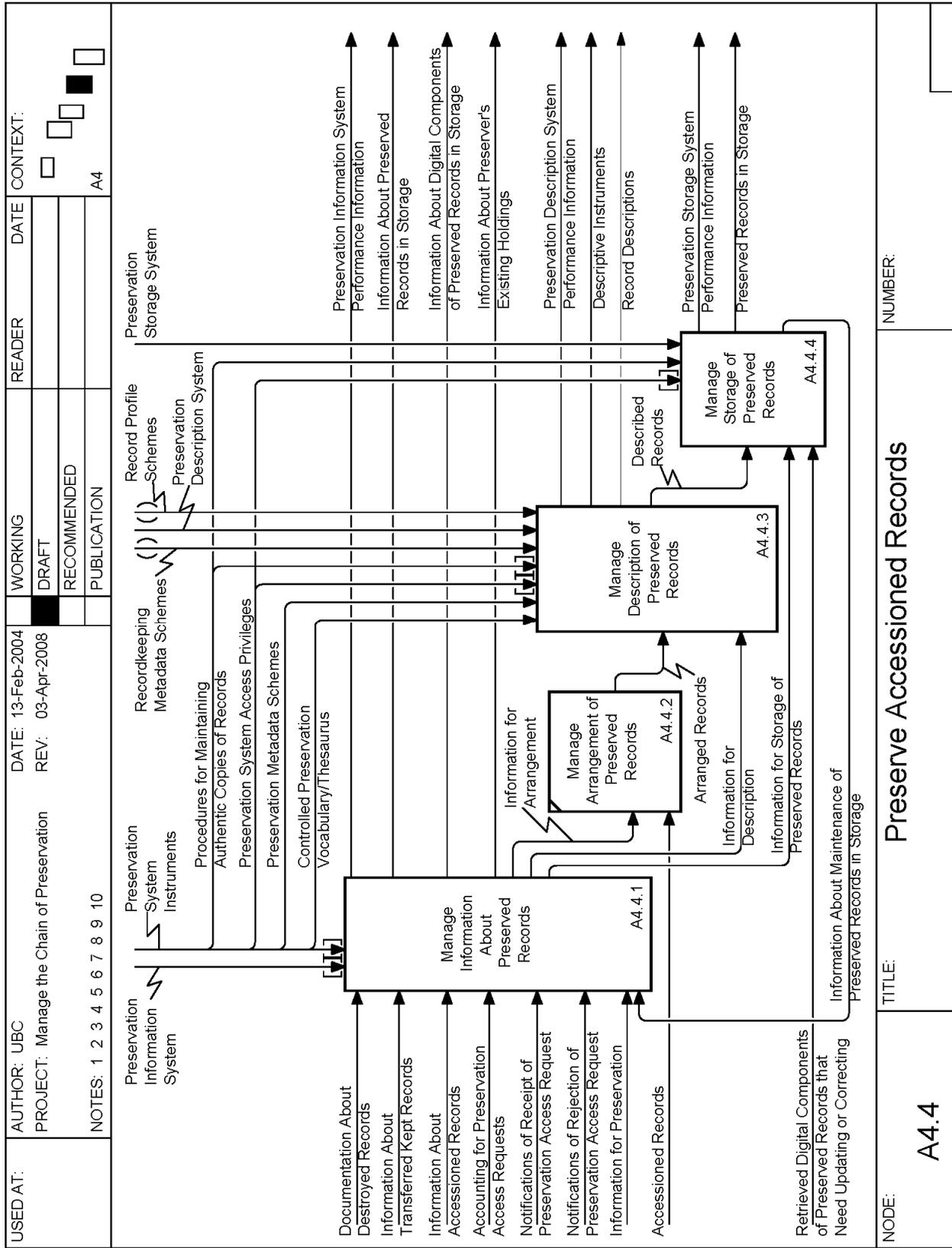
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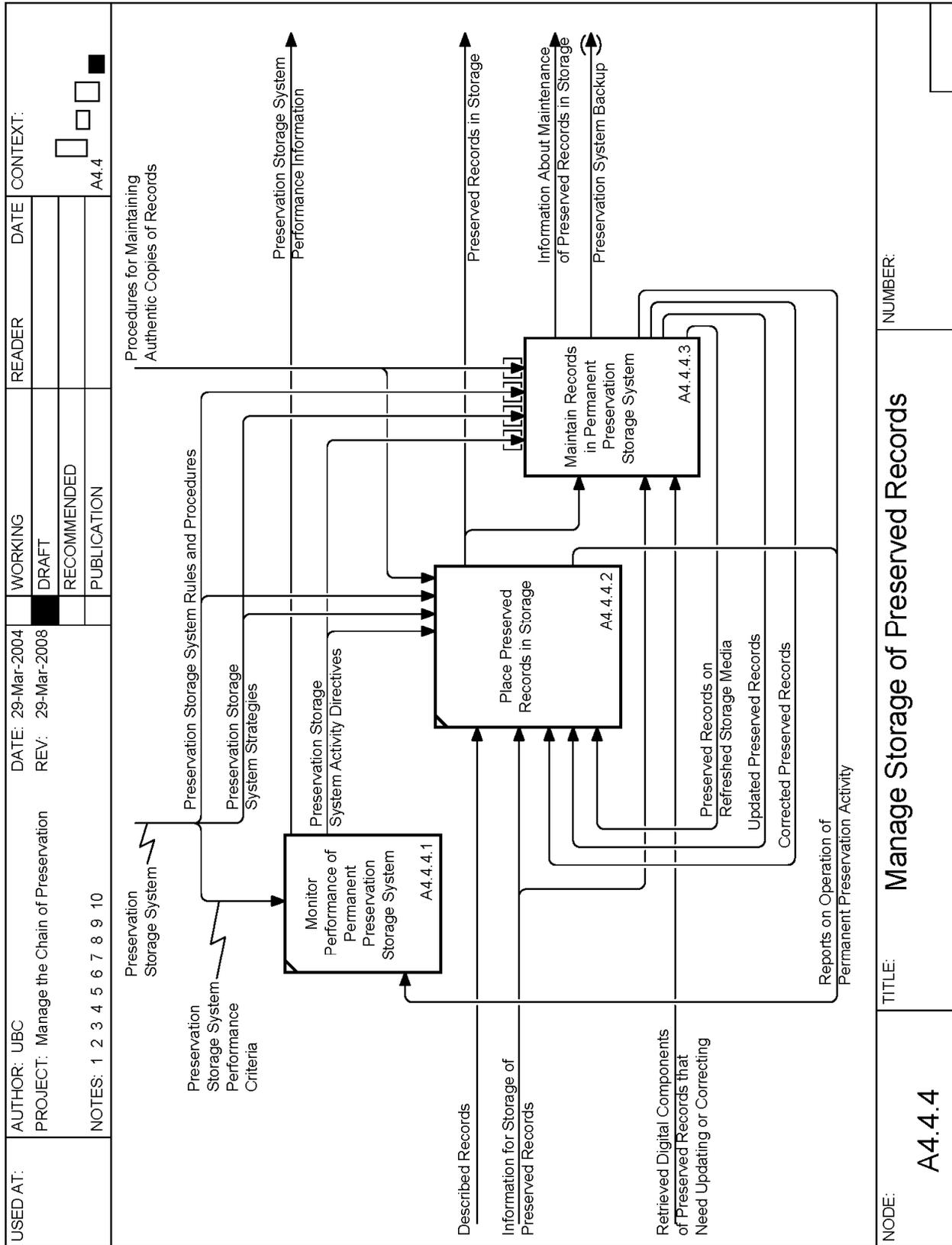


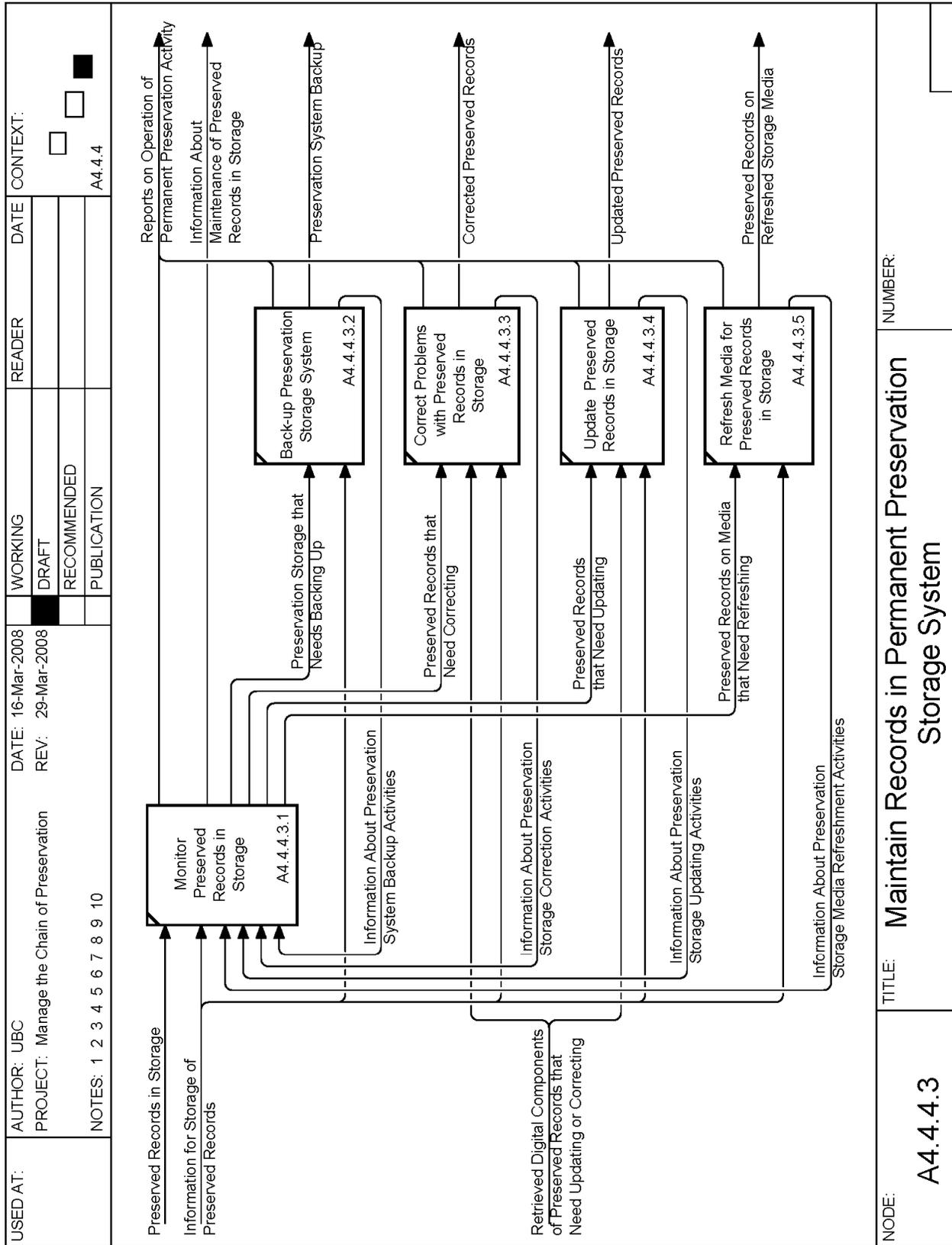
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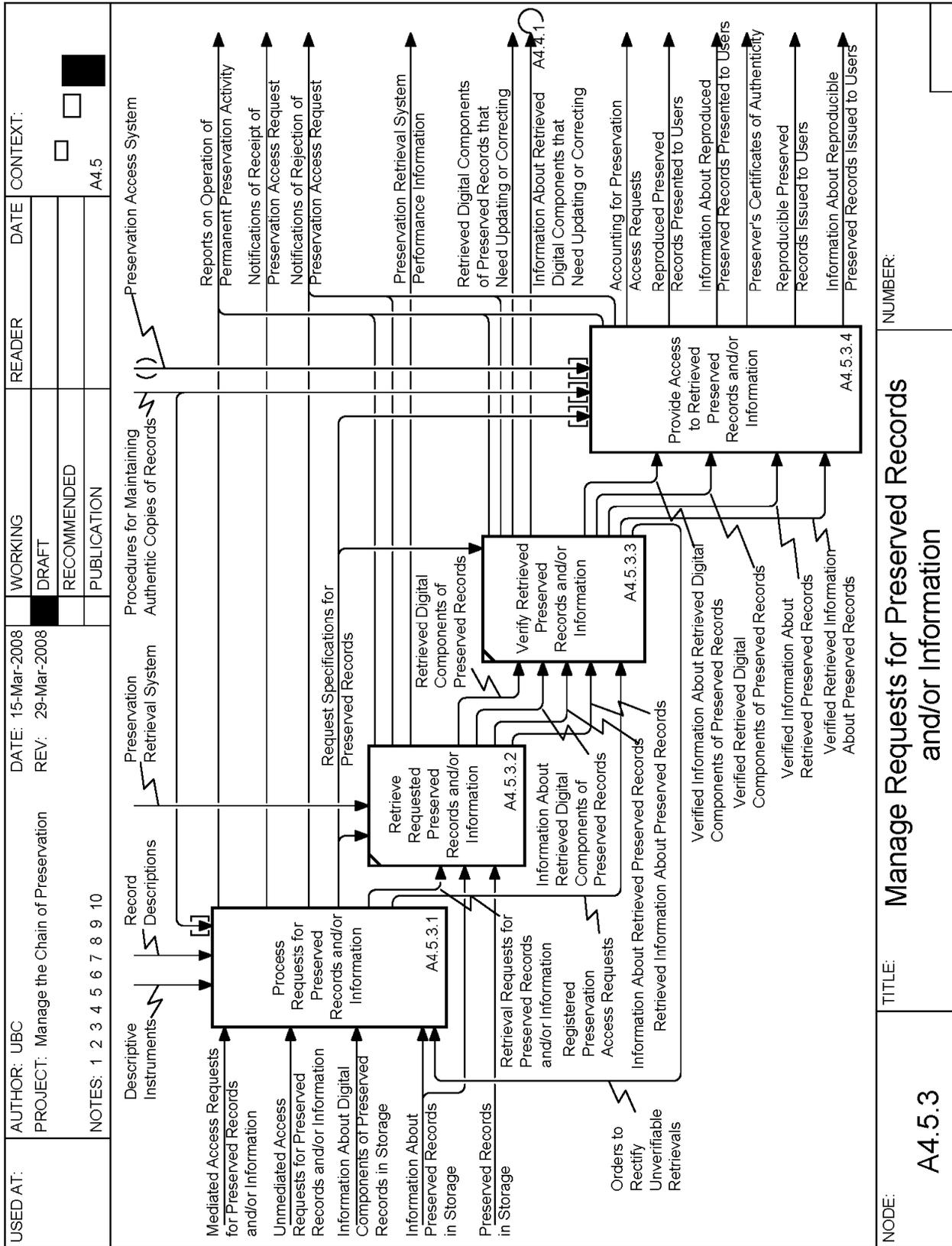
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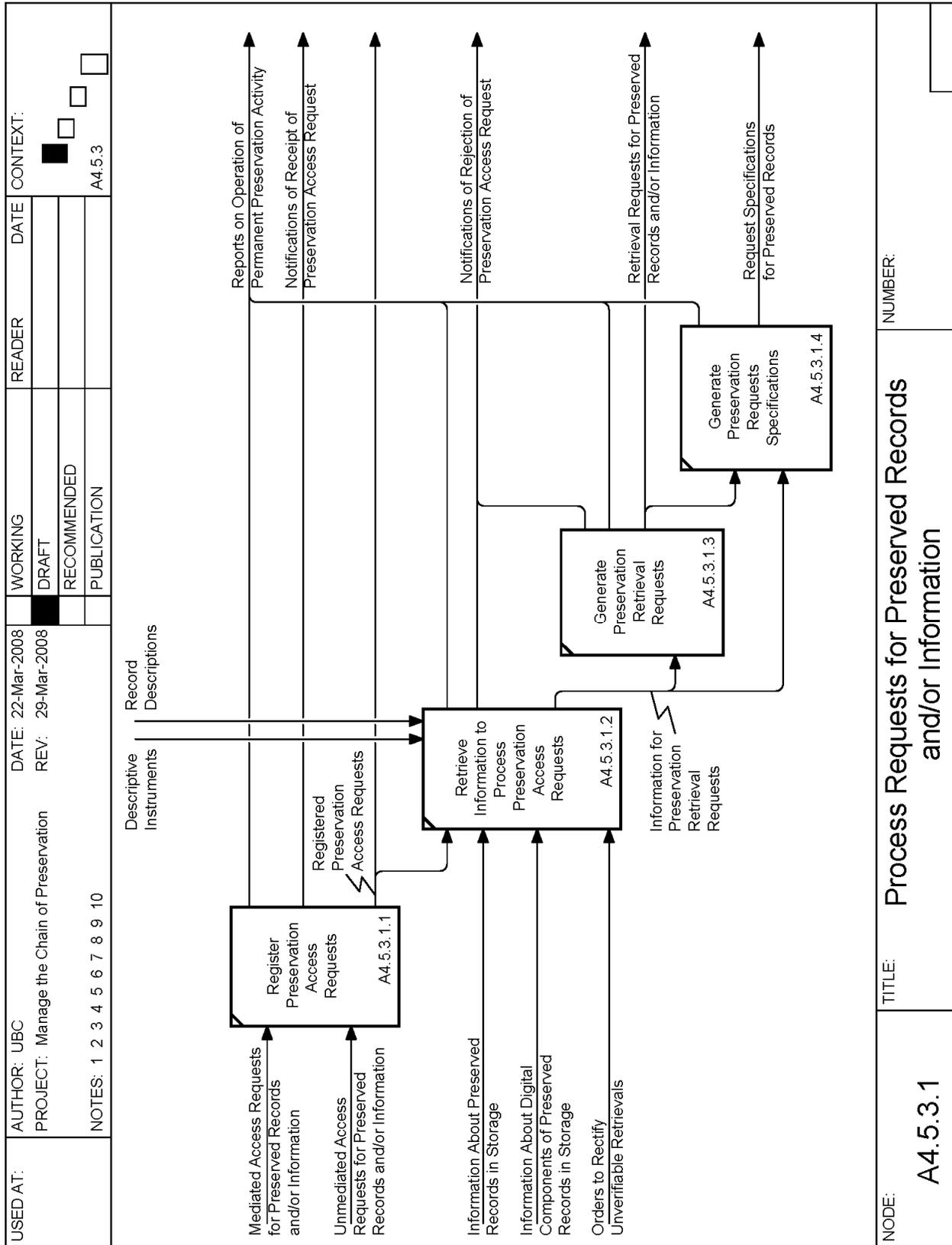
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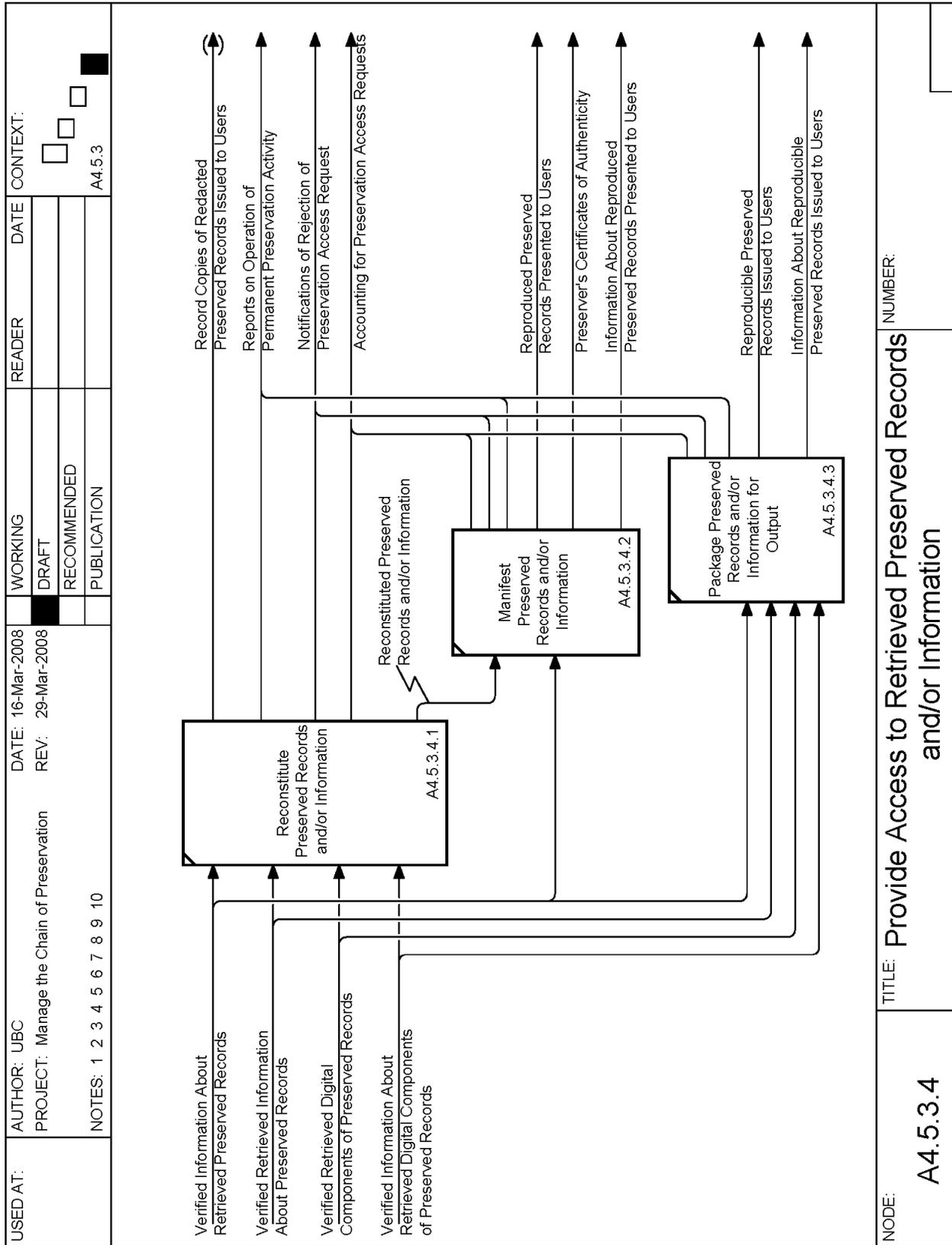




NUMBER:

TITLE: **Process Requests for Preserved Records and/or Information**

NODE: **A4.5.3.1**



Chain of Preservation Model Activity Definitions

A0, Manage Chain of Preservation

To design, implement and maintain a framework to control the records throughout the processes of creation, maintenance and use, disposition and preservation.

A1, Manage Framework for Chain of Preservation

To determine framework requirements, and design, implement and maintain a chain of preservation framework.

A1.1, Develop Management Framework

To analyze information about the records creator and its existing records and about the designated records preserver to identify the policies and requirements for the chain of preservation framework.

A1.1.1, Analyze Records Creator

To assess the information concerning the records creator's mission, organizational structure, activities and existing technological, financial and human resources, and records related needs and risks to help identify the requirements for the chain of preservation framework.

A1.1.2, Analyze Creator's Existing Records

To assess information about creator's existing records to determine framework requirements.

A1.1.3, Analyze Designated Records Preserver

To assess the information concerning the designated records preserver's mission, organizational structure, activities and existing technological, financial and human resources, and records preservation related needs and risks to help identify the requirements for the chain of preservation framework.

A1.1.4, Establish Management Policies

To develop and document management regime policies for establishing overall framework design requirements.

A1.1.5, Establish Design Requirements

To identify the rules guiding the chain of preservation framework on the basis of the analysis of the records creator and its existing records.

A1.2, Design Framework

To develop a record-making system design, recordkeeping system design and permanent preservation system design.

A1.2.1, Design Record-making System

To develop the record-making system's administrative infrastructure, determine functional requirements for the system, establish performance criteria for the system and develop the functional infrastructure design for the system.

A1.2.1.1, Develop Record-making System Administrative Infrastructure

To define, analyze, create and document a comprehensive, integrated set of administrative policies, strategies, rules and procedures, and instruments to support record-making activities and to enable the record-making system to meet its functional requirements.

A1.2.1.1.1, Develop Record-making System Policies

To determine and document the collective, high-level management principles that guide and control development, implementation and execution of record-making system activities.

A1.2.1.1.2, Develop Record-making System Strategies

To determine and document the authoritative objectives and methods governing the operation of the record-making system.

A1.2.1.1.3, Develop Record-making System Rules and Procedures

To determine and document the authoritative instructions governing the operation of the record-making system.

A1.2.1.1.4, Develop Record-making System Instruments

To define, analyze, create and document the various administrative tools that support record-making processes, such as metadata schemes and records forms.

A1.2.1.2, Establish Record-making System Functional Requirements

To develop and document comprehensive and integrated performance, monitoring and technological requirements for the record-making system.

A1.2.1.2.1, Determine Record-making System Performance Requirements

To identify the operational and administrative specifications for measuring the continuing ability of the record-making system to fulfil its purpose.

A1.2.1.2.2, Determine Record-making System Monitoring Requirements

To identify the operational and administrative conditions for providing ongoing assessment of the operation of the record-making system in relation to the established system performance requirements.

A1.2.1.2.3, Determine Record-making System Technological Requirements

To specify the hardware and software needed for the record-making system.

A1.2.1.3, Establish Record-making System Performance Criteria

To develop operational benchmarks or standards for operation of the record-making system, in relation to established requirements, against which the continuing performance and adequacy of an activity, function, process, sub-system or structure within the system can be measured.

A1.2.1.4, Design Record-making System Functional Infrastructure

To develop a comprehensive, integrated design for the record-making system and each of its documents and records capture, identification, declaration, execution and transfer sub-systems.

A1.2.2, Design Recordkeeping System

To develop the recordkeeping system's administrative infrastructure, determine functional requirements for the system, establish performance criteria for the system and develop the functional infrastructure design for the system.

A1.2.2.1, Develop Recordkeeping System Administrative Infrastructure

To define, analyze, create and document a comprehensive, integrated set of administrative policies, strategies, rules and procedures, and instruments to support recordkeeping activities and to enable the recordkeeping system to meet its functional requirements.

A1.2.2.1.1, Develop Recordkeeping System Policies

To determine and document the collective, high-level management principles that guide and control development, implementation and execution of recordkeeping system activities.

A1.2.2.1.2, Develop Recordkeeping System Strategies

To determine and document the authoritative objectives and methods governing the operation of the record-keeping system.

A1.2.2.1.3, Develop Recordkeeping System Rules and Procedures

To determine and document the authoritative instructions governing the operation of the recordkeeping system.

A1.2.2.1.4, Develop Recordkeeping System Instruments

To define, analyze, create and document the various administrative tools that support recordkeeping processes, such as metadata schemes, registration and classification schemes, a retention schedule and a controlled vocabulary.

A1.2.2.1.4.1, Develop Recordkeeping Schemes

To establish the metadata, registration and classification schemes used in the recordkeeping system.

A1.2.2.1.4.2, Develop Retention Schedule

To determine and document the disposition of each series and/or class of records.

A1.2.2.1.4.3, Develop Recordkeeping Indexes

To define, analyze, create and document the tools, such as a controlled vocabularies and thesauri, that facilitate efficient and effective location of information, records and/or records aggregates in the recordkeeping system suited to a particular inquiry or purpose.

A1.2.2.2, Establish Recordkeeping System Functional Requirements

To develop and document comprehensive and integrated performance, monitoring and technological requirements for the recordkeeping system.

A1.2.2.2.1, Determine Recordkeeping System Performance Requirements

To identify the operational and administrative specifications for measuring the continuing ability of the recordkeeping system to fulfil its purpose.

A1.2.2.2.2, Determine Recordkeeping System Monitoring Requirements

To identify the operational and administrative conditions for providing ongoing assessment of the operation of the recordkeeping system in relation to the established system performance requirements.

A1.2.2.2.3, Determine Recordkeeping System Technological Requirements

To specify the hardware and software needed for the recordkeeping system.

A1.2.2.3, Establish Recordkeeping System Performance Criteria

To develop operational benchmarks or standards for operation of the record-making system, in relation to established system performance, monitoring and technological requirements, against which the continuing performance and adequacy of an activity, function, process, sub-system or structure within the system can be measured.

A1.2.2.4, Design Recordkeeping System Functional Infrastructure

To develop a comprehensive, integrated design for the recordkeeping system and each of its records information, storage, retrieval, access and disposition sub-systems.

A1.2.3, Design Permanent Preservation System

To develop the permanent preservation system's administrative infrastructure, determine functional requirements for the system, establish performance criteria for the system and develop the functional infrastructure design for the system.

A1.2.3.1, Develop Preservation System Administrative Infrastructure

To define, analyze, create and document a comprehensive, integrated set of administrative policies, strategies, rules and procedures, and instruments to support preservation activities and to enable the permanent preservation system to meet its functional requirements.

A1.2.3.1.1, Develop Preservation System Policies

To determine and document the collective, high-level management principles that guide and control development, implementation and execution of permanent preservation system activities.

A1.2.3.1.2, Develop Preservation System Strategies

To determine and document the authoritative objectives and methods governing the operation of the permanent preservation system.

A1.2.3.1.3, Develop Preservation System Rules and Procedures

To determine and document the authoritative instructions governing the operation of the permanent preservation system.

A1.2.3.1.4, Develop Preservation System Instruments

To define, analyze, create and document the various administrative tools that support preservation processes, such as metadata schemes, transfer and accession registration schemes and a controlled vocabulary.

A1.2.3.2, Establish Preservation System Functional Requirements

To identify and document comprehensive and integrated performance, monitoring and technological requirements for the permanent preservation system.

A1.2.3.2.1, Determine Preservation System Performance Requirements

To identify the operational and administrative specifications for measuring the continuing ability of the permanent preservation system to fulfil its purpose.

A1.2.3.2.2, Determine Preservation System Monitoring Requirements

To identify the needs for providing ongoing assessment of the operation of the permanent preservation system in relation to the operational and administrative procedures and instruments developed for meeting these needs.

A1.2.3.2.3, Determine Preservation System Technological Requirements

To specify the hardware and software needed for the permanent preservation system.

A1.2.3.3, Establish Preservation System Performance Criteria

To develop operational benchmarks or standards for operation of the permanent preservation system, in relation to established system performance, monitoring and technological requirements, against which the continuing performance and adequacy of an activity, function, process, sub-system or structure within the system can be measured.

A1.2.3.4, Design Preservation System Functional Infrastructure

To develop a comprehensive, integrated design for the permanent preservation system and each of its records information, selection, acquisition, description, storage, retrieval and access sub-systems.

A1.3, Implement Framework

To acquire, test and activate all the components of the record-making, recordkeeping, and permanent preservation systems, and issue information about implementation problems.

A1.4, Maintain Framework

To assess information about the performance of the record-making, recordkeeping and permanent preservation systems and to make recommendations on the revision of the overall framework design and/or its constituent systems.

A2, Manage Records in a Record-making System

To provide overall control and co-ordination of activities in the record-making system, including the creation and setting aside of records, and monitoring of the performance of the record-making system.

A2.1, Monitor Performance of Record-making System

To assess the efficacy of the performance of the record-making system by analyzing performance reports on the operation of each of the record-making system's sub-systems and issue activity directives for record-making activities and information on the performance of the record-making system for use in continued maintenance of the chain of preservation framework.

A2.2, Manage Making and Receipt of Records

To provide overall control and co-ordination of document and record making and receipt activities, including the capture and identification of documents made or received by the creator and their subsequent declaration and execution as records.

A2.2.1, Make Documents

To compile digital information in a syntactic manner in accordance with the specifications of the creator's documentary forms, integrated business and documentary procedures and record-making access privileges.

A2.2.2, Capture Documents

To record and save (i.e., affix to a digital medium in a stable syntactic manner) particular instantiations of incoming external documents or internal documents made by the creator in the record-making system in accordance with the specifications of the creator's integrated business and documentary procedures and record-making access privileges.

A2.2.3, Identify Documents

To attach to each document identity metadata that convey the action in which the document participates and its immediate context.

A2.2.4, Declare Records

To intellectually set aside records by assigning classification codes from the classification scheme to made or received documents and adding these codes to the identifying metadata and by assigning to the documents registration numbers based on the registration scheme, and adding these numbers to the identifying metadata.

A2.2.5, Execute Records

To attach to each record metadata that convey information related to, and actions taken during the course of, the formal execution phase of the administrative procedure in which the record participates, which may also involve transmitting documents to external physical or juridical persons and making record copies of the sent documents.

A2.3, Manage Setting Aside of Completed Records

To provide overall control and co-ordination of the transfer of executed or completed records to the recordkeeping system by preparing the records for transfer, transferring the records and monitoring the performance of the record-making transfer system.

A2.3.1, Monitor Performance of Record-making Transfer System

To assess the efficacy of the performance of the record-making transfer system by analyzing reports on the operation of record-making activities, and issue activity directives for transfer activities and issue information on the performance of the record-making transfer system for use in continued maintenance of the record-making system.

A2.3.2, Prepare Completed Records for Transfer to Recordkeeping System

To attach to completed records integrity and related metadata that convey information related to, and actions taken during the course of, managing the records for records management purposes prior to setting them aside in the recordkeeping system; compile information about the records that is needed to meet all transfer information requirements; and ensure that the records are in the proper format for transfer to the recordkeeping system as prescribed by recordkeeping system rules and procedures and technological requirements.

A2.3.3, Transfer Completed Records to Recordkeeping System

To send or transmit completed records prepared for transfer to the office responsible for the recordkeeping function with the accompanying documentation necessary for recordkeeping.

A3, Manage Records in a Recordkeeping System

To provide overall control and co-ordination of activities in the recordkeeping system, including records storage, retrieval and access, disposition, and monitoring of the performance of the recordkeeping system.

A3.1, Monitor Performance of Recordkeeping System

To assess the efficacy of the performance of the recordkeeping system by analyzing performance reports on the operation of recordkeeping sub-system activities, and issue activity directives for recordkeeping activities and information on the performance of the recordkeeping system for use in continued maintenance of the chain of preservation framework.

A3.2, Manage Maintenance of Kept Records

To provide overall control and co-ordination of the recordkeeping storage system and the records stored in the system by managing information about kept records and their digital components, placing the records in storage, maintaining the digital components and monitoring the performance of the storage system.

A3.2.1, Manage Information About Kept Records

To compile information about records in the recordkeeping system and about records maintenance activities and to provide overall control and co-ordination of that information for use in records appraisal activities by the preserver and in records indexing, storage, access and disposition activities by the creator.

A3.2.2, Manage Indexing of Kept Records

To provide overall control and co-ordination of records indexing activities, including monitoring the indexing system, indexing kept records and developing indexing instruments to help facilitate records discovery and retrieval.

A3.2.2.1, Monitor Performance of Recordkeeping Indexing System

To assess the efficacy of the performance of the recordkeeping indexing system by analyzing reports on the operation of recordkeeping activities, and issue activity directives for indexing activities and information on the performance of the indexing system for use in continued maintenance of the recordkeeping system.

A3.2.2.2, Index Kept Records

To establish and record access points for kept records within the context of a controlled recordkeeping vocabulary applied according to recordkeeping indexing system rules, procedures and strategies.

A3.2.2.3, Develop Indexing Instruments

To prepare tools that facilitate discovery and retrieval of the records in the recordkeeping system, such as guides, inventories and indexes.

A3.2.3, Manage Storage of Kept Records

To provide overall control and co-ordination of the recordkeeping storage system and the records stored in the system by placing the records in storage, maintaining their digital components and monitoring the performance of the storage system.

A3.2.3.1, Monitor Performance of Recordkeeping Storage System

To assess the efficacy of the performance of the recordkeeping storage system by analyzing reports on the operation of recordkeeping activities, and issue activity directives for storage activities and information on the performance of the recordkeeping storage system for use in continued maintenance of the recordkeeping system.

A3.2.3.2, Place Kept Records in Storage

To place the digital components of kept records and their metadata into storage in accordance with the procedures for maintaining authentic records and the actions prescribed by the recordkeeping storage system strategies, rules and procedures and activity directives.

A3.2.3.3, Maintain Records in Recordkeeping Storage System

To monitor the storage of kept records and their digital components and metadata, periodically back-up the recordkeeping storage system and, as necessary, correct problems with and update the digital components, and/or refresh storage media to ensure the records in the system remain accessible, legible and intelligible over time.

A3.2.3.3.1, Monitor Kept Records in Storage

To keep track of the condition and maintenance requirements of kept records and their digital components--more specifically, their digital components and metadata--and the media on which they are stored in the recordkeeping storage system to identify storage that needs backing-up, digital components and/or metadata that need correcting or updating and media that need refreshing; and to issue reports on maintenance activities.

A3.2.3.3.2, Back-up Recordkeeping Storage System

To routinely make a copy of all digital content in the recordkeeping storage system, including the operating system, the software applications and all digital objects in the system, for the purpose of recovery in the event of a disaster resulting in system failure or corruption, and record information about these back-up activities.

A3.2.3.3.3, Correct Problems with Kept Records in Storage

To take the actions prescribed by the recordkeeping storage system strategies, rules and procedures and activity directives, in accordance with the procedures for maintaining authentic records, to eliminate problems in storage, and record information about these correction activities.

A3.2.3.3.4, Update Kept Records in Storage

To carry out conversion actions on the digital components of stored kept records in accordance with the procedures for maintaining authentic records and the actions prescribed by the recordkeeping storage system strategies, rules and procedures and activity directives, to ensure the records remain accessible, legible and intelligible over time (such as by migration, standardization or transformation to persistent form), and record information about these updating activities.

A3.2.3.3.5, Refresh Media for Kept Records in Storage

To copy or transfer the digital components of kept records in storage from one medium to another, or otherwise ensure the storage medium remains sound, in accordance with the procedures for maintaining authentic records and the actions prescribed by the recordkeeping storage system strategies, rules and procedures and activity directives, and record information about these media refreshment activities.

A3.3, Manage Access to Kept Records

To facilitate discovery of, and manage requests for, kept records and/or information about kept records, and monitor the performance of the recordkeeping access system.

A3.3.1, Monitor Performance of Recordkeeping Access System

To assess the efficacy of the performance of the recordkeeping access system by analyzing reports on the operation of recordkeeping activities, and issue activity directives for access activities and information on the performance of the recordkeeping access system for use in continued maintenance of the recordkeeping system.

A3.3.2, Facilitate Discovery of Kept Records and/or Information

To provide authorized internal and external users access to, and assistance in the use of, the tools and resources necessary to support querying and searching for, and discovery of, information, records and/or records aggregates in the recordkeeping system suited to a particular inquiry or purpose.

A3.3.3, Manage Requests for Kept Records and/or Information

To provide overall control and co-ordination of internal and external requests for access to records and/or information about kept records by processing access requests, retrieving digital components for requested records and/or information, verifying retrieved components and information and providing access to retrieved records and/or information.

A3.3.3.1, Process Requests for Kept Records and/or Information

To register access requests for kept records and/or information, translate them, define request specifications, generate retrieval requests and account for any problems with processing requests.

A3.3.3.1.1, Register Recordkeeping Access Requests

To record registration information about received requests for access to kept records and/or information about the records and issue notifications of receipt to the persons requesting the records.

A3.3.3.1.2, Retrieve Information to Process Recordkeeping Access Requests

To gather the information, from indexing instruments, record profiles and other recordkeeping tools, needed to process access requests for kept records and/or information about records.

A3.3.3.1.3, Generate Recordkeeping Retrieval Requests

To translate access requests for kept records and/or information into requests to the recordkeeping storage and information systems for retrieval of the exact digital components and/or information required to fulfil the access requests.

A3.3.3.1.4, Generate Recordkeeping Requests Specifications

To issue instructions to the recordkeeping retrieval and access systems on how to fulfil requests for kept records and/or information about the records based on analyses of the requests and processing information in relation to recordkeeping access system strategies, rules and procedures (including procedures for maintaining authentic records) and access privileges.

A3.3.3.2, Retrieve Requested Kept Records and/or Information

To output copies of digital components of records, information about digital components of records, rendering information about records and/or content information about records retrieved from storage in the recordkeeping system in response to retrieval requests for components and/or information.

A3.3.3.3, Verify Retrieved Kept Records and/or Information

To determine whether all components and information necessary to satisfy requests for kept records and/or information about kept records have been received and can be processed for output and, in cases where digital components are encountered that need updating or correcting, redirect them (or information about the problems encountered) to the maintenance function of the recordkeeping storage system.

A3.3.3.4, Provide Access to Retrieved Kept Records and/or Information

To fulfil access requests by either reconstituting the retrieved digital components of kept records and/or information in authentic form and presenting the manifested records or information to users, or by packaging the retrieved digital components with information

about how to reconstitute and present the records and/or information with the appropriate extrinsic form and issuing the packaged materials to users, and account for the success or failure of either activity.

A3.3.3.4.1, Reconstitute Kept Records and/or Information

To link or assemble all the verified digital components of requested kept records and/or information about kept records as necessary to reproduce and present the records and/or information in authentic form and, if necessary, redact records and/or information to meet privacy and/or copyright requirements.

A3.3.3.4.2, Manifest Kept Records and/or Information

To present copies of the reconstituted requested kept records and/or requested information about the records with the appropriate extrinsic form and with information about their relationships to one another (archival bond) and, if requested, produce a Certificate of Authenticity for the records copies.

A3.3.3.4.3, Package Kept Records and/or Information for Output

To combine the digital components of the requested kept records and/or requested information about kept records with information on how to reconstitute and manifest the records or information with the appropriate extrinsic form.

A3.4, Manage Disposition of Kept Records

To provide overall control and co-ordination of records disposition activities, including monitoring the performance of the disposition system, processing disposition information and, in accordance with disposition activity directives and disposition rules and procedures, destroying kept records and/or preparing and transferring kept records to the designated preserver.

A3.4.1, Monitor Performance of Disposition System

To assess the efficacy of the performance of the recordkeeping disposition system by analyzing reports on the operation of recordkeeping activities, and issue activity directives for disposition activities and information on the performance of the recordkeeping storage system for use in continued maintenance of the recordkeeping system.

A3.4.2, Identify Kept Records for Disposition

To identify records and information about records in the recordkeeping system earmarked either for destruction or transfer to the designated preserver, as determined by the creator's retention schedule.

A3.4.3, Destroy Kept Records

To obliterate kept records, and information related to the records, identified for destruction and provide documentation about the records destroyed.

A3.4.4, Prepare Kept Records for Transfer to Designated Preserver

To attach to kept records integrity and related metadata about actions taken during the course of preparing the records for transfer to the designated preserver in accordance with the terms and conditions of transfer, and compile information about the records that is needed to meet all transfer information requirements.

A3.4.5, Transfer Kept Records to Designated Preserver

To send or transmit kept records prepared for transfer to permanent preserver (or, as applicable, the office of the creator responsible for the permanent preservation function) with the accompanying documentation necessary for permanent preservation.

A4, Manage Records in a Permanent Preservation System

To provide overall control and co-ordination of activities in the permanent preservation system, including records appraisal and selection, acquisition, description, storage, retrieval and access, and monitoring of the performance of the permanent preservation system.

A4.1, Monitor Performance of Permanent Preservation System

To assess the efficacy of the performance of the permanent preservation system by analyzing performance reports on the operation of permanent preservation sub-system activities, and issue activity directives for preservation activities and information on the performance of the permanent preservation system for use in continued maintenance of the chain of preservation framework.

A4.2, Appraise Records for Permanent Preservation

To make appraisal decisions by compiling information about kept records and their context, assessing their value, and determining the feasibility of their preservation; and to monitor appraised records and appraisal decisions to identify any necessary changes to appraisal decisions over time.

A4.2.1, Monitor Performance of Preservation Selection System

To assess the efficacy of the performance of the permanent preservation selection system by analyzing reports on the operation of preservation activities, and issue activity directives for selection activities and information on the performance of the permanent preservation selection system for use in continued maintenance of the permanent preservation system.

A4.2.2, Analyze Kept Records for Preservation

To assess information concerning the kept records being appraised, including their contexts, value and preservation feasibility.

A4.2.2.1, Analyze Information About Records

To collect, organise, record and assess relevant information from the kept records being appraised and about their juridical-administrative, provenancial, procedural, documentary and technological contexts.

A4.2.2.2, Assess Value of Records

To analyze and judge: (1) the capacity of records being appraised to serve the continuing interests of their creator and society; and (2) the grounds for presuming the records to be authentic.

A4.2.2.2.1, Assess Continuing Value of Records

To analyze and judge the capacity of records being appraised to serve the continuing interests of their creator and society.

A4.2.2.2.2, Assess Authenticity of Records

To analyze and judge the grounds for presuming records being appraised to be authentic.

A4.2.2.2.2.1, Compile Evidence Supporting the Presumption of Authenticity

To collect, organize and record evidence of the identity and integrity of records being appraised and about the procedural controls applied to them, to support the presumption of authenticity of those records.

A4.2.2.2.2.2, Measure Evidence Against Requirements For Authentic Records

To compare the evidence compiled about the identity, integrity and procedural controls of the records being appraised with the requirements for authentic records.

A4.2.2.2.2.3, Verify Authenticity

To use verification methods to determine the authenticity of records being appraised in cases where there is insufficient evidence to meet the requirements for presuming the authenticity of records.

A4.2.2.2.3, Determine Value of Records

To establish the value of records being appraised based on assessments of their continuing value and their authenticity.

A4.2.2.3, Determine Feasibility of Preservation

To identify the elements and digital components of the records being appraised, reconcile their preservation requirements with the preserver's current and anticipated preservation capabilities, and provide documentation about the digital components to be preserved and the feasibility of preservation.

A4.2.2.3.1, Determine Record Elements to be Preserved

To identify the necessary documentary components (e.g., record profile, attachments, annotations, etc.) and elements of form (e.g., author, date, subject line, etc.) of records to be preserved to determine which record elements must be preserved to protect the authenticity of those records.

A4.2.2.3.2, Identify Digital Components to be Preserved

To identify the digital components that manifest the record elements that need to be preserved to protect the authenticity of records selected for permanent preservation.

A4.2.2.3.3, Reconcile Preservation Requirements with Preservation Capabilities

To determine whether the digital components manifesting the record elements that need to be preserved to protect the authenticity of records selected for permanent preservation can in fact be preserved given the preserver's current and anticipated preservation capabilities.

A4.2.3, Make Appraisal Decisions

To decide on and document the retention and disposition of records based on valuation and feasibility information, and to agree on and document the terms and conditions of transfer of the records to the preserver.

A4.2.4, Monitor Appraisal Decisions

To keep track of appraisal decisions in relation to subsequent developments within the creator's and/or preserver's activities that might make it necessary to adjust or redo an appraisal, such as substantial changes to: (1) appraised records and/or their context, (2) the creator's organizational mandate and responsibilities, (3) the creator's record-making or recordkeeping activities or systems, (4) the preserver's records preservation activities or systems and/or (5) the preserver's organizational mandate and responsibilities.

A4.3, Acquire Selected Records

To bring records selected for permanent preservation into the custody of the preserver by registering and verifying transfers, confirming the feasibility of preservation, and accessioning the records or rejecting transfers if they are inadequate.

A4.3.1, Monitor Performance of Preservation Acquisition System

To assess the efficacy of the performance of the permanent preservation acquisition system by analyzing reports on the operation of preservation activities, and issue activity directives for acquisition activities and information on the performance of the permanent preservation selection system for use in continued maintenance of the permanent preservation system.

A4.3.2, Process Records Transfers

To register records transfers received by the designated preserver, confirm the authorization for the transfers, verify their content, confirm the authenticity of the records in the transfers and confirm the feasibility of preserving the transferred records.

A4.3.2.1, Register Transfers

To record registration information about received transfers and issue notifications of receipt to the persons transferring the records.

A4.3.2.2, Confirm Authorization for Transfers

To verify the authority for transfer of records selected for preservation and, in cases of unauthorized transfers, issue notifications of rejection of transfer to the persons transferring the records.

A4.3.2.3, Verify Content of Transfers

To determine whether transfers of records selected for preservation have been successfully transmitted (i.e., are not corrupted) and include all records and aggregates of records specified in the terms and conditions of the transfers and, in corrupted or unverified cases, issue notifications of rejection of transfer to the persons transferring the records.

A4.3.2.4, Confirm Authenticity of Records

To determine whether the assessment of the authenticity of the creator's records being transferred, which was conducted as part of the appraisal process, is still valid by verifying that the attributes relating to the records' identity and integrity have been carried forward with them along with any relevant documentation.

A4.3.2.5, Confirm Feasibility of Preservation

To confirm that the determinations of the feasibility of preservation made during the process of appraisal are still valid and, in unconfirmed cases, issue notifications of rejection of transfer to the persons transferring the records.

A4.3.3, Accession Records

To formally accept records selected for permanent preservation into custody and document transfers in accessions documentation.

A4.4, Preserve Accessioned Records

To manage information about, and the description and storage of, records acquired for permanent preservation.

A4.4.1, Manage Information About Preserved Records

To compile information about records in the permanent preservation system and about records preservation activities and to provide overall control and co-ordination of that information for use in records selection, acquisition, description, storage and access activities.

A4.4.1.1, Monitor Performance of Preservation Information System

To assess the efficacy of the performance of the permanent preservation information system by analyzing reports on the operation of preservation activities, and issue activity directives for information activities and information on the performance of the permanent preservation selection system for use in continued maintenance of the permanent preservation system.

A4.4.1.2, Compile Information for Preservation

To collect, organise and record relevant appraisal, acquisition, accession and preservation information about acquired records for their preservation, description, storage, retrieval and output.

A4.4.1.3, Update Information on Preservation Actions

To record information about actions taken to back-up, correct, update and refresh digital components of records acquired for permanent preservation or their storage.

A4.4.2, Manage Arrangement of Preserved Records

To provide overall control and co-ordination of records arrangement activities.

A4.4.3, Manage Description of Preserved Records

To provide overall control and co-ordination of records description activities, including monitoring the preservation description system, describing preserved records and developing description instruments.

A4.4.3.1, Monitor Performance of Preservation Description System

To assess the efficacy of the performance of the permanent preservation description system by analyzing reports on the operation of preservation activities, and issue activity directives for description activities and information on the performance of the permanent preservation selection system for use in continued maintenance of the permanent preservation system.

A4.4.3.2, Describe Preserved Records

To record information about the nature and make-up of records acquired for permanent preservation and about their juridical-administrative, provenancial, procedural, documentary and technological contexts, as well as information about any changes they have undergone since they were first created.

A4.4.3.3, Develop Descriptive Instruments

To prepare tools that provide intellectual and physical control over the records in the preservation system, such as guides, inventories, indexes, repository locators and related finding aids.

A4.4.4, Manage Storage of Preserved Records

To provide overall control and co-ordination of the permanent preservation storage system and the records stored in the system by placing the records in storage, maintaining their digital components and monitoring the performance of the storage system.

A4.4.4.1, Monitor Performance of Permanent Preservation Storage System

To assess the efficacy of the performance of the permanent preservation storage system by analyzing reports on the operation of preservation activities, and issue activity directives for storage activities and information on the performance of the permanent preservation selection system for use in continued maintenance of the permanent preservation system.

A4.4.4.2, Place Preserved Records in Storage

To place the digital components of preserved records and their metadata into storage in accordance with the procedures for maintaining authentic copies of records and the actions prescribed by the preservation storage system strategies, rules and procedures and activity directives.

A4.4.4.3, Maintain Records in Permanent Preservation Storage System

To monitor the storage of preserved records and their digital components, periodically back-up the permanent preservation storage system and, as necessary, correct problems with and update the digital components, and/or refresh storage media to ensure the records in the system remain accessible, legible and intelligible over time.

A4.4.4.3.1, Monitor Preserved Records in Storage

To keep track of the condition and maintenance requirements of preserved records--more specifically, their digital components and metadata--and the media on which they are stored in the permanent preservation storage system to identify storage that needs backing-up, digital components and metadata that need correcting or updating and media that need refreshing; and to issue reports on maintenance activities.

A4.4.4.3.2, Back-up Preservation Storage System

To routinely make a copy of all digital content in the preservation storage system, including the operating system, the software applications and all digital objects in the system, for the purpose of recovery in the event of a disaster resulting in system failure or corruption, and record information about these back-up activities.

A4.4.4.3.3, Correct Problems with Preserved Records in Storage

To take the actions prescribed by the preservation storage system strategies, rules and procedures and activity directives, in accordance with the procedures for maintaining authentic copies of records, to identify and eliminate problems in storage to ensure that the records remain accessible, legible and intelligible over time; and record information about these correction activities.

A4.4.4.3.4, Update Preserved Records in Storage

To carry out conversion actions on the digital components of preserved records in storage in accordance with the procedures for maintaining authentic copies of records and the actions prescribed by the preservation storage system strategies, rules and procedures and activity directives, to ensure the records remain accessible, legible and intelligible over time (such as by migration, standardization or transformation to persistent form), and record information about these updating activities.

A4.4.4.3.5, Refresh Media for Preserved Records in Storage

To copy or transfer the digital components of preserved records in storage from one medium to another, or otherwise ensure the storage medium remains sound, in accordance with the procedures for maintaining authentic copies of records and the actions prescribed by the preservation storage system strategies, rules and procedures and activity directives, and record information about these media refreshment activities.

A4.5, Output Records

To facilitate discovery of records and/or information about records in the permanent preservation system, manage requests for preserved records and/or information about the records and monitor the performance of the permanent preservation access system.

A4.5.1, Monitor Performance of Preservation Access System

To assess the efficacy of the performance of the permanent preservation access system by analyzing reports on the operation of preservation activities, and issue activity directives for access activities and information on the performance of the permanent preservation access system for use in continued maintenance of the permanent preservation system.

A4.5.2, Facilitate Discovery of Preserved Records and/or Information

To provide authorized internal and external users with mediated access to and, as necessary, assistance in the use of, the tools and resources needed to support querying and searching for information, records and/or records aggregates in the permanent preservation system.

A4.5.3, Manage Requests for Preserved Records and/or Information

To provide overall control and co-ordination of internal and external requests for access to preserved records and/or information about the records by processing access requests, retrieving digital components for requested records and/or information, verifying retrieved components and information and providing access to retrieved records and/or information.

A4.5.3.1, Process Requests for Preserved Records and/or Information

To register access requests for preserved records and/or information, translate them, define request specifications, generate retrieval requests and account for any problems with processing access requests.

A4.5.3.1.1, Register Preservation Access Requests

To record registration information about received requests for access to preserved records and/or information about the records and issue notifications of receipt to the persons requesting the records.

A4.5.3.1.2, Retrieve Information to Process Preservation Access Requests

To gather the information, from descriptive instruments and other preservation information, needed to process access requests for preserved records and/or information about records.

A4.5.3.1.3, Generate Preservation Retrieval Requests

To translate access requests for preserved records and/or information translated into requests to the permanent preservation storage and information systems for retrieval of the exact digital components and/or information required to fulfil the access requests.

A4.5.3.1.4, Generate Preservation Requests Specifications

To issue instructions to the preservation retrieval and access systems on how to fulfil requests for preserved records and/or information about the records based on analyses of the requests and processing information in relation to preservation retrieval and access systems' strategies, rules and procedures (including procedures for maintaining authentic copies of records) and access privileges.

A4.5.3.2, Retrieve Requested Preserved Records and/or Information

To output copies of digital components of records, information about digital components of records, rendering information about records and/or content information about records retrieved from storage in the permanent preservation system in response to retrieval requests for components and/or information and in accordance with any request specifications.

A4.5.3.3, Verify Retrieved Preserved Records and/or Information

To determine whether all components and information necessary to satisfy access requests for preserved records and/or information about the records have been received and can be processed for output and, in cases where digital components are encountered that need updating or correcting, redirect them, along with information about the problems encountered, to the maintenance function of the permanent preservation storage system for further action..

A4.5.3.4, Provide Access to Retrieved Preserved Records and/or Information

To fulfil access requests by either reconstituting the retrieved digital components of preserved records and/or information in authentic form and presenting the manifested records or information to users, or by packaging the retrieved digital components with information about how to reconstitute and present the records and/or information with the appropriate extrinsic form and issuing the packaged materials to users, and account for the success or failure of either activity.

A4.5.3.4.1, Reconstitute Preserved Records and/or Information

To link or assemble all the verified digital components of requested preserved records and/or information about preserved records as necessary to reproduce and present the records and/or information in authentic form and, if necessary, redact information to meet privacy and/or copyright requirements.

A4.5.3.4.2, Manifest Preserved Records and/or Information

To present copies of the reconstituted requested preserved records and/or requested information about the records with the appropriate extrinsic form and with information about their relationships to one another (archival bond) and, if requested, produce a Certificate of Authenticity for the records copies.

A4.5.3.4.3, Package Preserved Records and/or Information for Output

To combine the digital components of the requested preserved records and/or requested information about preserved records with information on how to reconstitute and manifest the records or information with the appropriate extrinsic form.

Chain of Preservation Model Arrow Definitions

Accession Registration Scheme

A plan for assigning a unique identifier to each accessioned records transfer.

Accessioned Records

Records that are taken into the custody of the preserver for permanent preservation.

Accounting for Preservation Access Requests

Information about successful access requests for preserved records and/or information about preserved records, including a log of the records or information provided to users, the dates when access was provided and the names of the users to whom access was provided.

Accounting for Recordkeeping Access Requests

Information about successful access requests for kept records and/or information about kept records, including a log of the records or information provided to users, the dates when access was provided and the names of the users to whom access was provided.

Analysis of Creator's Records

An analysis of the records generated by the creator in the course of its activity and of the way they were created, organized, maintained and used.

Analysis of Designated Records Preserver

An analysis of the designated records preserver's mission, organizational structure, activities, functions and existing technological, financial and human resources, and records preservation related needs and risks relevant to the identification of the framework requirements.

Analysis of Records Creator

An analysis of the record creator's mission, organizational structure, activities, functions and existing technological, financial and human resources, and records related needs and risks relevant to the identification of the framework requirements.

Appraisal Decisions

Determinations of the retention periods and disposition of records, including the terms and conditions of transfer from the creator to the preserver.

Archival Concepts, Principles and Requirements

The concepts, principles and methodologies governing the treatment of records, including the requirements for maintaining authentic copies of records.

Arranged Records

Records of a creator that have been identified as to their provenance and relationships according to the concepts and principles of archival arrangement.

Assessments of Authenticity

Documentation of the grounds for presuming the authenticity of records or, in cases of insufficient evidence to support such presumption, documentation of the verification of authenticity.

Assessments of Continuing Value

Documentation of the reasons for continuing preservation of records with regard to their capacity to serve the continuing interests of their creator and/or society.

Authentic Records

Records whose authenticity is presumed or has been verified.

Authorized Transfers

Transfers of records selected for preservation that have been submitted by persons having the authority to transfer the records.

Captured Documents

Documents made or received by the creator that are recorded and saved in the record-making system with fixed form and stable content.

Completed Records

Records, made or received by the creator, which have participated in the formal execution phase of an administrative procedure.

Completed Records Prepared for Transfer to Recordkeeping System

Executed records in the proper format for transfer to the recordkeeping system as prescribed by recordkeeping system rules and procedures and technological requirements.

Completed Records Transfers

Completed records that have been adjudged worthy of retention for future use or reference by the creator and that meet all requirements for transfer to the recordkeeping system.

Controlled Preservation Vocabulary/Thesaurus

A managed set of purposefully delimited and standardised terms, phrases and concepts used by the designated preserver to control the values of a metadata element.

Controlled Recordkeeping Vocabulary/Thesaurus

A managed set of purposefully delimited and standardised terms, phrases and concepts used by the creator to control the values of a metadata element.

Corrected Kept Records

Kept records from which problems with locating, retrieving or reconstituting their digital components and/or presenting the reconstituted records have been eliminated.

Corrected Preserved Records

Preserved records from which problems with locating, retrieving or reconstituting their digital components and/or presenting the reconstituted records have been eliminated.

Creator

An entity that generates records in the course of its activity.

Creator's Certificates of Authenticity

Attestations by the creator that one or more records are authentic.

Creator's Existing Records

Inactive, semi-active and active records of the creator, regardless of the medium and location of the records, which predate development and implementation of the chain of preservation framework and that need to be incorporated into any new record-making and recordkeeping systems.

Declared Records

Identified documents made or received by the creator that have been given a classification code based on the classification scheme and that have been registered according to the registration scheme.

Described Records

Arranged records for which information about their nature, make-up and contexts (juridical-administrative, provenancial, procedural, documentary and technological) are recorded to facilitate intellectual and physical control.

Descriptive Instruments

Tools prepared in the course of archival description and indexing of records for the purposes of intellectual and physical control.

Design Requirements

The record-making, recordkeeping and permanent preservation needs that guide the framework design.

Disposition Rules and Procedures

The authoritative instructions governing the process of determining the transfer and destruction of kept records.

Documentation About Destroyed Records

Formal instruments documenting the destruction of kept records, including information about the quantity and characteristics of records that have been destroyed, copies of which are maintained by the creator as evidence of the activity.

Evidence for the Presumption of Authenticity

Information that has been drawn from records, from metadata related to the records and/or from their various contexts and that provides evidence to support a presumption of the authenticity of records.

Facilities

Physical space and infrastructure needed to manage the lifecycle of records.

Feasibility Reports

Assessments of whether the record elements and digital components of a given body of records proposed for preservation can be preserved given the preserver's current and anticipated preservation capabilities.

Framework Policies

Collective, high-level management principles that help guide and control development of the framework requirements.

Identified Documents

Documents made or received by the creator to which identity metadata (e.g., persons, actions and dates of compilation) have been attached.

Indexed Records

Kept records for which access points have been established using a controlled record-keeping vocabulary to facilitate record discovery and retrieval.

Indexing Instruments

Tools that facilitate efficient and effective discovery and retrieval of kept records and/or records aggregates suited to a particular inquiry or purpose.

Information About Accessioned Records

Documentation of the provenance and custody of clearly identified sets of records for which the preserver has accepted responsibility for permanent preservation.

Information About Appraisal Decisions

Documentation explaining the justifications of appraisal decisions according to assessment of the value of records and the feasibility of their permanent preservation.

Information About Appraised Records

Documentation compiled during the appraisal process containing information about the context and content of appraised records, including information about digital components to be preserved.

Information About Available Technology

Documentation concerning the software and hardware available on the market to the creator and to the preserver.

Information About Completed Records Prepared for Transfer to Recordkeeping System

Documentation, either in the form of metadata inextricably attached to records or inextricably linked to records in record profiles, about the identity, integrity, format, form, context and other characteristics of completed records adjudged worthy of transfer to the recordkeeping system that is needed to order the records properly with respect to their relationships with each other, to maintain their authenticity and to meet recordkeeping system transfer requirements.

Information About Context

Documentation compiled about the juridical-administrative, provenancial, procedural, documentary and/or technological contexts of kept records that is not available from the records themselves, for the purpose of facilitating appraisal.

Information About Creator

Documentation concerning the records creator's mission, organizational structure, activities, and existing technological, financial and human resources, as well as information about records related needs and risks.

Information About Creator's Existing Records

Documentation about the character and extent of the records created and kept by the creator prior to developing the framework requirements.

Information About Digital Components of Kept Records in Storage

Technical documentation compiled about digital components of records in the recordkeeping storage system for the purpose of facilitating discovery of, and/or processing access requests for, records and/or information about records.

Information About Digital Components of Preserved Records in Storage

Technical documentation concerning digital components of records in the preservation storage system that is needed to facilitate discovery of, and/or process access requests for, the records and/or information about the records.

Information About Digital Components to be Preserved

Documentation about how record elements to be preserved are manifested in the electronic environment, construed for the purposes of instructing preservation activities.

Information About Executed Records

Documentation, either in the form of metadata inextricably attached to the records or inextricably linked to the records in record profiles, about the identity, integrity, format, form, context and other characteristics of executed records that is needed to order the records properly with respect to their relationships with each other and to maintain their authenticity.

Information About Implementation Problems

Documentation compiled about problems encountered during implementation of the record-making, recordkeeping, and/or permanent preservation systems for the purpose of revising the framework design process.

Information About Kept Records for Appraisal

Documentation compiled about the identity, integrity, format, form, context or other characteristics of records in the recordkeeping system for the purpose of appraising records and making appraisal decisions.

Information About Kept Records for Creation

Documentation compiled about records in the recordkeeping system for the purpose of helping direct records creation activities.

Information About Kept Records Identified for Destruction

Documentation about records in the recordkeeping system that are earmarked for destruction that is to be destroyed along with the records and/or that is used to provide information for documentation about destroyed records.

Information About Kept Records Identified for Preservation

Documentation about records in the recordkeeping system that are earmarked for transfer to the designated preserver that is needed to prepare the records in accordance with the terms and conditions of transfer.

Information About Kept Records in Storage

Documentation compiled about kept records in the recordkeeping storage system for the purpose of processing retrieval requests for records and/or information about records.

Information About Kept Records Prepared for Transfer to Preserver

Documentation about kept records and any modifications made to them in preparation for transfer to the designated preserver that is used to generate documentation about the records being transferred.

Information About Made Documents' Context

Documentation about the juridical-administrative, provenancial, procedural, documentary and/or technological context of documents made by the creator that is not available from the documents themselves and that needs to be recorded as metadata (e.g., the action or matter of the documents).

Information About Maintenance of Kept Records in Storage

Continuously updated documentation indicating the location of digital components of kept records in storage, the presence, nature and locations of recordkeeping system backups, the occurrence of storage problems, the actions taken to correct storage problems, the actions taken to update records and refresh storage media, the results of such actions and their impact, if any, on the authenticity of the records.

Information About Maintenance of Preserved Records in Storage

Continuously updated documentation indicating the location of digital components of preserved records in storage, the presence, nature and locations of permanent preservation system backups, the occurrence of storage problems, the actions taken to correct storage problems, the actions taken to update records and refresh storage media, the results of such actions--including any problems encountered--and their impact, if any, on the authenticity of the records.

Information About Outgoing Documents

Documentation about the identity, integrity, format, form, context, content or other characteristics about documents sent to external juridical or physical persons by the creator, either in the form of metadata inextricably attached to record copies of the documents retained by the creator or inextricably linked to such copies in record profiles.

Information About Preservation Storage Correction Activities

Continuously logged and updated documentation concerning actions taken to identify and eliminate problems in permanent preservation system storage, and the results of such actions, including any problems that occurred in the process and any impacts to the authenticity of preserved records and their digital components.

Information About Preservation Storage Media Refreshment Activities

Continuously logged and updated documentation concerning refreshment actions taken to ensure preservation storage media remain sound, and the results of such actions,

including any problems that occurred in the process and any impacts to the authenticity of preserved records and their digital components.

Information About Preservation Storage Updating Activities

Continuously logged and updated documentation concerning conversion actions taken to ensure preserved records remain accessible, legible and intelligible over time, and the results of such actions, including any problems that occurred in the process and any impacts to the authenticity of preserved records and their digital components.

Information About Preservation System Backup Activities

Continuously logged and updated documentation concerning permanent preservation system backup and recovery activities and the results of such actions, including any problems that occurred in the process and any impacts to the authenticity of preserved records and their digital components.

Information About Preserved Records in Storage

Documentation compiled about preserved records in the permanent preservation storage system for the purpose of processing retrieval request for records and/or information about records.

Information About Preserver

Documentation concerning the designated preserver's mission, organizational structure, activities, and existing technological, financial and human resources, as well as information about records preservation-related needs and risks.

Information About Preserver's Existing Holdings

Documentation compiled about the records and aggregations of records already in the preserver's custody for the purposes of helping make valuation determinations during appraisals and helping facilitate accessioning of accruals during acquisition.

Information About Received Documents' Context

Documentation about the context of incoming documents that is not available from the documents themselves and that needs to be recorded as metadata (e.g., the action or matter of the documents).

Information About Recordkeeping Storage Correction Activities

Continuously logged and updated documentation concerning actions taken to identify and eliminate problems in recordkeeping system storage, and the results of such actions, including any impacts on the authenticity of kept records and their digital components.

Information About Recordkeeping Storage Media Refreshment Activities

Continuously logged and updated documentation concerning refreshment actions taken to ensure recordkeeping storage media remain sound, and the results of such actions, including any impacts on the authenticity of kept records and their digital components.

Information About Recordkeeping Storage Updating Activities

Continuously logged and updated documentation concerning conversion actions taken to ensure kept records remain accessible, legible and intelligible over time, and the results of such actions, including any impacts on the authenticity of kept records and their digital components.

Information About Recordkeeping System Backup Activities

Continuously logged and updated documentation concerning recordkeeping system backup and recovery activities and the results of such actions, including any impacts on the authenticity of kept records and their digital components.

Information About Reproduced Kept Records Presented to Users

Documentation about the identity, integrity, format, form, context, content or other characteristics of reproduced kept records that were presented to users to satisfy requests.

Information About Reproduced Preserved Records Presented to Users

Documentation about the identity, integrity, format, form, context, content or other characteristics of reproduced preserved records that were presented to users to satisfy requests.

Information About Reproducible Kept Records Issued to Users

Documentation about the identity, integrity, format, form, context, content or other characteristics of reproducible kept records that were issued to users to satisfy requests.

Information About Reproducible Preserved Records Issued to Users

Documentation about the identity, integrity, format, form, context, content or other characteristics of reproducible preserved records that were issued to users to satisfy requests.

Information About Retrieved Digital Components of Kept Records

Technical documentation compiled about digital components of kept records in storage for the purpose of reconstituting the requested records from the components and presenting them in authentic form to users.

Information About Retrieved Digital Components of Preserved Records

Technical documentation compiled about digital components of preserved records in storage for the purpose of reconstituting the requested records from the components and presenting them in authentic form to users.

Information About Retrieved Digital Components that Need Updating or Correcting

Documentation about retrieved digital components that cannot be reconstituted or presented in accordance with current access strategies applicable to those records.

Information About Retrieved Kept Records

Documentation compiled about retrieved kept records for the purpose of fulfilling access requests: 1) for records properly ordered with respect to their relationships with each other, or 2) for information about the identity, integrity, format, form, context, content or other characteristics of the records.

Information About Retrieved Preserved Records

Documentation compiled about retrieved preserved records for the purpose of fulfilling access requests: 1) for records properly ordered with respect to their relationships with each other, or 2) for information about the identity, integrity, format, form, context, content or other characteristics of the records.

Information About Transferred Completed Records

Documentation compiled about completed records transferred to the recordkeeping system for the purpose of: 1) establishing the identity and demonstrate the integrity of the records being transferred, 2) identifying their logical format, constituent digital components, documentary form and other recordkeeping-related characteristics, 3) properly ordering the records with respect to their relationships with each other (archival bond) and 4) placing the records in their relevant contexts (juridical-procedural, provenancial, procedural, documentary, technical).

Information About Transferred Kept Records

Documentation compiled about kept records transferred to the designated preserver for the purposes of: 1) establishing the identity and demonstrating the integrity of the records being transferred, 2) identifying their logical format, constituent digital components,

documentary form and other preservation-related characteristics, 3) properly ordering the records with respect to their relationships with each other (archival bond) and 4) associating the records with their relevant contexts (juridical-procedural, provenancial, procedural, documentary, technical).

Information About Valuation Determinations

Information about the criteria used to assess the value of records and their application in a given case.

Information for Appraisal

Documentation compiled about records and their contexts for the purpose of assessing their value and authenticity.

Information for Arrangement

Documentation compiled about acquired and accessioned records and their preservation for the purpose of arranging the preserved records of a given creator.

Information for Description

Documentation compiled about acquired and accessioned records and their preservation for the purpose of describing preserved records and creating descriptive instruments.

Information for Feasibility

Documentation compiled about records and their contexts for the purpose of determining the feasibility of their preservation.

Information for Indexing

Documentation compiled about kept records for the purpose of establishing access points and creating indexing instruments to facilitate record discovery and retrieval.

Information for Preservation

Documentation compiled about accessioned records and their elements and digital components for the purpose of facilitating preservation.

Information for Preservation Retrieval Requests

Documentation compiled about preserved records and/or information about preserved records and their digital components for the purpose of generating retrieval requests and request specifications.

Information for Recordkeeping Retrieval Requests

Documentation compiled about kept records and/or information about kept records and their digital components for the purpose of generating retrieval requests and request specifications.

Information for Storage of Kept Records

Documentation compiled about kept records and their elements and digital components for the purpose of facilitating their storage and continued maintenance.

Information for Storage of Preserved Records

Documentation compiled about preserved records and their elements and digital components for the purpose of facilitating their storage and long-term preservation.

Integrated Business and Documentary Procedures

Procedures for carrying out the creator's business that have been linked to a scheme or plan for organization of the creator's records.

Juridical system

A social group that is organized on the basis of a system of rules and that includes three components: the social group, the organizational principle of the social group and the system of binding rules recognized by the social group.

Kept Records Identified for Destruction

Records and information about records in the recordkeeping system that are identified for destruction in accordance with retention decisions.

Kept Records Identified for Preservation

Records and information about records in the recordkeeping system that are identified, in accordance with retention decisions, for transfer to the designated preserver for long-term preservation.

Kept Records in Storage

Kept records whose digital components have been placed in a storage system on digital media.

Kept Records on Media that Need Refreshing

Kept records whose digital components are stored on media that need to be refreshed to ensure the records remain accessible, legible and intelligible over time.

Kept Records on Refreshed Storage Media

Kept records and/or their digital components that have been copied or transferred to new storage media.

Kept Records Prepared for Transfer to Preserver

Records and information about records in the recordkeeping system in the proper format for transfer to the designated preserver.

Kept Records that Need Correcting

Kept records whose digital components cannot be located, retrieved, reconstituted or presented in accordance with current recordkeeping strategies applicable to those records.

Kept Records that Need Updating

Kept records whose digital components require conversion to ensure the records remain accessible, legible and intelligible over time.

Kept Records Transfers

Aggregations of kept records adjudged worthy of transfer to the designated preserver for long-term preservation and that meet all terms and conditions of transfer.

Lists of Digital Components to be Preserved

Information about the components in the electronic environment manifesting record elements that should be preserved to maintain authenticity.

Lists of Record Elements to be Preserved

Information about the extrinsic and intrinsic elements of form that need to be preserved to maintain the authenticity of records.

Made Documents

Discrete aggregations of digital information that have been compiled in a syntactic manner in accordance with the specifications of the creator's documentary forms, integrated business and documentary procedures and record-making access privileges, but which have not yet been captured (i.e., affixed to a digital medium with fixed form and stable content).

Management Policies

Formalized statements designed to provide governance and guidance in the establishment of overall framework design requirements.

Mediated Access Requests for Kept Records and/or Information

Requests from internal or external users to consult or receive copies of kept records or information about kept records in storage that have been formulated following access to and, as necessary, assistance in the use of, the tools and resources needed to support querying and searching for, and discovery of, information, records and/or records aggregates in the recordkeeping system.

Mediated Access Requests for Preserved Records and/or Information

Requests from internal or external users to consult or receive copies of preserved records or information about preserved records in storage that have been formulated following access to and, as necessary, assistance in the use of, the tools and resources needed to support querying and searching for, and discovery of, information, records and/or records aggregates in the permanent preservation system.

Need for Verification

The need to employ methods of verification of the authenticity of records as a result of there being weak evidence for the presumption of their authenticity.

Notifications of Receipt of Preservation Access Request

Formal instruments sent to the persons requesting access to preserved records and/or information about the records acknowledging that the preserver has received the request and, if needed, asking requestors to address any problems identified in registering the requests.

Notifications of Receipt of Recordkeeping Access Request

Formal instruments sent to the persons requesting access to kept records and/or information about the records acknowledging that the creator has received the request and, if needed, asking requestors to address any problems identified in registering the requests.

Notifications of Receipt of Transfer

Formal instruments sent to the creator acknowledging that the preserver has received the transfers and, if needed, asking the creator to address any problems encountered in registering the transfers.

Notifications of Rejection of Preservation Access Request

Formal instruments sent to the persons requesting access to preserved records and/or information about the records indicating that requests cannot be fulfilled because the requests are unauthorized (e.g., due to copyright restrictions), do not contain information that is sufficiently accurate, valid or complete to process the request, or are for records and/or information that cannot be located, retrieved, verified, reconstituted, manifested and/or packaged due to administrative, technical or other problems.

Notifications of Rejection of Recordkeeping Access Request

Formal instruments sent to the persons requesting access to kept records and/or information about the records indicating that requests cannot be fulfilled because the requests are unauthorized (e.g., due to access restrictions), do not contain information that is sufficiently accurate, valid or complete to process the request, or are for records and/or information that cannot be located, retrieved, verified, reconstituted, manifested and/or packaged due to administrative, technical or other problems.

Notifications of Rejection of Transfer

Formal instruments sent to the creator by the preserver indicating that transfers of records do not satisfy requirements for being accessioned or preserved, because the transfers are unauthorized, do not contain the proper records, or contain records that cannot be authenticated or whose preservation is not feasible.

Orders to Rectify Unverifiable Retrievals

Official requests issued by access activity management staff to remedy problems that resulted in retrieval of incomplete, incorrect or unprocessable digital components and/or information and, as appropriate, reattempt retrievals.

Outgoing Documents

Records that are sent to external juridical and physical persons in the course of the activities of the records creator, drafts of which are also sent to and stored in the recordkeeping system.

Permanent Preservation System

A set of rules governing the permanent intellectual and physical maintenance of records and the tools and mechanisms used to implement these rules.

Permanent Preservation System Design

The plan for the permanent preservation system outlining the selection, acquisition, description, storage, retrieval and access sub-systems.

Permanent Preservation System Policies

The collective, high-level management principles that guide and control development, implementation and execution of the permanent preservation system.

Preservation Access System

A set of rules governing the methods and strategies for discovering, reconstituting and presenting and/or packaging retrieved records and/or information about records in the permanent preservation system and the tools and mechanisms used to implement these rules.

Preservation Access System Activity Directives

Authoritative procedural orders/instruments, issued in response to ongoing system monitoring and performance evaluations, that are intended to help direct, update and coordinate the ongoing activities of the preservation access system.

Preservation Access System Design

The plan for the access sub-system of the permanent preservation system.

Preservation Access System Monitoring Requirements

The operational and administrative conditions that need to be established to facilitate ongoing assessment of the operation of the permanent preservation access sub-system in relation to the established performance requirements for the sub-system.

Preservation Access System Performance Criteria

The operational benchmarks or standards for operation of the permanent preservation access sub-system against which the continuing performance and adequacy of all activities, functions, processes and structures within the sub-system are measured.

Preservation Access System Performance Information

Continuously logged and updated documentation concerning the ability of the permanent preservation access sub-system to fulfil its purpose and achieve its performance objectives.

Preservation Access System Performance Requirements

The operational and administrative specifications for measuring the continuing ability of the permanent preservation access sub-system to fulfil its purpose.

Preservation Access System Policies

The collective, high-level management principles that guide and control development, implementation and execution of the permanent preservation access sub-system.

Preservation Access System Rules and Procedures

The authoritative instructions governing the operation of the permanent preservation access sub-system.

Preservation Access System Strategies

The authoritative objectives and methods governing the operation of the permanent preservation access sub-system.

Preservation Access System Technological Requirements

Specification of the hardware and software needed for the permanent preservation access sub-system.

Preservation Acquisition System

A set of rules governing the acquisition and accessioning of records transfers and the tools and mechanisms used to implement these rules.

Preservation Acquisition System Activity Directives

Authoritative procedural orders/instruments, issued in response to ongoing system monitoring and performance evaluations, that are intended to help direct, update and coordinate the ongoing activities of the preservation acquisition system.

Preservation Acquisition System Design

The plan for the acquisition sub-system of the permanent preservation system.

Preservation Acquisition System Monitoring Requirements

The operational and administrative conditions that need to be established to facilitate ongoing assessment of the operation of the permanent preservation acquisition sub-system in relation to the established performance requirements for the sub-system.

Preservation Acquisition System Performance Criteria

The operational benchmarks or standards for operation of the permanent preservation acquisition sub-system against which the continuing performance and adequacy of all activities, functions, processes and structures within the sub-system are measured.

Preservation Acquisition System Performance Information

Continuously logged and updated documentation concerning the ability of the permanent preservation acquisition sub-system to fulfil its purpose and achieve its performance objectives.

Preservation Acquisition System Performance Requirements

The operational and administrative specifications for measuring the continuing ability of the permanent preservation acquisition sub-system to fulfil its purpose.

Preservation Acquisition System Policies

The collective, high-level management principles that guide and control development, implementation and execution of the permanent preservation acquisition sub-system.

Preservation Acquisition System Rules and Procedures

The authoritative instructions governing the operation of the permanent preservation acquisition sub-system.

Preservation Acquisition System Strategies

The authoritative objectives and methods governing the operation of the permanent preservation acquisition sub-system.

Preservation Acquisition System Technological Requirements

Specification of the hardware and software needed for the permanent preservation acquisition sub-system.

Preservation Activity Directives

Authoritative procedural orders/instruments, issued in response to ongoing system monitoring and performance evaluations, that are intended to help direct, update and coordinate the ongoing activities of the permanent preservation system.

Preservation Description System

A set of rules governing the description of preserved records and the development of description instruments and the tools and mechanisms used to implement these rules.

Preservation Description System Activity Directives

Authoritative procedural orders/instruments, issued in response to ongoing system monitoring and performance evaluations, that are intended to help direct, update and coordinate the ongoing activities of the preservation description system.

Preservation Description System Design

The plan for the description sub-system of the permanent preservation system.

Preservation Description System Monitoring Requirements

The operational and administrative conditions that need to be established to facilitate ongoing assessment of the operation of the permanent preservation description sub-system in relation to the established performance requirements for the sub-system.

Preservation Description System Performance Criteria

The operational benchmarks or standards for operation of the permanent preservation description sub-system against which the continuing performance and adequacy of all activities, functions, processes and structures within the sub-system are measured.

Preservation Description System Performance Information

Continuously logged and updated documentation concerning the ability of the permanent preservation description sub-system to fulfil its purpose and achieve its performance objectives.

Preservation Description System Performance Requirements

The operational and administrative specifications for measuring the continuing ability of the permanent preservation description sub-system to fulfil its purpose.

Preservation Description System Policies

The collective, high-level management principles that guide and control development, implementation and execution of the permanent preservation description sub-system.

Preservation Description System Rules and Procedures

The authoritative instructions governing the operation of the permanent preservation description sub-system.

Preservation Description System Strategies

The authoritative objectives and methods governing the operation of the permanent preservation description sub-system.

Preservation Description System Technological Requirements

Specification of the hardware and software needed for the permanent preservation description sub-system.

Preservation Information System

A set of rules governing the management and maintenance of information about the operation of the permanent preservation system and about the preserved records in the system, including their digital components and the preservation actions applied to them, and the tools and mechanisms used to implement these rules.

Preservation Information System Activity Directives

Authoritative procedural orders/instruments, issued in response to ongoing system monitoring and performance evaluations, that are intended to help direct, update and coordinate the ongoing activities of the preservation information system.

Preservation Information System Design

The plan for the information sub-system of the permanent preservation system.

Preservation Information System Monitoring Requirements

The operational and administrative conditions that need to be established to facilitate ongoing assessment of the operation of the permanent preservation information sub-system in relation to the established performance requirements for the sub-system.

Preservation Information System Performance Criteria

The operational benchmarks or standards for operation of the permanent preservation

information sub-system against which the continuing performance and adequacy of all activities, functions, processes and structures within the sub-system are measured.

Preservation Information System Performance Information

Continuously logged and updated documentation concerning the ability of the permanent preservation information sub-system to fulfil its purpose and achieve its performance objectives.

Preservation Information System Performance Requirements

The operational and administrative specifications for measuring the continuing ability of the permanent preservation information sub-system to fulfil its purpose.

Preservation Information System Policies

The collective, high-level management principles that guide and control development, implementation and execution of the permanent preservation information sub-system.

Preservation Information System Rules and Procedures

The authoritative instructions governing the operation of the permanent preservation information sub-system.

Preservation Information System Strategies

The authoritative objectives and methods governing the operation of the permanent preservation Information sub-system.

Preservation Information System Technological Requirements

Specification of the hardware and software needed for the permanent preservation information sub-system.

Preservation Metadata Schemes

Lists of all necessary metadata to be recorded to ensure the identification and integrity of records preserved in the permanent preservation system.

Preservation Reporting Schemes

Plans for the systematic generation of documentation or reports of the preserver's preservation activities according to logically structured conventions, methods and procedural rules.

Preservation Retrieval System

A set of rules governing the retrieval of records, their digital components and/or information about the records and their components from the permanent preservation storage system and the tools and mechanisms used to implement these rules.

Preservation Retrieval System Design

The plan for the permanent preservation retrieval system outlining preservation retrieval rules and procedures, preservation retrieval strategies, and preservation retrieval technological requirements.

Preservation Retrieval System Monitoring Requirements

The operational and administrative conditions that need to be established to facilitate ongoing assessment of the operation of the permanent preservation retrieval sub-system in relation to the established performance requirements for the sub-system.

Preservation Retrieval System Performance Criteria

The operational benchmarks or standards for operation of the permanent preservation retrieval sub-system against which the continuing performance and adequacy of all activities, functions, processes and structures within the sub-system are measured.

Preservation Retrieval System Performance Information

Continuously logged and updated documentation concerning the ability of the permanent preservation retrieval sub-system to fulfil its purpose and achieve its performance objectives.

Preservation Retrieval System Performance Requirements

The operational and administrative specifications for measuring the continuing ability of the permanent preservation retrieval sub-system to fulfil its purpose.

Preservation Retrieval System Policies

The collective, high-level management principles that guide and control development, implementation and execution of the permanent preservation retrieval sub-system.

Preservation Retrieval System Rules and Procedures

The authoritative instructions governing the operation of the permanent preservation retrieval sub-system.

Preservation Retrieval System Strategies

The authoritative objectives and methods governing the operation of the permanent preservation retrieval sub-system.

Preservation Retrieval System Technological Requirements

Specification of the hardware and software needed for the permanent preservation retrieval sub-system.

Preservation Selection System

A set of rules governing the appraisal of kept records and the tools and mechanisms used to implement these rules.

Preservation Selection System Activity Directives

Authoritative procedural orders/instruments, issued in response to ongoing system monitoring and performance evaluations, that are intended to help direct, update and coordinate the ongoing activities of the preservation selection system.

Preservation Selection System Design

The plan for the selection sub-system of the permanent preservation system.

Preservation Selection System Monitoring Requirements

The operational and administrative conditions that need to be established to facilitate ongoing assessment of the operation of the permanent preservation selection sub-system in relation to the established performance requirements for the sub-system.

Preservation Selection System Performance Criteria

The operational benchmarks or standards for operation of the permanent preservation selection sub-system against which the continuing performance and adequacy of all activities, functions, processes and structures within the sub-system are measured.

Preservation Selection System Performance Information

Continuously logged and updated documentation concerning the ability of the preservation selection sub-system to fulfil its purpose and achieve its performance objectives.

Preservation Selection System Performance Requirements

The operational and administrative specifications for measuring the continuing ability of the permanent preservation selection sub-system to fulfil its purpose.

Preservation Selection System Policies

The collective, high-level management principles that guide and control development, implementation and execution of the permanent preservation selection sub-system.

Preservation Selection System Rules and Procedures

The authoritative instructions governing the operation of the permanent preservation selection sub-system.

Preservation Selection System Strategies

The authoritative objectives and methods governing the operation of the permanent preservation selection sub-system.

Preservation Selection System Technological Requirements

Specification of the hardware and software needed for the permanent preservation selection sub-system.

Preservation Storage System

A set of rules governing the storage of records, their digital components and/or information about the records and components in the permanent preservation system and the tools and mechanisms used to implement these rules.

Preservation Storage System Activity Directives

Authoritative procedural orders/instruments, issued in response to ongoing system monitoring and performance evaluations, that are intended to help direct, update and coordinate the ongoing activities of the preservation storage system.

Preservation Storage System Design

The plan for the storage sub-system of the permanent preservation system.

Preservation Storage System Monitoring Requirements

The operational and administrative conditions that need to be established to facilitate ongoing assessment of the operation of the permanent preservation storage sub-system in relation to the established performance requirements for the sub-system.

Preservation Storage System Performance Criteria

The operational benchmarks or standards for operation of the permanent preservation storage sub-system against which the continuing performance and adequacy of all activities, functions, processes and structures within the sub-system are measured.

Preservation Storage System Performance Information

Continuously logged and updated documentation concerning the ability of the permanent preservation storage sub-system to fulfil its purpose and achieve its performance objectives.

Preservation Storage System Performance Requirements

The operational and administrative specifications for measuring the continuing ability of the permanent preservation storage sub-system to fulfil its purpose.

Preservation Storage System Policies

The collective, high-level management principles that guide and control development, implementation and execution of the permanent preservation storage sub-system.

Preservation Storage System Rules and Procedures

The authoritative instructions governing the operation of the permanent preservation storage sub-system.

Preservation Storage System Strategies

The authoritative objectives and methods governing the operation of the permanent preservation storage sub-system.

Preservation Storage System Technological Requirements

Specification of the hardware and software needed for the permanent preservation storage sub-system.

Preservation Storage that Needs Backing Up

All software applications and digital objects in the preservation storage system that need backing up as specified by permanent preservation storage system strategies.

Preservation System Access Privileges

The authority to compile, annotate, read, retrieve, transfer, and/or destroy records in the preservation system, granted to officers and employees of the entity responsible for preservation.

Preservation System Administrative Infrastructure

A comprehensive, integrated set of administrative policies, strategies, rules and procedures, and instruments that support preservation activities and enable the permanent preservation system to meet its functional requirements.

Preservation System Backup

A copy of all digital content in the preservation storage system.

Preservation System Functional Infrastructure Design

The comprehensive, integrated design for the permanent preservation system and each of its records information, selection, acquisition, description, storage, retrieval and access sub-systems.

Preservation System Functional Requirements

The comprehensive and integrated performance, monitoring and technological requirements for the permanent preservation system.

Preservation System Instruments

The administrative tools that support the preservation of records in the permanent preservation system, such as preservation metadata schemes, records transfer and accession registration schemes and controlled preservation vocabularies and thesauri.

Preservation System Monitoring Requirements

The operational and administrative conditions that need to be established to facilitate ongoing assessment of the operation of the permanent preservation system in relation to the established performance requirements for the system.

Preservation System Performance Criteria

The operational benchmarks or standards for operation of the permanent preservation system against which the continuing performance and adequacy of all activities, functions, processes, sub-systems and structures within the system are measured.

Preservation System Performance Information

Information about the ability of the individual components of the permanent preservation system to fulfil their purposes.

Preservation System Performance Requirements

The operational and administrative specifications for measuring the continuing ability of the permanent preservation system to fulfil its purpose.

Preservation System Rules and Procedures

The authoritative instructions governing the operation of the permanent preservation system.

Preservation System Strategies

The authoritative objectives and methods governing the operation of the permanent preservation system.

Preservation System Technological Requirements

Specification of the hardware and software needed for the permanent preservation system.

Preserved Records in Storage

Preserved records whose digital components have been placed in a storage system on digital media.

Preserved Records on Media that Need Refreshing

Preserved records whose digital components are stored on media that need to be refreshed to ensure the records remain accessible, legible and intelligible over time.

Preserved Records on Refreshed Storage Media

Preserved records and/or their digital components that have been copied or transferred to new storage media.

Preserved Records that Need Correcting

Preserved records whose digital components cannot be located, retrieved, reconstituted or presented in accordance with current preservation strategies applicable to those records.

Preserved Records that Need Updating

Preserved records whose digital components require conversion to ensure the records remain accessible, legible and intelligible over time.

Preserver

The entity responsible for managing the permanent preservation of records.

Preserver's Certificates of Authenticity

Attestations by the preserver that one or more records are authentic.

Preserver's Mission

For an archival institution or program: the jurisdiction, mandate, functions, and requirements to preserve the appraised records; for an individual: the goals, purposes, objectives, and related business needs to preserve selected records.

Procedures for Assessing Authenticity of Records

Authoritative procedural orders designed to facilitate evaluation of the authenticity of the creator's records during appraisal and/or acquisition of the records by the designated preserver.

Procedures for Ensuring the Accuracy of Records

Authoritative procedural orders designed to ensure that records are created accurate in the record-making system.

Procedures for Ensuring the Reliability of Records

Authoritative procedural orders designed to ensure that records are created reliable in the record-making system.

Procedures for Maintaining Authentic Copies of Records

Authoritative procedural orders outlining pre-established requirements for maintaining authentic copies of the creator's records in the custody of the designated preserver.

Procedures for Maintaining Authentic Records

Authoritative procedural orders designed to ensure that records maintain their identity and integrity as they are managed and maintained in the recordkeeping system.

Received Documents

Documents received by the creator from external juridical or physical persons.

Recommendations of Need to Update Appraisal Decisions

Instructions to revise appraisal decisions as a result of substantial changes in appraised records and their context, or as a result of substantial changes to a creator's organizational mandate and responsibilities and/or its record-making or recordkeeping activities or systems.

Recommended Framework Revisions

Suggestions on revising the framework design based on assessments of performance information of the record-making, recordkeeping, and permanent preservation systems.

Reconstituted Kept Records and/or Information

The linked or reassembled digital components of, and/or information about, kept records retrieved from storage for the purpose of reproducing and presenting the requested records and/or information to users.

Reconstituted Preserved Records and/or Information

The linked or reassembled digital components of, and/or information about, preserved records retrieved from storage for the purpose of reproducing and presenting the requested records and/or information to users.

Record Copies of Outgoing Documents

Drafts or record copies of documents sent to external juridical or physical persons, which are also sent to the recordkeeping system.

Record Copies of Redacted Kept Records Issued to Users

Record copies of kept records and/or information issued to users that were redacted to meet privacy and/or copyright requirements.

Record Copies of Redacted Preserved Records Issued to Users

Record copies of preserved records and/or information issued to users that were redacted to meet privacy and/or copyright requirements.

Record Descriptions

Descriptive information about preserved records, including their nature, make-up and contexts (juridical-administrative, provenancial, procedural, documentary and technological) that is recorded to facilitate intellectual and physical control of the records and, together with descriptive instruments, to facilitate discovery.

Record Profile Schemes

Plans for the systematic generation of digital forms designed to contain the attributes of records that attest to their identity and integrity, and which are generated when users create, send and/or close records, are updated when users subsequently modify or annotate completed records, and remain inextricably linked to the records for the entire period of their existence while in the custody of the creator.

Recordkeeping Access System

A set of rules governing the methods and strategies for discovering, reconstituting and presenting and/or packaging retrieved records and/or information about records in the recordkeeping system and the tools and mechanisms used to implement these rules.

Recordkeeping Access System Activity Directives

Authoritative procedural orders/instruments, issued in response to ongoing system monitoring and performance evaluations, that are intended to help direct, update and coordinate the ongoing activities of the recordkeeping access system.

Recordkeeping Access System Design

The plan for the access sub-system of the recordkeeping system.

Recordkeeping Access System Monitoring Requirements

The operational and administrative conditions that need to be established to facilitate ongoing assessment of the operation of the recordkeeping access sub-system in relation to the established performance requirements for the sub-system.

Recordkeeping Access System Performance Criteria

The operational benchmarks or standards for operation of the recordkeeping access sub-system against which the continuing performance and adequacy of all activities, functions, processes and structures within the sub-system are measured.

Recordkeeping Access System Performance Information

Continuously logged and updated documentation concerning the ability of the recordkeeping access sub-system to fulfil its purpose and achieve its performance objectives.

Recordkeeping Access System Performance Requirements

The operational and administrative specifications for measuring the continuing ability of the recordkeeping access sub-system to fulfil its purpose.

Recordkeeping Access System Policies

The collective, high-level management principles that guide and control development, implementation and execution of the recordkeeping access sub-system.

Recordkeeping Access System Rules and Procedures

The authoritative instructions governing the operation of the recordkeeping access sub-system.

Recordkeeping Access System Strategies

The authoritative objectives and methods governing the operation of the recordkeeping access sub-system.

Recordkeeping Access System Technological Requirements

Specification of the hardware and software needed for the recordkeeping access sub-system.

Recordkeeping Activity Directives

Authoritative procedural orders/instruments, issued in response to ongoing system monitoring and performance evaluations, that are intended to help direct, update and coordinate the ongoing activities of the recordkeeping system.

Recordkeeping Classification Scheme

A plan for the systematic identification and arrangement of the creator's business activities and records into categories according to logically structured conventions, methods and procedural rules.

Recordkeeping Disposition System

A set of rules governing the disposition of kept records and the tools and mechanisms used to implement these rules.

Recordkeeping Disposition System Activity Directives

Authoritative procedural orders/instruments, issued in response to ongoing system monitoring and performance evaluations, that are intended to help direct, update and coordinate the ongoing activities of the recordkeeping disposition system.

Recordkeeping Disposition System Design

The plan for the disposition sub-system of the recordkeeping system.

Recordkeeping Disposition System Monitoring Requirements

The operational and administrative conditions that need to be established to facilitate ongoing assessment of the operation of the recordkeeping disposition sub-system in relation to the established performance requirements for the sub-system.

Recordkeeping Disposition System Performance Criteria

The operational benchmarks or standards for operation of the recordkeeping disposition sub-system against which the continuing performance and adequacy of all activities, functions, processes and structures within the sub-system are measured.

Recordkeeping Disposition System Performance Information

Continuously logged and updated documentation concerning the ability of the recordkeeping disposition sub-system to fulfil its purpose and achieve its performance objectives.

Recordkeeping Disposition System Performance Requirements

The operational and administrative specifications for measuring the continuing ability of the recordkeeping disposition sub-system to fulfil its purpose.

Recordkeeping Disposition System Policies

The collective, high-level management principles that guide and control development, implementation and execution of the recordkeeping disposition sub-system.

Recordkeeping Disposition System Rules and Procedures

The authoritative instructions governing the operation of the recordkeeping disposition sub-system.

Recordkeeping Disposition System Strategies

The authoritative objectives and methods governing the operation of the recordkeeping disposition sub-system.

Recordkeeping Disposition System Technological Requirements

Specification of the hardware and software needed for the recordkeeping disposition sub-system.

Recordkeeping Indexing System

A set of rules governing the indexing of kept records and the tools and mechanisms used to implement these rules.

Recordkeeping Indexing System Activity Directives

Authoritative procedural orders/instruments, issued in response to ongoing system monitoring and performance evaluations, that are intended to help direct, update and coordinate the ongoing activities of the recordkeeping indexing sub-system.

Recordkeeping Indexing System Design

The plan for the indexing sub-system of the recordkeeping system.

Recordkeeping Indexing System Monitoring Requirements

The operational and administrative conditions that need to be established to facilitate ongoing assessment of the operation of the recordkeeping indexing sub-system in relation to the established performance requirements for the sub-system.

Recordkeeping Indexing System Performance Criteria

The operational benchmarks or standards for operation of the recordkeeping indexing sub-system against which the continuing performance and adequacy of all activities, functions, processes and structures within the sub-system are measured.

Recordkeeping Indexing System Performance Information

Continuously logged and updated documentation concerning the ability of the recordkeeping indexing sub-system to fulfil its purpose and achieve its performance objectives.

Recordkeeping Indexing System Performance Requirements

The operational and administrative specifications for measuring the continuing ability of the recordkeeping indexing sub-system to fulfil its purpose.

Recordkeeping Indexing System Policies

The collective, high-level management principles that guide and control development, implementation and execution of the recordkeeping indexing sub-system.

Recordkeeping Indexing System Rules and Procedures

The authoritative instructions governing the operation of the recordkeeping indexing sub-system.

Recordkeeping Indexing System Strategies

The authoritative objectives and methods governing the operation of the recordkeeping

indexing sub-system.

Recordkeeping Indexing System Technological Requirements

Specification of the hardware and software needed for the recordkeeping indexing sub-system.

Recordkeeping Information System

A set of rules governing the management and maintenance of information about the operation of the recordkeeping system and about the kept records in the system, including their digital components and metadata and the recordkeeping actions applied to them, and the tools and mechanisms used to implement these rules.

Recordkeeping Information System Design

The plan for the information sub-system of the recordkeeping system.

Recordkeeping Information System Monitoring Requirements

The operational and administrative conditions that need to be established to facilitate ongoing assessment of the operation of the recordkeeping information sub-system in relation to the established performance requirements for the sub-system.

Recordkeeping Information System Performance Criteria

The operational benchmarks or standards for operation of the recordkeeping information sub-system against which the continuing performance and adequacy of all activities, functions, processes and structures within the sub-system are measured.

Recordkeeping Information System Performance Information

Continuously logged and updated documentation concerning the ability of the recordkeeping information sub-system to fulfil its purpose and achieve its performance objectives.

Recordkeeping Information System Performance Requirements

The operational and administrative specifications for measuring the continuing ability of the recordkeeping information sub-system to fulfil its purpose.

Recordkeeping Information System Policies

The collective, high-level management principles that guide and control development, implementation and execution of the recordkeeping information sub-system.

Recordkeeping Information System Rules and Procedures

The authoritative instructions governing the operation of the recordkeeping information sub-system.

Recordkeeping Information System Strategies

The authoritative objectives and methods governing the operation of the recordkeeping information sub-system.

Recordkeeping Information System Technological Requirements

Specification of the hardware and software needed for the recordkeeping information sub-system.

Recordkeeping Metadata Schemes

Lists of all necessary metadata to be recorded to ensure the identification and integrity of records maintained in the recordkeeping system.

Recordkeeping Registration Scheme

A plan for assigning a unique identifier to each record in the recordkeeping system.

Recordkeeping Reporting Schemes

Plans for the systematic generation of documentation or reports of the creator's record-keeping activities according to logically structured conventions, methods and procedural rules.

Recordkeeping Retrieval System

A set of rules governing searching and finding records and/or information about records in a recordkeeping system, and the tools and mechanisms used to implement these rules.

Recordkeeping Retrieval System Design

The plan for the retrieval sub-system of the recordkeeping system.

Recordkeeping Retrieval System Monitoring Requirements

The operational and administrative conditions that need to be established to facilitate ongoing assessment of the operation of the recordkeeping retrieval sub-system in relation to the established performance requirements for the sub-system.

Recordkeeping Retrieval System Performance Criteria

The operational benchmarks or standards for operation of the recordkeeping retrieval sub-system against which the continuing performance and adequacy of all activities, functions, processes and structures within the sub-system are measured.

Recordkeeping Retrieval System Performance Information

Continuously logged and updated documentation concerning the ability of the recordkeeping retrieval sub-system to fulfil its purpose and achieve its performance objectives.

Recordkeeping Retrieval System Performance Requirements

The operational and administrative specifications for measuring the continuing ability of the recordkeeping retrieval sub-system to fulfil its purpose.

Recordkeeping Retrieval System Policies

The collective, high-level management principles that guide and control development, implementation and execution of the recordkeeping retrieval sub-system.

Recordkeeping Retrieval System Rules and Procedures

The authoritative instructions governing the operation of the recordkeeping retrieval sub-system.

Recordkeeping Retrieval System Strategies

The authoritative objectives and methods governing the operation of the recordkeeping retrieval sub-system.

Recordkeeping Retrieval System Technological Requirements

Specification of the hardware and software needed for the recordkeeping retrieval sub-system.

Recordkeeping Storage System

A set of rules governing the storage of records, their digital components and/or information about the records and components in the recordkeeping system and the tools and mechanisms used to implement these rules.

Recordkeeping Storage System Activity Directives

Authoritative procedural orders/instruments, issued in response to ongoing system monitoring and performance evaluations, that are intended to help direct, update and coordinate the ongoing activities of the recordkeeping storage system.

Recordkeeping Storage System Design

The plan for the recordkeeping storage system outlining a set of rules governing the storage of records and/or information about records in a recordkeeping system, recordkeeping storage strategies, and recordkeeping storage technological requirements.

Recordkeeping Storage System Monitoring Requirements

The operational and administrative conditions that need to be established to facilitate ongoing assessment of the operation of the recordkeeping storage sub-system in relation to the established performance requirements for the sub-system.

Recordkeeping Storage System Performance Criteria

The operational benchmarks or standards for operation of the recordkeeping storage sub-system against which the continuing performance and adequacy of all activities, functions, processes and structures within the sub-system are measured.

Recordkeeping Storage System Performance Information

Continuously logged and updated documentation concerning the ability of the recordkeeping storage sub-system to fulfil its purpose and achieve its performance objectives.

Recordkeeping Storage System Performance Requirements

The operational and administrative specifications for measuring the continuing ability of the recordkeeping storage sub-system to fulfil its purpose.

Recordkeeping Storage System Policies

The collective, high-level management principles that guide and control development, implementation and execution of the recordkeeping storage sub-system.

Recordkeeping Storage System Rules and Procedures

The authoritative instructions governing the operation of the recordkeeping storage sub-system.

Recordkeeping Storage System Strategies

The authoritative objectives and methods governing the operation of the recordkeeping storage sub-system.

Recordkeeping Storage System Technological Requirements

Specification of the hardware and software needed for the recordkeeping storage sub-system.

Recordkeeping Storage that Needs Backing Up

All software applications and digital objects in the recordkeeping storage system that need backing up as specified by recordkeeping storage system strategies.

Recordkeeping System

A set of rules governing the storage, use, maintenance and disposition of records and/or information about records and the tools and mechanisms used to implement these rules.

Recordkeeping System Access Privileges

The authority to annotate, read, retrieve, transfer and/or destroy records in the recordkeeping system, granted to officers and employees of the creator.

Recordkeeping System Administrative Infrastructure

A comprehensive, integrated set of administrative policies, strategies, rules and procedures, and instruments that support recordkeeping activities and enable the recordkeeping system to meet its functional requirements.

Recordkeeping System Backup

A copy of all digital content in the recordkeeping storage system.

Recordkeeping System Design

The plan for the recordkeeping system outlining the recordkeeping metadata schemes, classification scheme, retention schedule, registration scheme, recordkeeping retrieval system, recordkeeping technological requirements, recordkeeping access privileges, and procedures for maintaining authentic records.

Recordkeeping System Functional Infrastructure Design

The comprehensive, integrated design for the recordkeeping system and each of its records information, storage, retrieval, access and disposition sub-systems.

Recordkeeping System Functional Requirements

The comprehensive and integrated performance, monitoring and technological requirements for the recordkeeping system.

Recordkeeping System Instruments

The administrative tools that support the maintenance of records in the recordkeeping system, such as recordkeeping metadata schemes, records registration and classification schemes, a retention schedule and controlled recordkeeping vocabularies and thesauri.

Recordkeeping System Monitoring Requirements

The operational and administrative conditions that need to be established to facilitate ongoing assessment of the operation of the recordkeeping system in relation to the established performance requirements for the system.

Recordkeeping System Performance Criteria

The operational benchmarks or standards for operation of the recordkeeping system against which the continuing performance and adequacy of all activities, functions, processes and structures within the system are measured.

Recordkeeping System Performance Information

Continuously logged and updated documentation about the ability of the individual components of the recordkeeping system to fulfil their purposes.

Recordkeeping System Performance Requirements

The operational and administrative specifications for measuring the continuing ability of the recordkeeping system to fulfil its purpose.

Recordkeeping System Policies

The collective, high-level management principles that guide and control development, implementation and execution of the recordkeeping system.

Recordkeeping System Rules and Procedures

The authoritative instructions governing the operation of the recordkeeping system.

Recordkeeping System Strategies

The authoritative objectives and methods governing the operation of the recordkeeping system.

Recordkeeping System Technological Requirements

Specification of the hardware and software needed for the recordkeeping system.

Record-making Access Privileges

The authority to compile, annotate, read, retrieve, transfer and/or destroy records in the record-making system, granted to officers and employees of the creator.

Record-making Activity Directives

Authoritative procedural orders/instruments intended to facilitate effective, co-ordinated and responsive record-making activities.

Record-making Capture System Design

The plan for the capture sub-system of the record-making system.

Record-making Capture System Monitoring Requirements

The operational and administrative conditions that need to be established to facilitate ongoing assessment of the operation of the record-making capture sub-system in relation to the established record-making requirements for the sub-system.

Record-making Capture System Performance Criteria

The operational benchmarks or standards for operation of the record-making capture sub-system against which the continuing performance and adequacy of all activities, functions, processes and structures within the sub-system are measured.

Record-making Capture System Performance Information

Continuously logged and updated documentation concerning the ability of the record-making capture sub-system to fulfil its purpose and achieve its performance objectives.

Record-making Capture System Performance Requirements

The operational and administrative specifications for measuring the continuing ability of the record-making capture sub-system to fulfil its purpose.

Record-making Capture System Policies

The collective, high-level management principles that guide and control development, implementation and execution of the record-making capture sub-system.

Record-making Capture System Rules and Procedures

The authoritative instructions governing the operation of the record-making capture sub-system.

Record-making Capture System Strategies

The authoritative objectives and methods governing the operation of the record-making capture sub-system.

Record-making Capture System Technological Requirements

Specification of the hardware and software needed for the record-making capture sub-system.

Record-making Declaration System Design

The plan for the declaration sub-system of the record-making system.

Record-making Declaration System Monitoring Requirements

The operational and administrative conditions that need to be established to facilitate ongoing assessment of the operation of the record-making declaration sub-system in relation to the established record-making requirements for the sub-system.

Record-making Declaration System Performance Criteria

The operational and administrative specifications for measuring the continuing ability of the record-making declaration sub-system to fulfil its purpose.

Record-making Declaration System Performance Information

Continuously logged and updated documentation concerning the ability of the record-making declaration sub-system to fulfil its purpose and achieve its performance objectives.

Record-making Declaration System Performance Requirements

The operational and administrative specifications for measuring the continuing ability of the record-making declaration sub-system to fulfil its purpose.

Record-making Declaration System Policies

The collective, high-level management principles that guide and control development, implementation and execution of the record-making declaration sub-system.

Record-making Declaration System Rules and Procedures

The authoritative instructions governing the operation of the record-making declaration sub-system.

Record-making Declaration System Strategies

The authoritative objectives and methods governing the operation of the record-making declaration sub-system.

Record-making Declaration System Technological Requirements

Specification of the hardware and software needed for the record-making declaration sub-system.

Record-making Execution System Design

The plan for the execution sub-system of the record-making system.

Record-making Execution System Monitoring Requirements

The operational and administrative conditions that need to be established to facilitate ongoing assessment of the operation of the record-making execution sub-system in relation to the established record-making requirements for the sub-system.

Record-making Execution System Performance Criteria

The operational benchmarks or standards for operation of the record-making execution sub-system against which the continuing performance and adequacy of all activities, functions, processes and structures within the sub-system are measured.

Record-making Execution System Performance Information

Continuously logged and updated documentation concerning the ability of the record-making execution sub-system to fulfil its purpose and achieve its performance objectives.

Record-making Execution System Performance Requirements

The operational and administrative specifications for measuring the continuing ability of the record-making execution sub-system to fulfil its purpose.

Record-making Execution System Policies

The collective, high-level management principles that guide and control development, implementation and execution of the record-making execution sub-system.

Record-making Execution System Rules and Procedures

The authoritative instructions governing the operation of the record-making execution sub-system.

Record-making Execution System Strategies

The authoritative objectives and methods governing the operation of the record-making execution sub-system.

Record-making Execution System Technological Requirements

Specification of the hardware and software needed for the record-making execution sub-system.

Record-making Identification System Design

The plan for the identification sub-system of the record-making system.

Record-making Identification System Monitoring Requirements

The operational and administrative conditions that need to be established to facilitate ongoing assessment of the operation of the record-making identification sub-system in relation to the established record-making requirements for the sub-system.

Record-making Identification System Performance Criteria

The operational and administrative specifications for measuring the continuing ability of the record-making identification sub-system to fulfil its purpose.

Record-making Identification System Performance Information

Continuously logged and updated documentation concerning the ability of the record-making identification sub-system to fulfil its purpose and achieve its performance objectives.

Record-making Identification System Performance Requirements

The operational benchmarks or standards for operation of the record-making identification sub-system against which the continuing performance and adequacy of all activities, functions, processes and structures within the sub-system are measured.

Record-making Identification System Policies

The collective, high-level management principles that guide and control development, implementation and execution of the record-making identification sub-system.

Record-making Identification System Rules and Procedures

The authoritative instructions governing the operation of the record-making identification sub-system.

Record-making Identification System Strategies

The authoritative objectives and methods governing the operation of the record-making identification sub-system.

Record-making Identification System Technological Requirements

Specification of the hardware and software needed for the record-making identification sub-system.

Record-making Metadata Schemes

Lists of all necessary record-making metadata to be recorded to ensure the reliability, accuracy, identification and integrity of records created in the record-making system.

Record-making Reporting Schemes

Plans for the systematic generation of documentation or reports of the creator's record-making activities according to logically structured conventions, methods and procedural rules.

Record-making System

A set of rules governing the making of records, and the tools and mechanisms used to implement these rules.

Record-making System Administrative Infrastructure

A comprehensive, integrated set of administrative policies, strategies, rules and procedures, and instruments that support record-making activities and enable the record-making system to meet its functional requirements.

Record-making System Design

The plan for the record-making system outlining the integrated business and documentary procedures, record-making metadata schemes, records forms, record-making technological requirements, and record-making access privileges.

Record-making System Functional Infrastructure Design

The comprehensive, integrated design for the record-making system and each of its documents and records capture, identification, declaration, execution and transfer sub-systems.

Record-making System Functional Requirements

The comprehensive and integrated performance, monitoring and technological requirements for the record-making system.

Record-making System Instruments

The administrative tools that support the preservation of records in the record-making system, such as record-making metadata schemes and records forms.

Record-making System Monitoring Requirements

The operational and administrative conditions that need to be established to facilitate ongoing assessment of the operation of the record-making system in relation to the established record-making system requirements.

Record-making System Performance Criteria

The operational benchmarks or standards for operation of the record-making system against which the continuing performance and adequacy of all activities, functions, processes and structures within the system are measured.

Record-making System Performance Information

Continuously logged and updated documentation concerning the ability of the individual components of the record-making system to fulfil their purposes.

Record-making System Performance Requirements

The operational and administrative specifications for measuring the continuing ability of the record-making system to fulfil its purpose.

Record-making System Policies

The collective, high-level management principles that guide and control development, implementation and execution of the record-making system.

Record-making System Rules and Procedures

The authoritative instructions governing the operation of the record-making system.

Record-making System Strategies

The authoritative objectives and methods governing the operation of the record-making system.

Record-making System Technological Requirements

Specification of the hardware and software needed for the record-making system.

Record-making Transfer System Activity Directives

Authoritative procedural orders/instruments intended to facilitate effective, co-ordinated and responsive record-making transfer system activities.

Record-making Transfer System Design

The plan for the transfer sub-system of the record-making system.

Record-making Transfer System Monitoring Requirements

The operational and administrative conditions that need to be established to facilitate ongoing assessment of the operation of the record-making transfer sub-system in relation to the established record-making requirements for the sub-system.

Record-making Transfer System Performance Criteria

The operational benchmarks or standards for operation of the record-making transfer sub-system against which the continuing performance and adequacy of all activities, functions, processes and structures within the sub-system are measured.

Record-making Transfer System Performance Information

Continuously logged and updated documentation concerning the ability of the record-making transfer sub-system to fulfil its purpose and achieve its performance objectives.

Record-making Transfer System Performance Requirements

The operational and administrative specifications for measuring the continuing ability of the record-making transfer sub-system to fulfil its purpose.

Record-making Transfer System Policies

The collective, high-level management principles that guide and control development, implementation and execution of the record-making transfer sub-system.

Record-making Transfer System Rules and Procedures

The authoritative instructions governing the operation of the record-making transfer sub-system.

Record-making Transfer System Strategies

The authoritative objectives and methods governing the operation of the record-making transfer sub-system.

Record-making Transfer System Technological Requirements

Specification of the hardware and software needed for the record-making transfer sub-system.

Records Forms

Specifications of the documentary forms for the various types of records of the creator.

Records Manager

Person responsible for the management of active and semi-active records of a creator. The role of a records manager should be that of a trusted records officer.

Records to be Accessioned

Records in transfers that have been registered, are authorized, meet the terms and conditions of transfer, and meet the preserver's feasibility requirements, and consequently can be accessioned for permanent preservation.

Records Transfer Registration Scheme

A plan for assigning a unique identifier to each received records transfer.

Registered Preservation Access Requests

Access requests for preserved records and/or information about the records that have been received from internal and external users and registered by the preserver.

Registered Recordkeeping Access Requests

Access requests for kept records and/or information about the records that have been received from internal and external users and registered by the records manager.

Registered Transfers

Transfers of records selected for preservation that have been received from the creator and registered by the preserver.

Reports on Operation of Permanent Preservation Activity

Documentation concerning the efficacy of the operation of activities of the permanent preservation system.

Reports on Operation of Recordkeeping Activity

Documentation concerning the efficacy of the operation of activities of the recordkeeping system.

Reports on Operation of Record-making Activity

Documentation concerning the efficacy of the operation of the activities of the record-making system.

Reproduced Kept Records Presented to Users

Authentic representations or other versions of kept records reconstituted from their digital components.

Reproduced Preserved Records Presented to Users

Authentic representations or other versions of records reconstituted from their digital components.

Reproducible Kept Records Issued to Users

The digital components of kept records together with the technical information or software necessary to reproduce them from the digital components.

Reproducible Preserved Records Issued to Users

The digital components of preserved records together with the technical information necessary to reproduce them from the digital components.

Request Specifications for Kept Records

Instructions to the recordkeeping retrieval and access systems on how to fulfil requests for digital components of kept records and/or information about kept records in storage.

Request Specifications for Preserved Records

Instructions to the preservation retrieval and access systems on how to fulfil requests for digital components of preserved records and/or information about preserved records in storage.

Requests for Updated Information About Creator

Requests for updated information concerning any significant changes to the designated preserver's mission, organizational structure, activities, and existing technological, financial and human resources, as well as information about any significant changes to the preserver's preservation-related needs and risks.

Retention Schedule

A document providing description of records series and/or classes and specifying their authorized dispositions.

Retrieval Requests for Kept Records and/or Information

Access requests for kept records and/or information translated into requests to the record-keeping storage and information systems for retrieval of the exact digital components and/or information required to fulfil the access requests.

Retrieval Requests for Preserved Records and/or Information

Access requests for preserved records and/or information translated into requests to the permanent preservation storage and information systems for retrieval of the exact digital components and/or information required to fulfil the access requests.

Retrieved Digital Components of Kept Records

The digital components of kept records retrieved from storage in response to requests.

Retrieved Digital Components of Kept Records that Need Updating or Correcting

Digital components of kept records that cannot be reconstituted or presented in accordance with current recordkeeping access strategies applicable to those records.

Retrieved Digital Components of Preserved Records

The digital components of preserved records retrieved from storage in response to requests.

Retrieved Digital Components of Preserved Records that Need Updating or Correcting

Digital components of preserved records that cannot be reconstituted or presented in accordance with current preservation access strategies applicable to those records.

Retrieved Information About Kept Records

Documentation about the identity, integrity, format, form, context, content or other characteristics of kept records retrieved from the recordkeeping information sub-system and/or, as necessary, through examination of the records themselves, in response to requests.

Retrieved Information About Preserved Records

Documentation about the identity, integrity, format, form, context, content or other characteristics of preserved records retrieved from the permanent preservation information sub-system and/or, as necessary, through examination of the records themselves, in response to requests.

Standards

Sets of rules or guidelines co-operatively adhered to by peer entities.

State of Technology

The availability and/or capability of technology at any given time.

Technical Description of Records Proposed for Preservation

Information about the technical components and requirements of records proposed for preservation that is necessary for helping to determine the feasibility of preserving the records.

Terms and Conditions of Transfer

Formal instruments that identify in archival and technological terms digital records to be transferred, together with relevant documentation, and that identifies the medium and format of transfers, when the transfers will occur, and the parties to the transfers.

Tools

Information technology and other equipment and supplies used to manage the lifecycle of records.

Transfer Documentation for Preservation

Formal instruments indicating the entity transferring records, the contents of transfers and the terms and conditions governing the transfers, copies of which are sent to the preserver and maintained by the creator as evidence of the transaction.

Transfer Documentation for Recordkeeping

Formal instruments indicating the entity transferring records, the contents of transfers and, as necessary, information about the records being transferred for the purposes of maintaining the records in the recordkeeping system and for providing evidence of the transaction.

Unmediated Access Requests for Kept Records and/or Information

Requests from external users to consult or receive copies of kept records and/or information about kept records that were formulated without the assistance of records management staff or access to record indexing instruments.

Unmediated Access Requests for Preserved Records and/or Information

Requests from external users to consult or receive copies of preserved records and/or information about preserved records that were formulated without the assistance of archives staff or access to record descriptions or other formal description instruments.

Updated Information About Creator

Updated information concerning significant changes to the records creator's mission, organizational structure, activities, and existing technological, financial and human resources, as well as to the creator's records-related needs and risks.

Updated Information for Preservation

Updated information about records and their elements and components that is needed for preservation.

Updated Kept Records

Kept records whose digital components have been converted or updated.

Updated Preserved Records

Preserved records whose digital components have been converted or updated.

Valuation Determinations

Decisions concerning the overall value of appraised records in relation to assessments of their authenticity and capacity to serve the continuing interests of their creator and/or society, as well as their suitability and relevance in relation to the preserver's mission and existing holdings.

Verified Information About Retrieved Digital Components of Kept Records

Technical documentation compiled about digital components of kept records retrieved from storage that has been verified to ensure that the information received is correct (i.e., pertains to the requested records), complete and sufficient to enable the records to be reconstituted in authentic form from the retrieved components.

Verified Information About Retrieved Digital Components of Preserved Records

Technical documentation compiled about digital components of preserved records retrieved from storage that has been verified to ensure that the information received is correct (i.e., pertains to the requested records), complete and sufficient to enable the records to be reconstituted in authentic form from the retrieved components.

Verified Information About Retrieved Kept Records

Documentation compiled about kept records retrieved from storage that has been verified to ensure that the information received is correct (i.e., pertains to the requested records), complete and sufficient to fulfil access requests: 1) for records properly ordered with respect to their relationships with each other, or 2) for information about the identity, integrity, format, form, context, content or other characteristics of the records.

Verified Information About Retrieved Preserved Records

Documentation compiled about preserved records retrieved from storage that has been verified to ensure that the information received is correct (i.e., pertains to the requested records), complete and sufficient to fulfil access requests: 1) for records properly ordered with respect to their relationships with each other, or 2) for information about the identity, integrity, format, form, context, content or other characteristics of the records.

Verified Retrieved Digital Components of Kept Records

The aggregations of digital components of kept records retrieved from storage in response to requests, which have been verified to ensure that all requested components have been received.

Verified Retrieved Digital Components of Preserved Records

The aggregations of digital components of preserved records retrieved from storage in response to requests, which have been verified to ensure that all requested components have been received.

Verified Retrieved Information About Kept Records

Documentation about the identity, integrity, format, form, context, content or other characteristics of kept records retrieved from the recordkeeping information sub-system and/or, as necessary, through examination of the records themselves, which has been verified to ensure that the information received is correct (i.e., pertains to the requested records), complete and sufficient to satisfy access requests for information about kept records.

Verified Retrieved Information About Preserved Records

Documentation about the identity, integrity, format, form, context, content or other characteristics of preserved records retrieved from the permanent preservation information sub-system and/or, as necessary, through examination of the records themselves, which has been verified to ensure that the information received is correct (i.e., pertains to the requested records), complete and sufficient to satisfy access requests for information about preserved records.

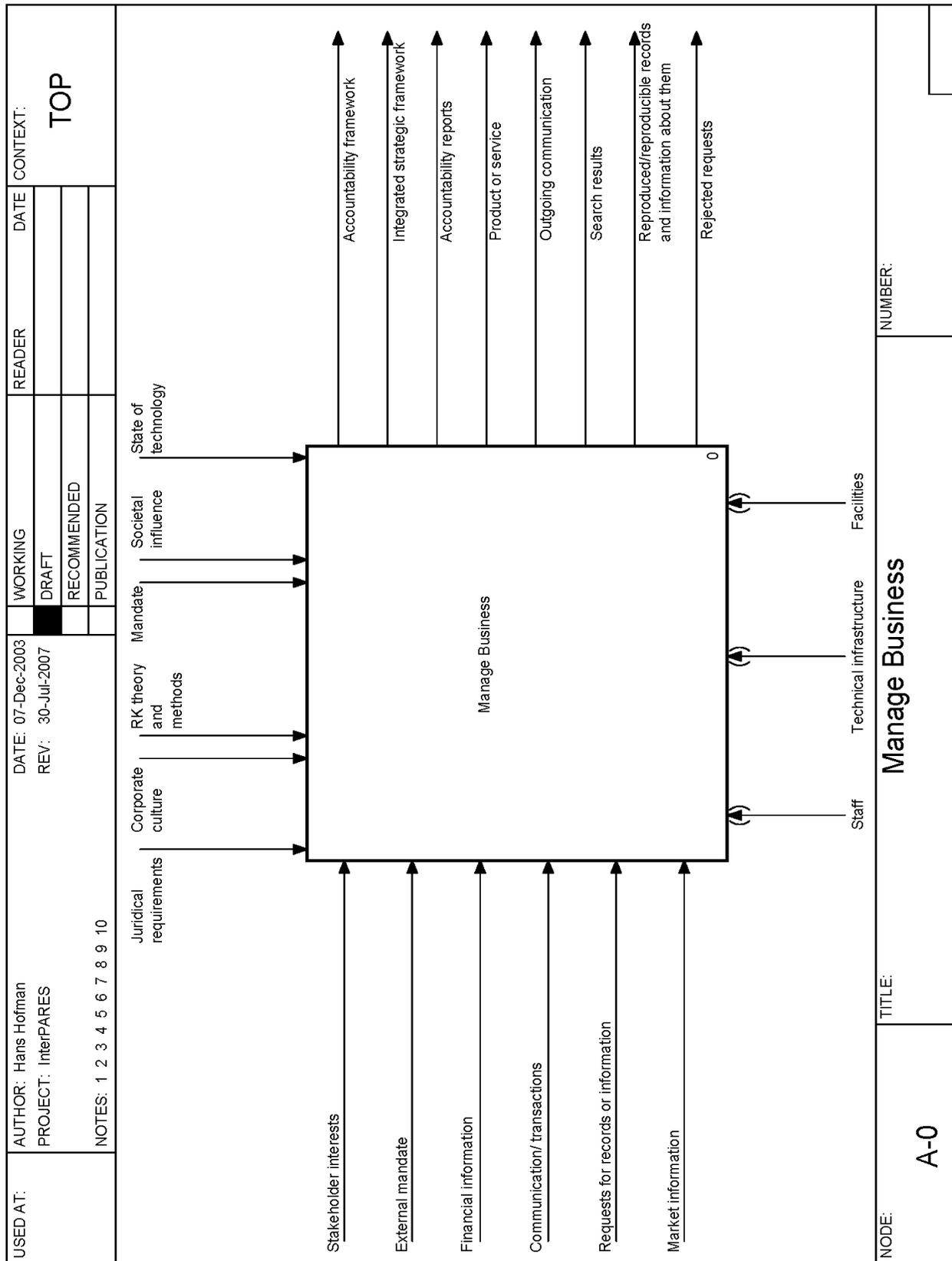
Verified Transfers

Transfers of records selected for preservation that have been successfully received from the creator (i.e., were not corrupted in transmission) and include all records and aggregates of records specified in the terms and conditions of the transfers.

Appendix 15

Business-driven Recordkeeping Model

Diagrams and Definitions

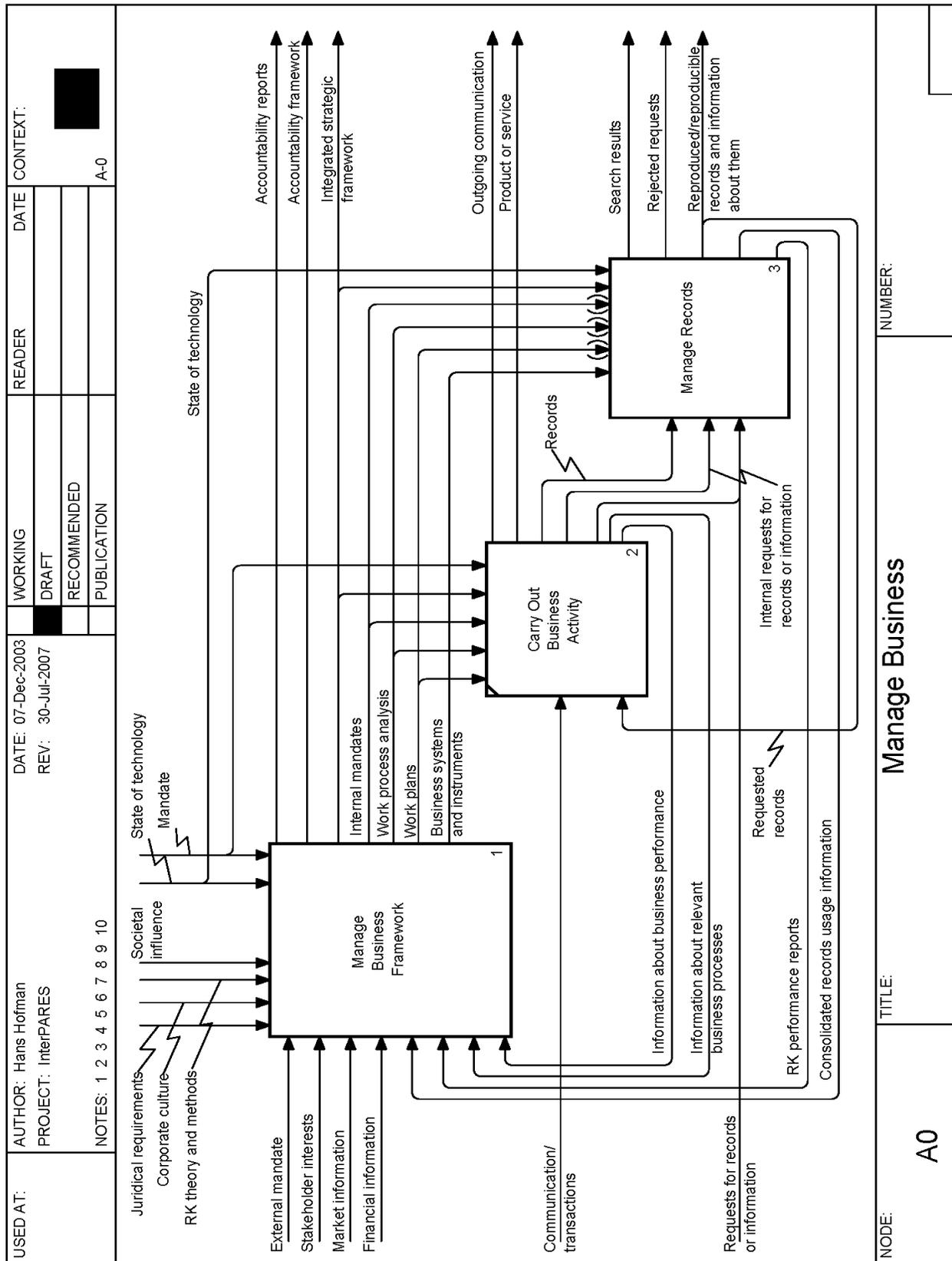


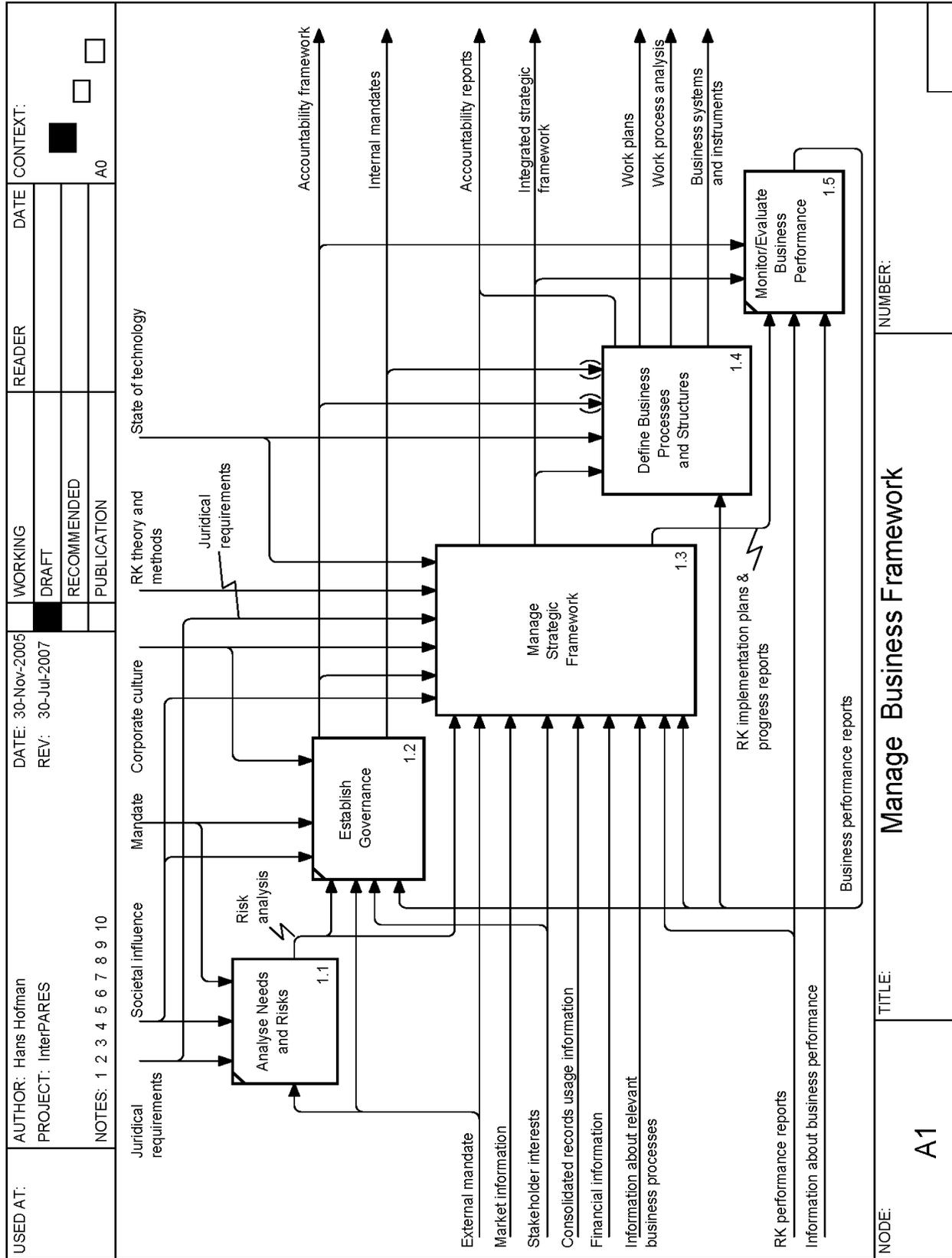
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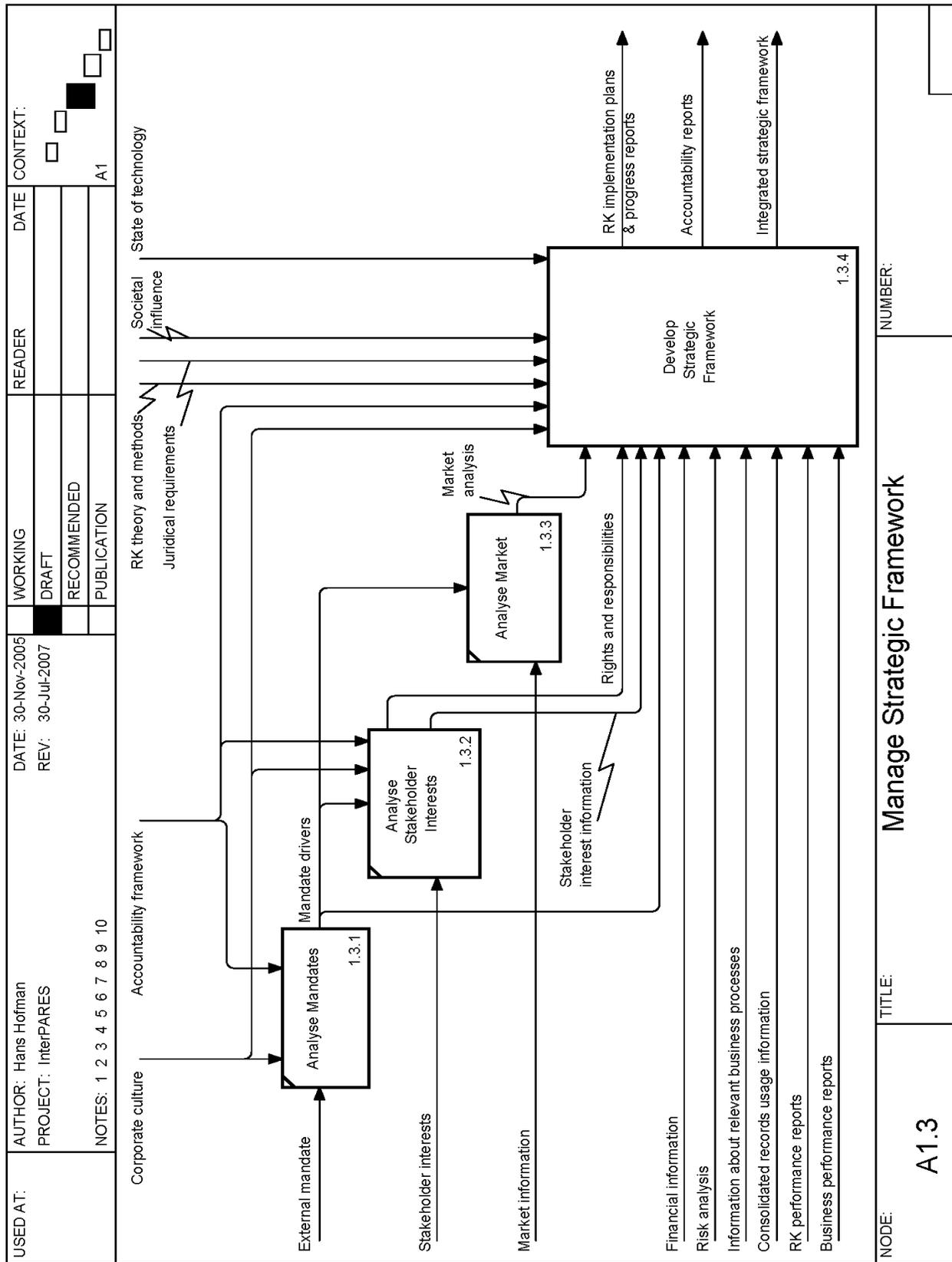
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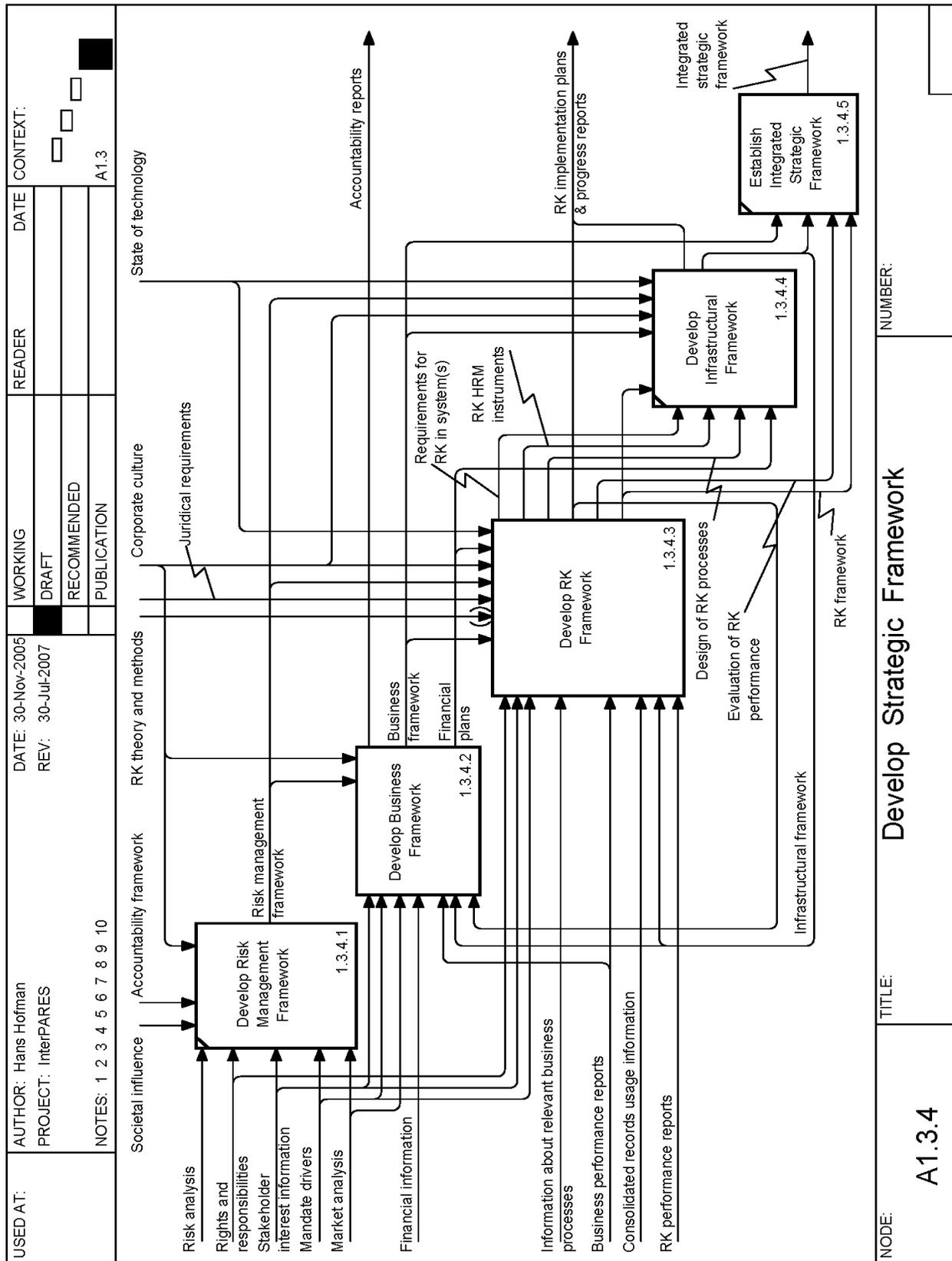
Manage Business

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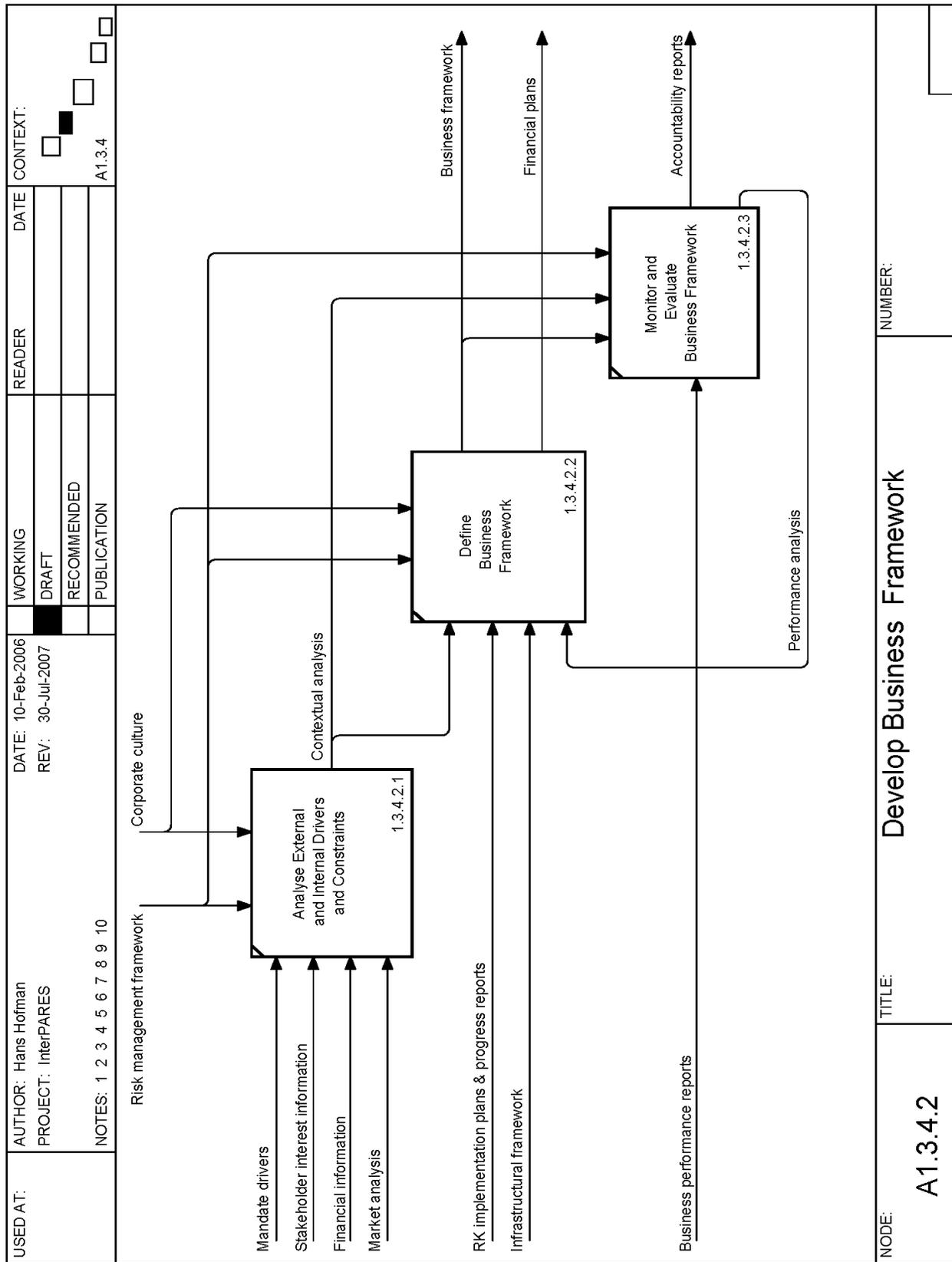






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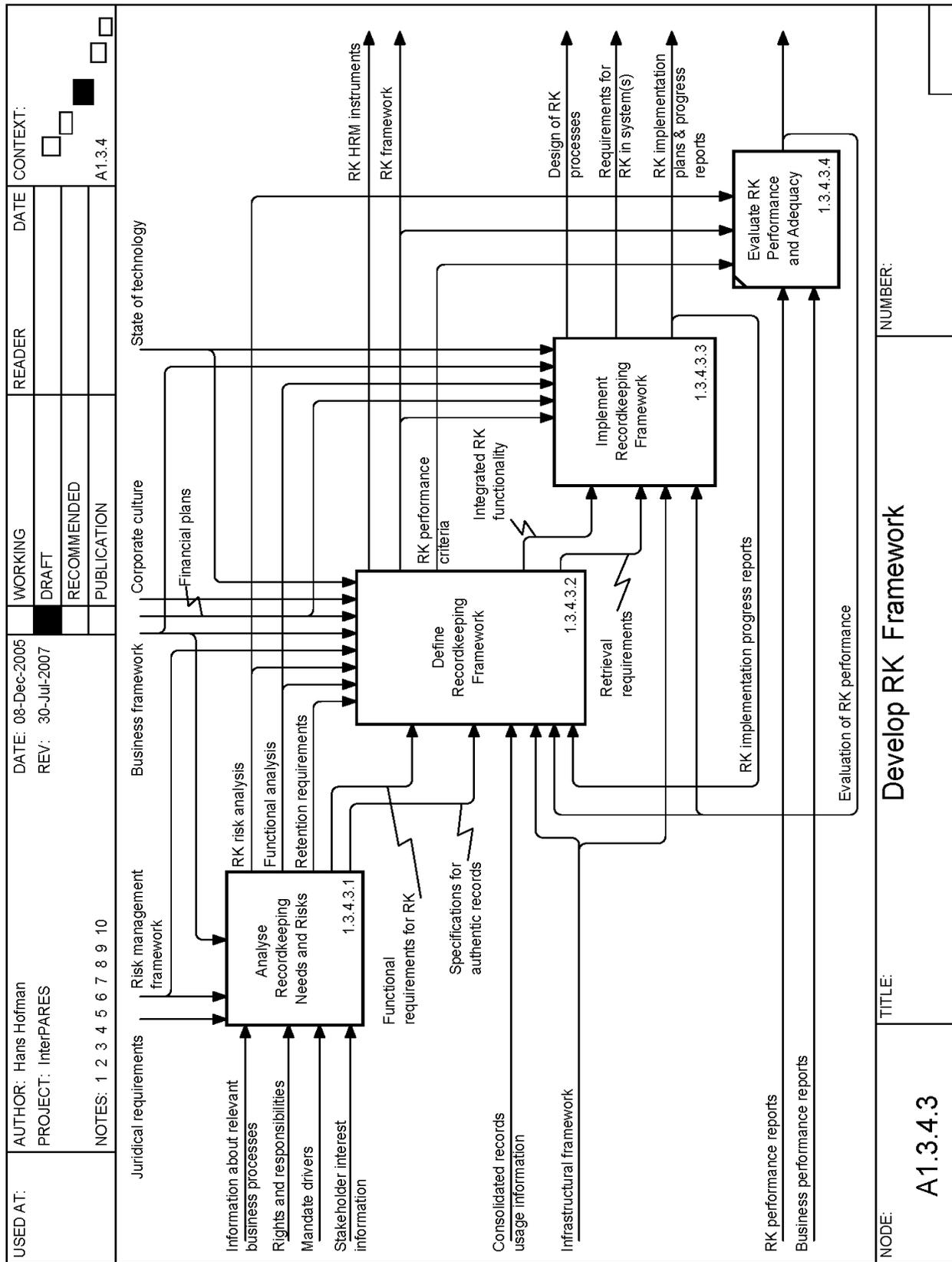
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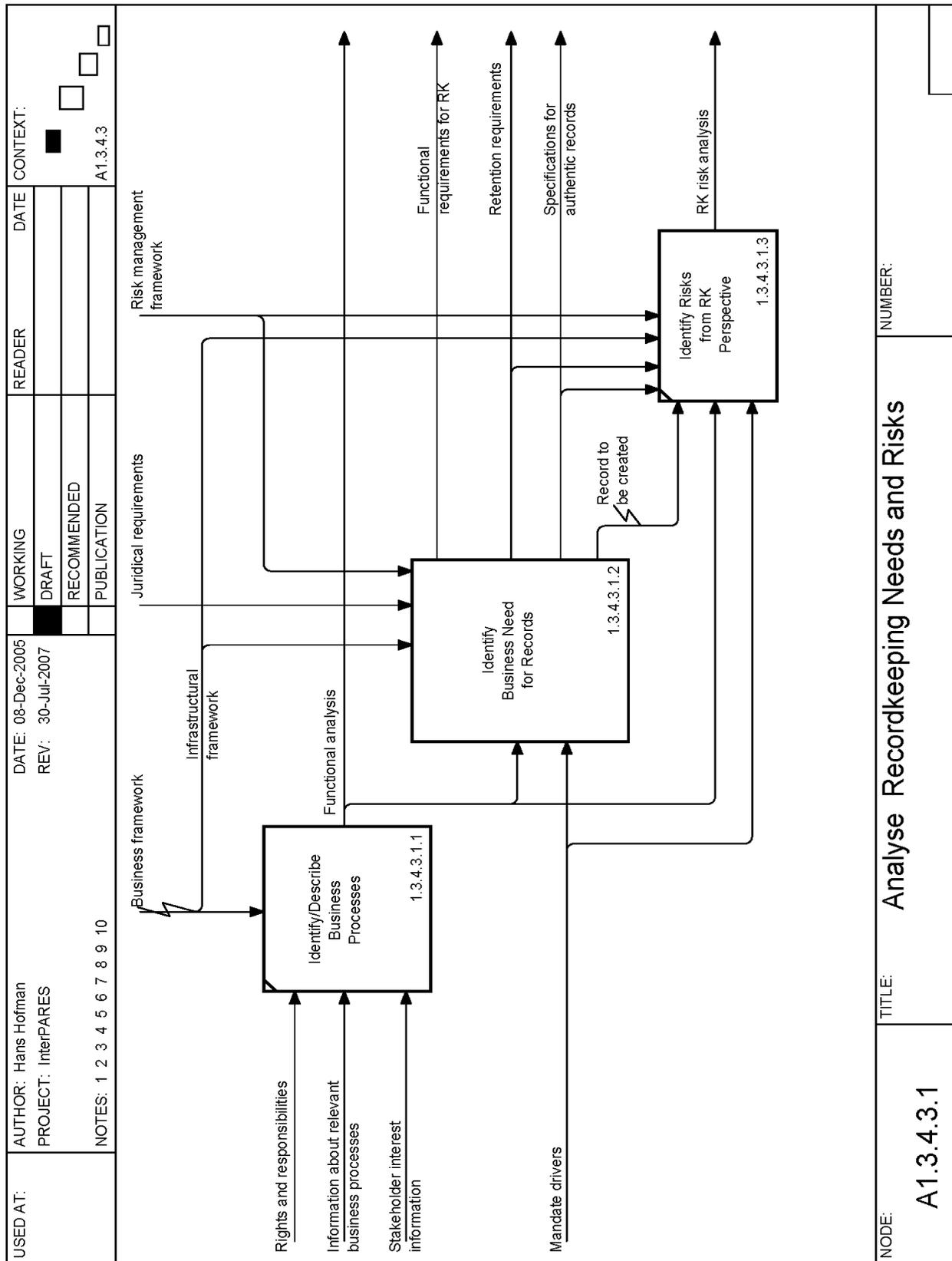


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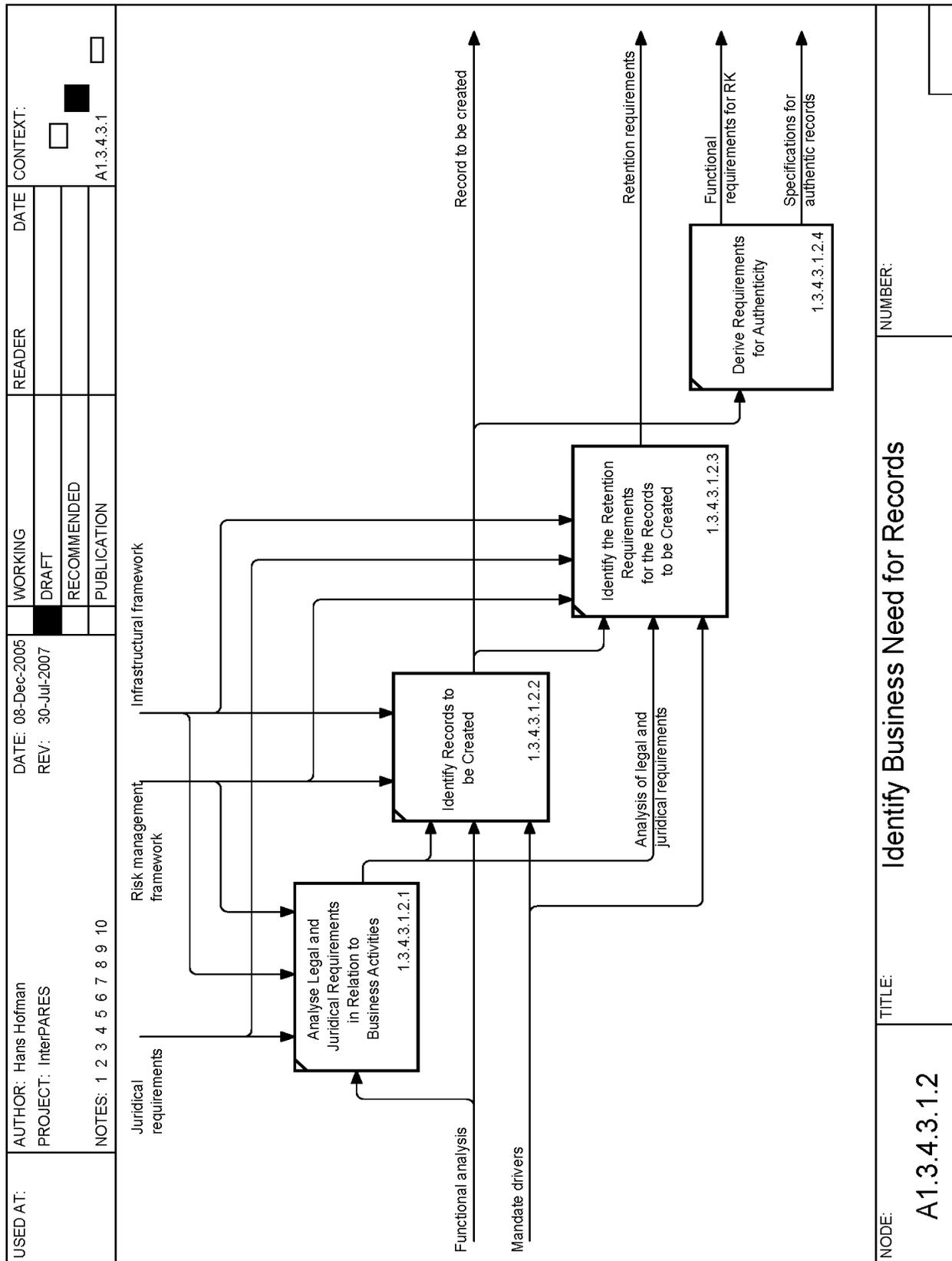




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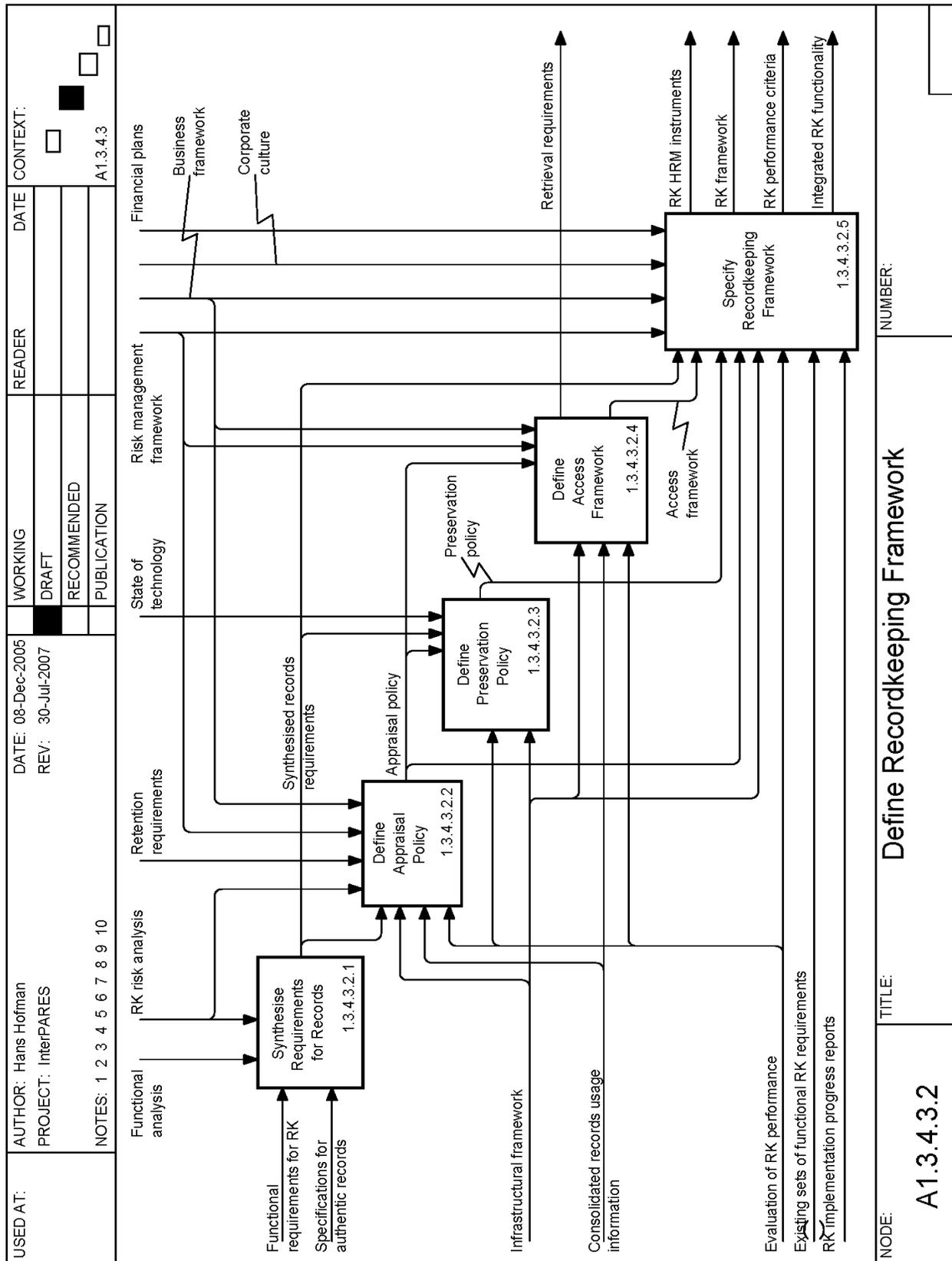
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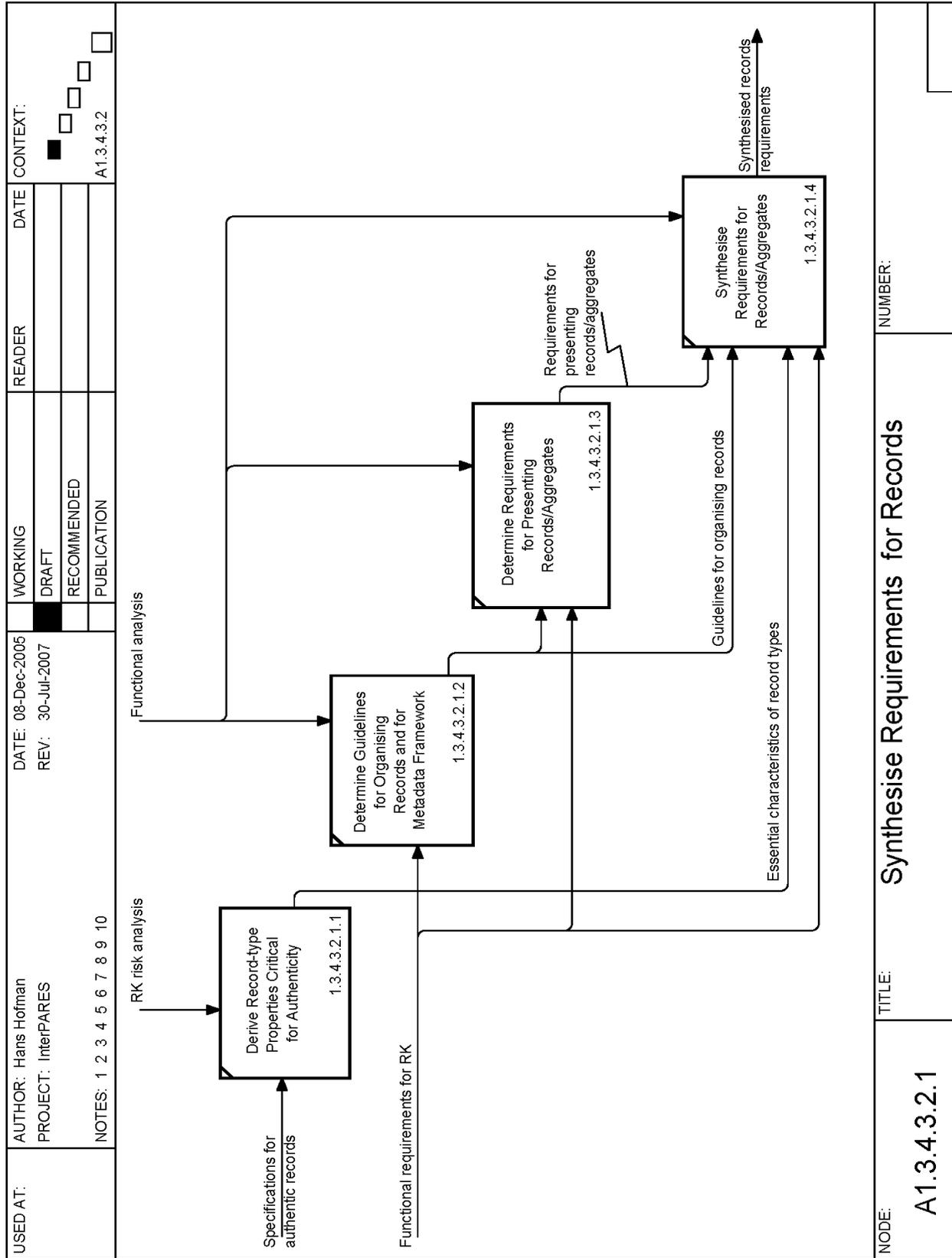


Define Recordkeeping Framework

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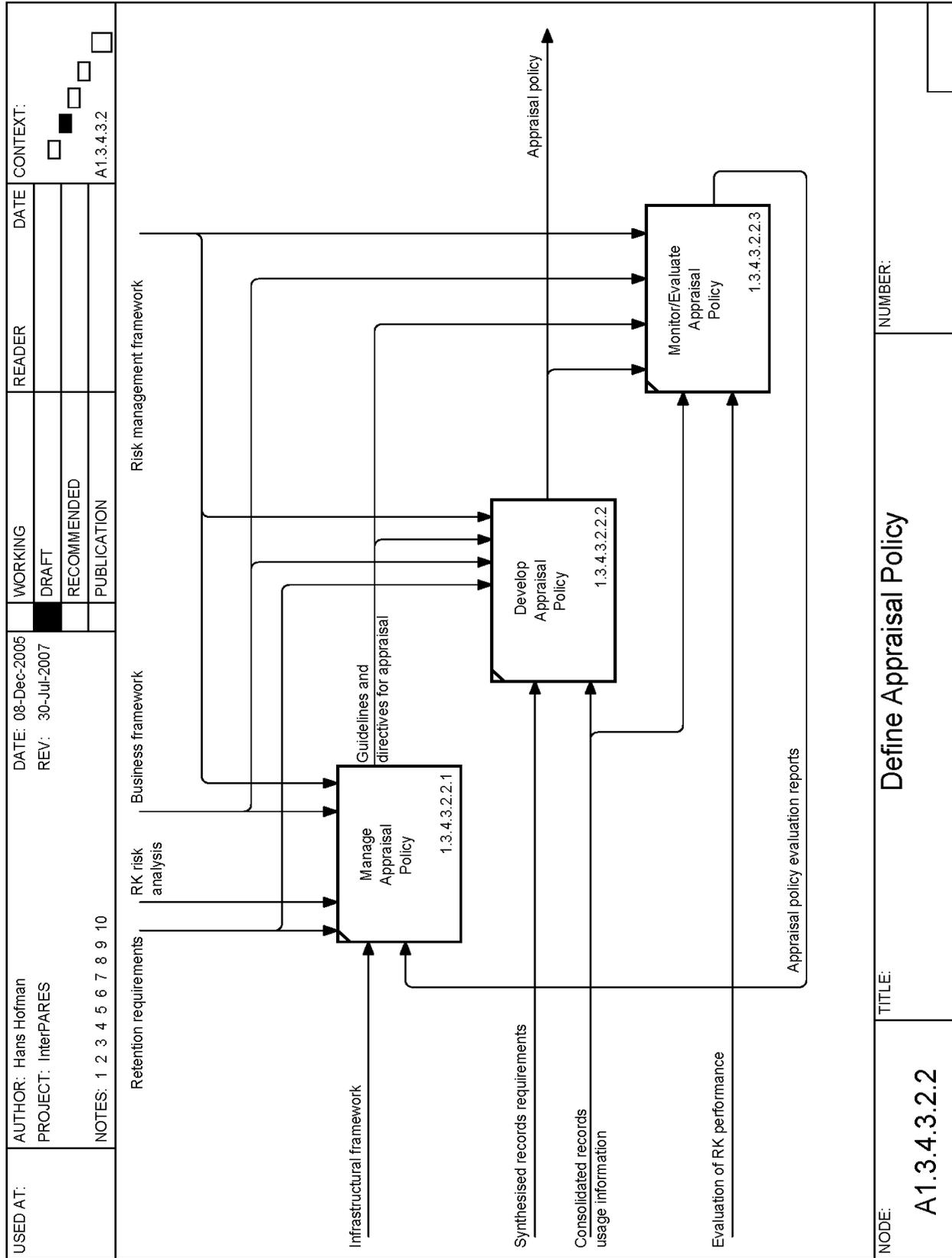
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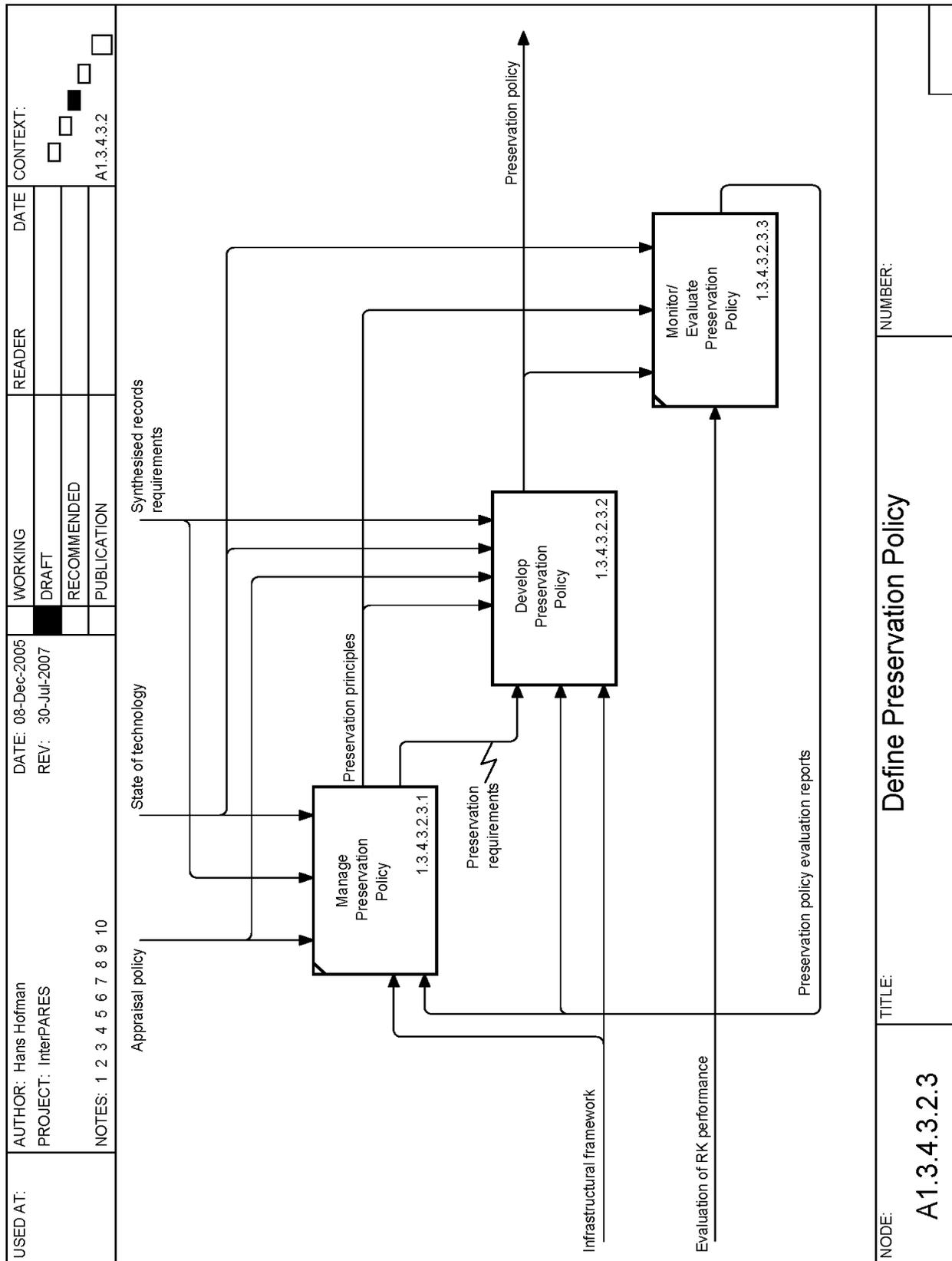
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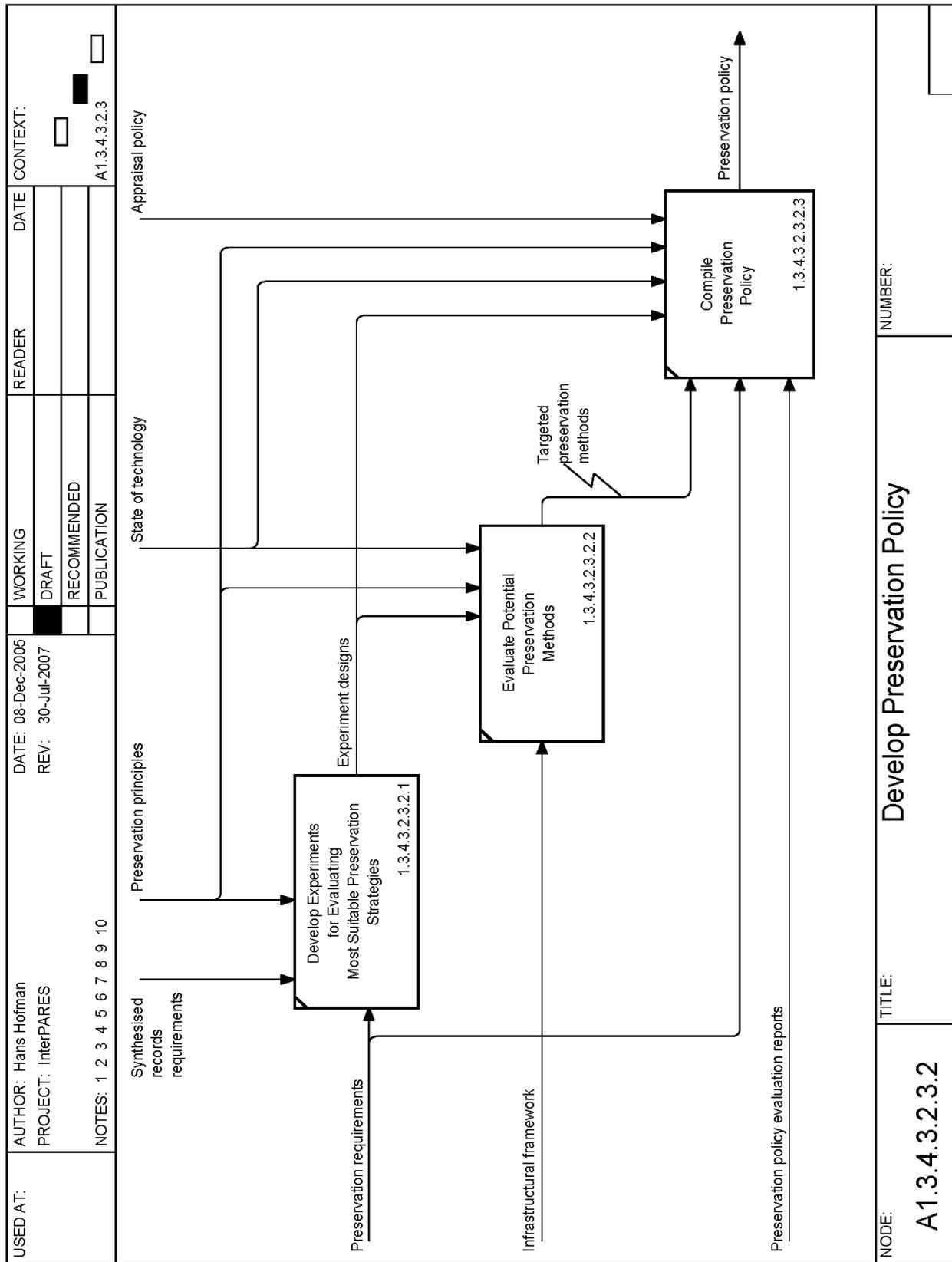
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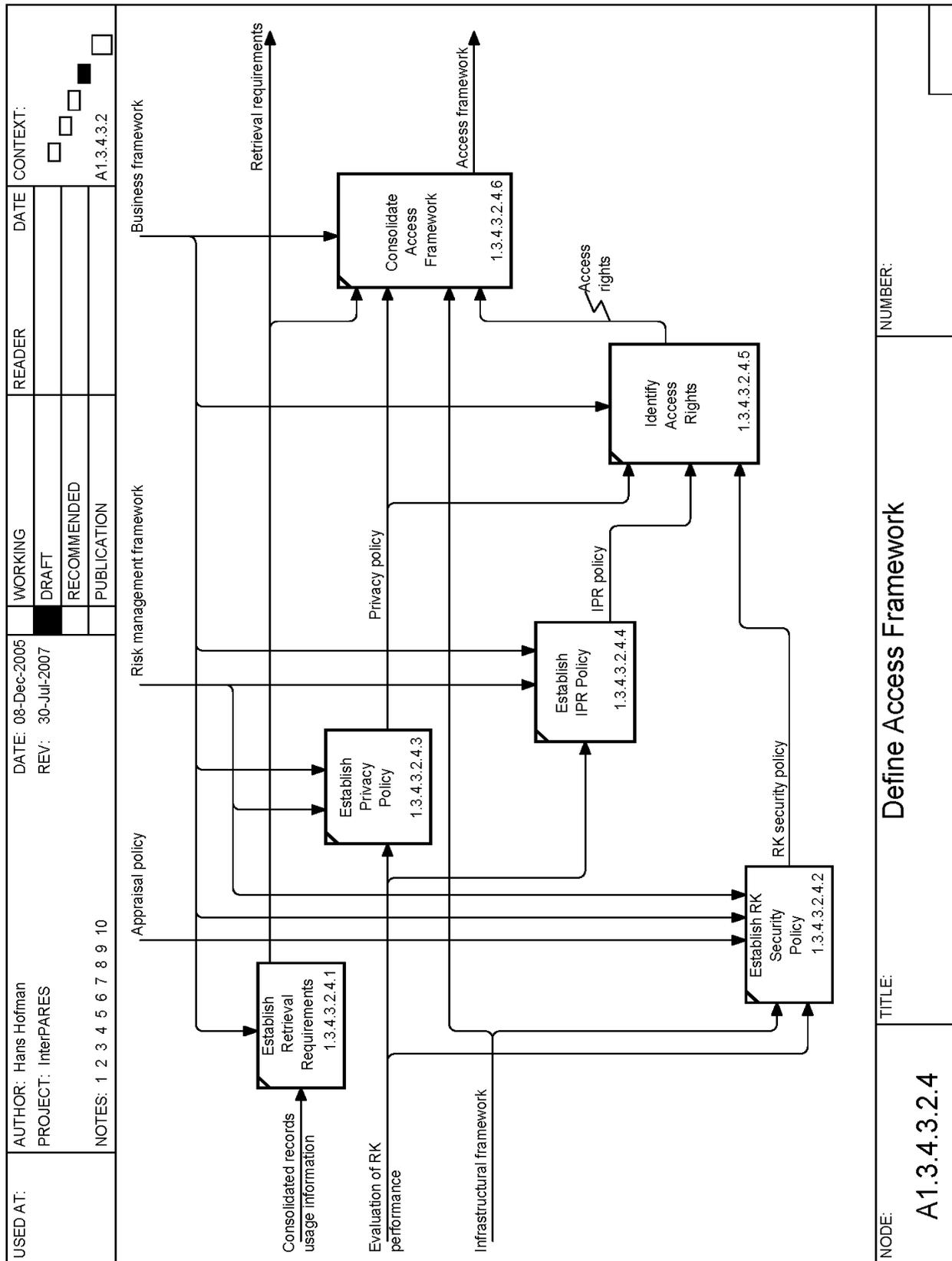


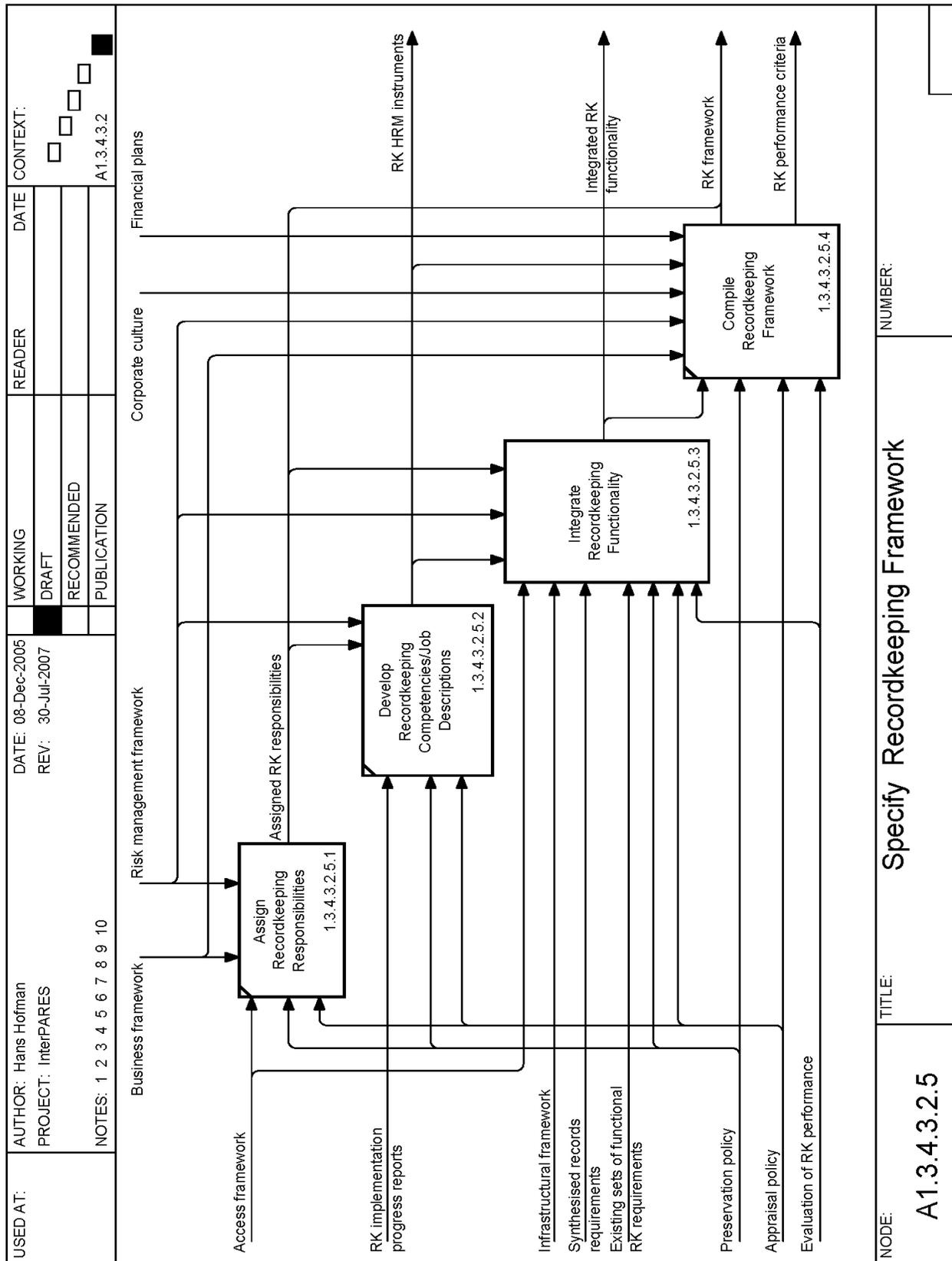
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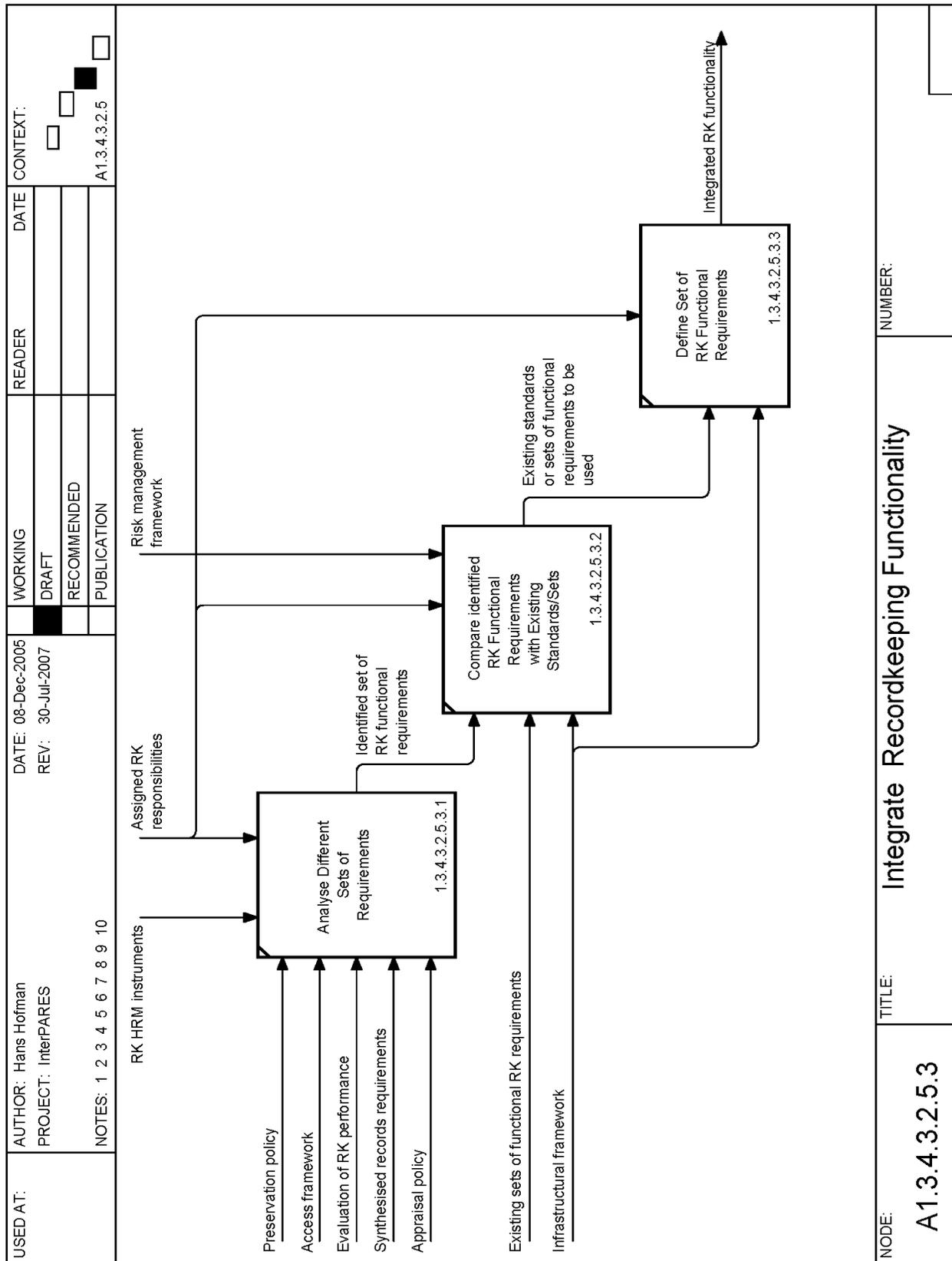






Specify Recordkeeping Framework

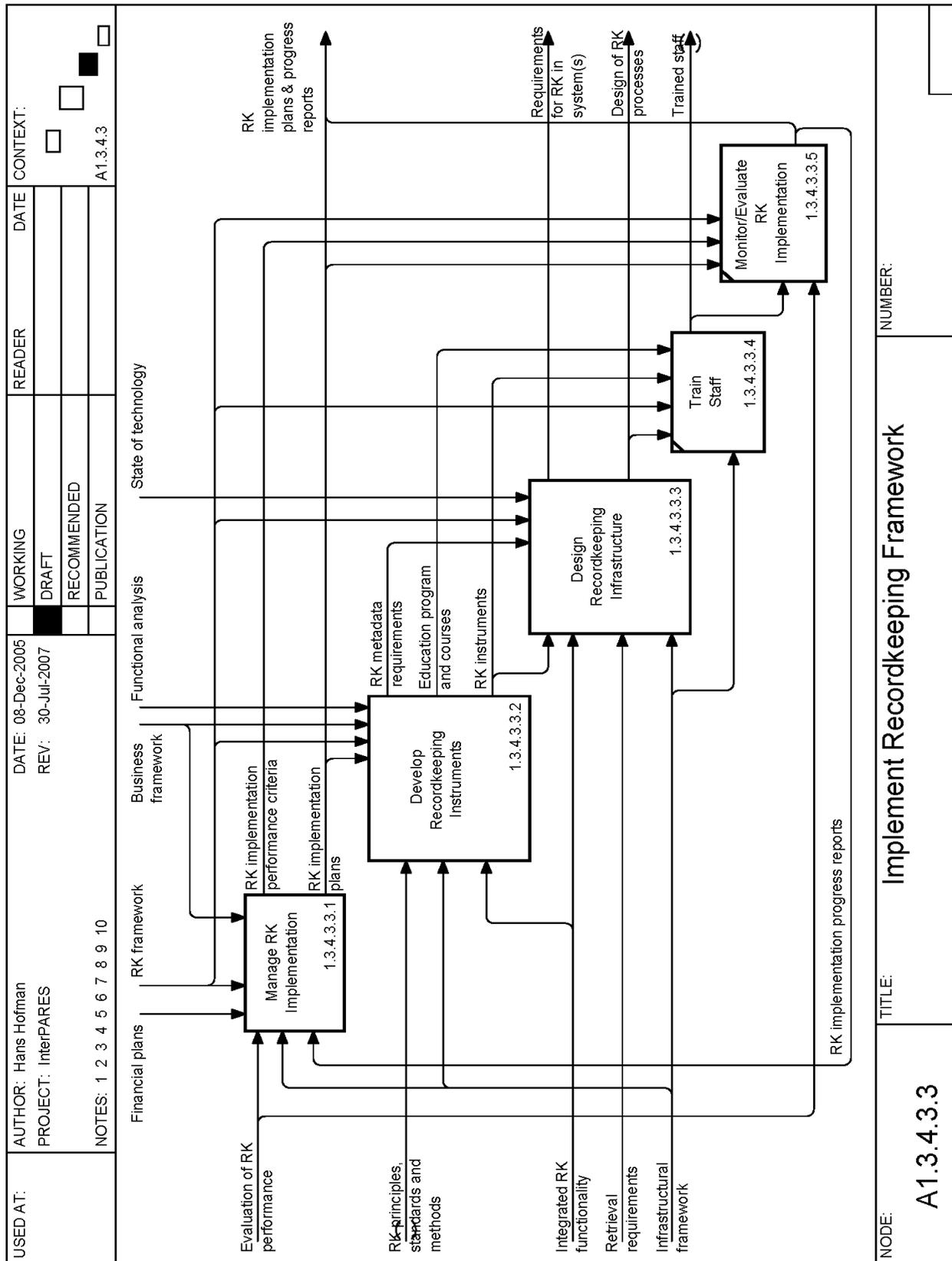
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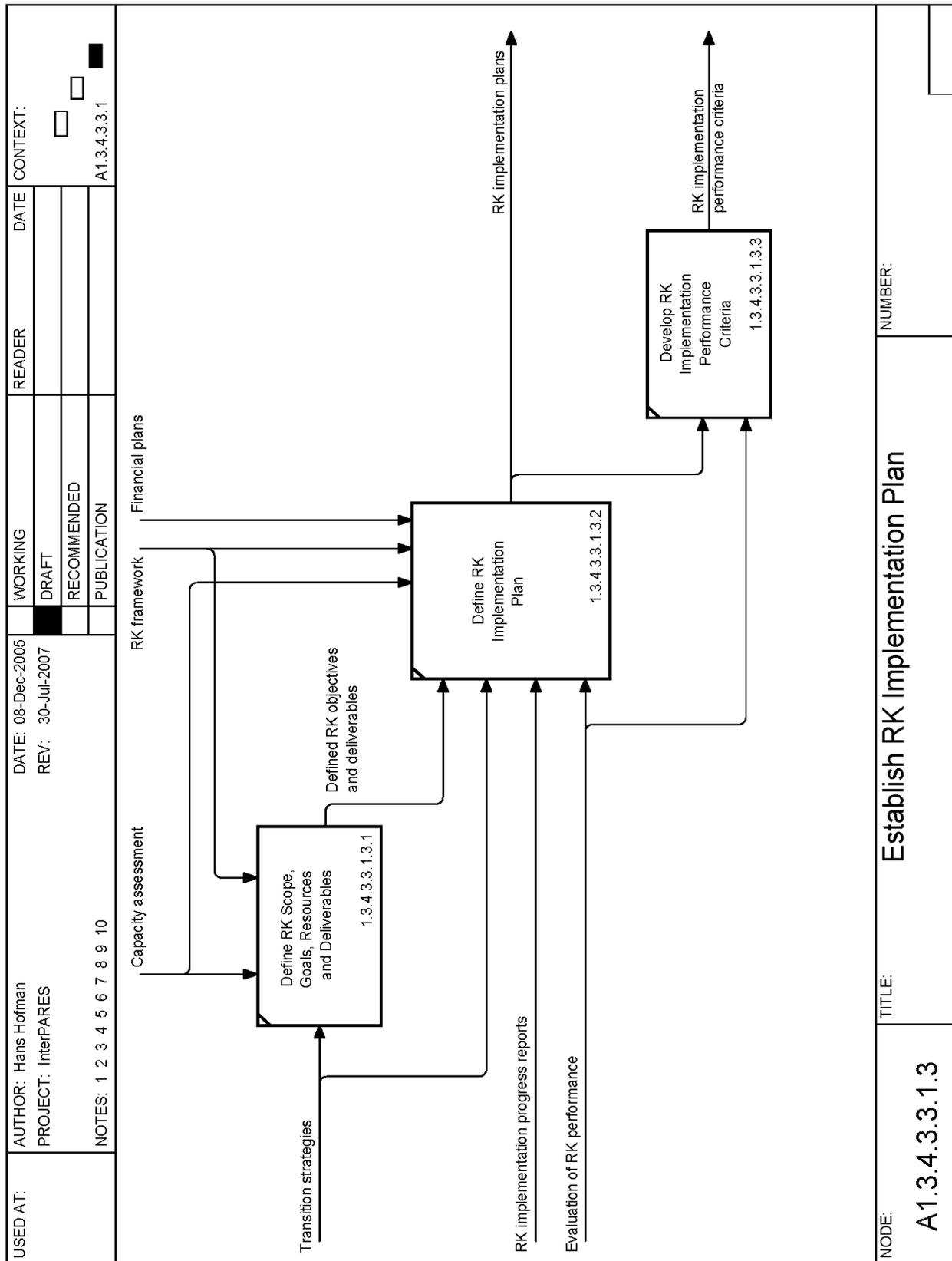


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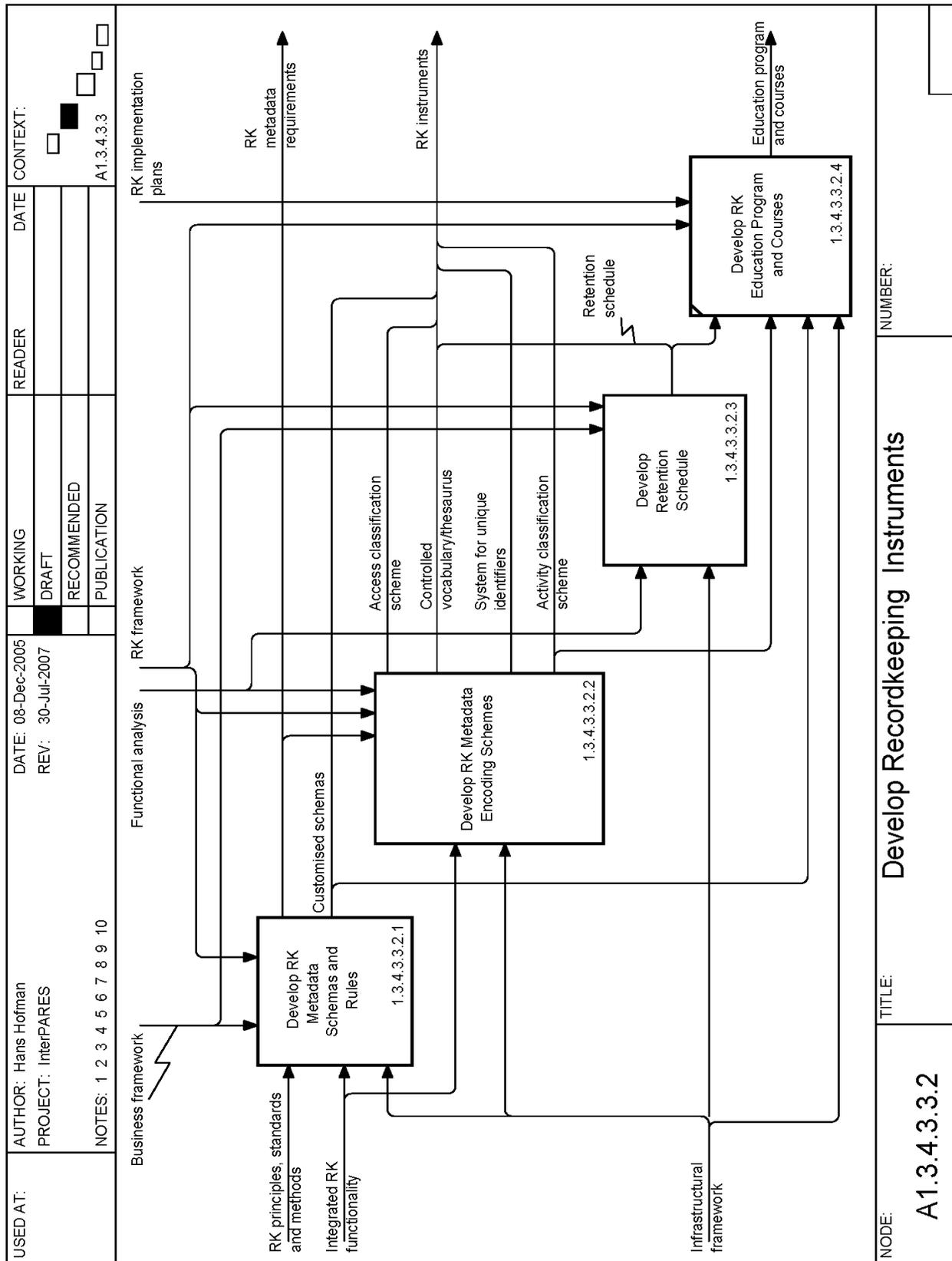
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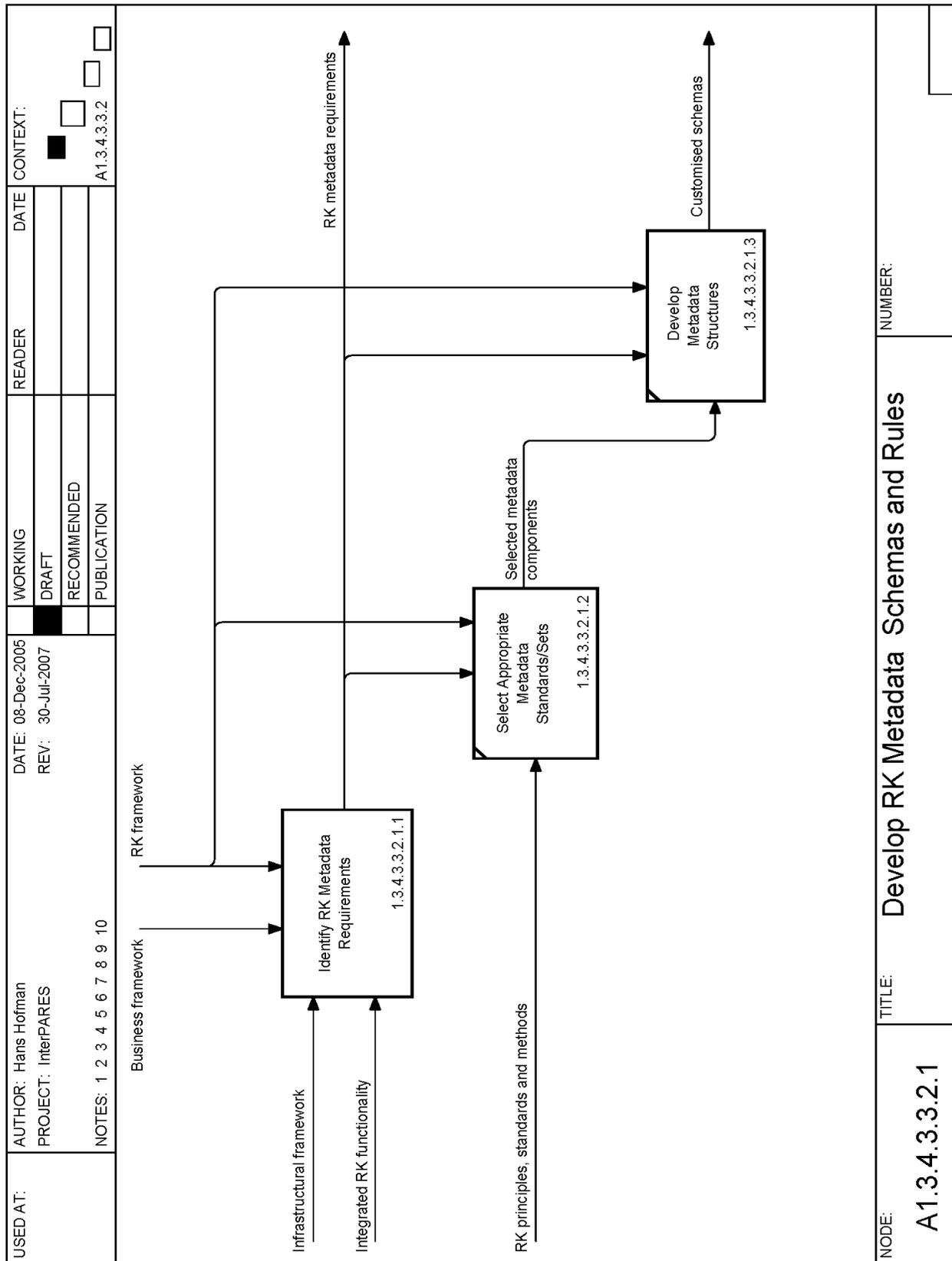
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Establish RK Implementation Plan

NUMBER:



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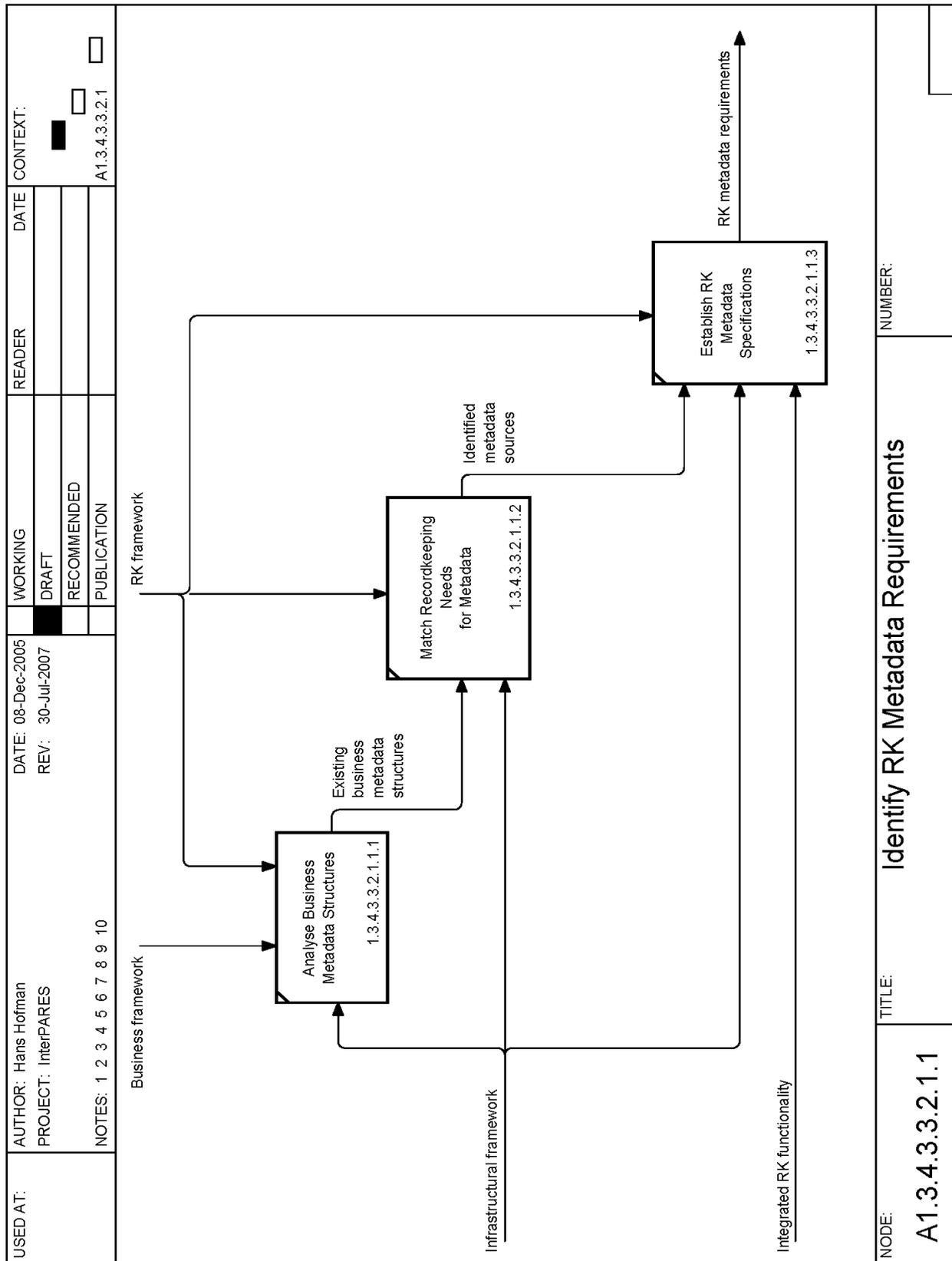
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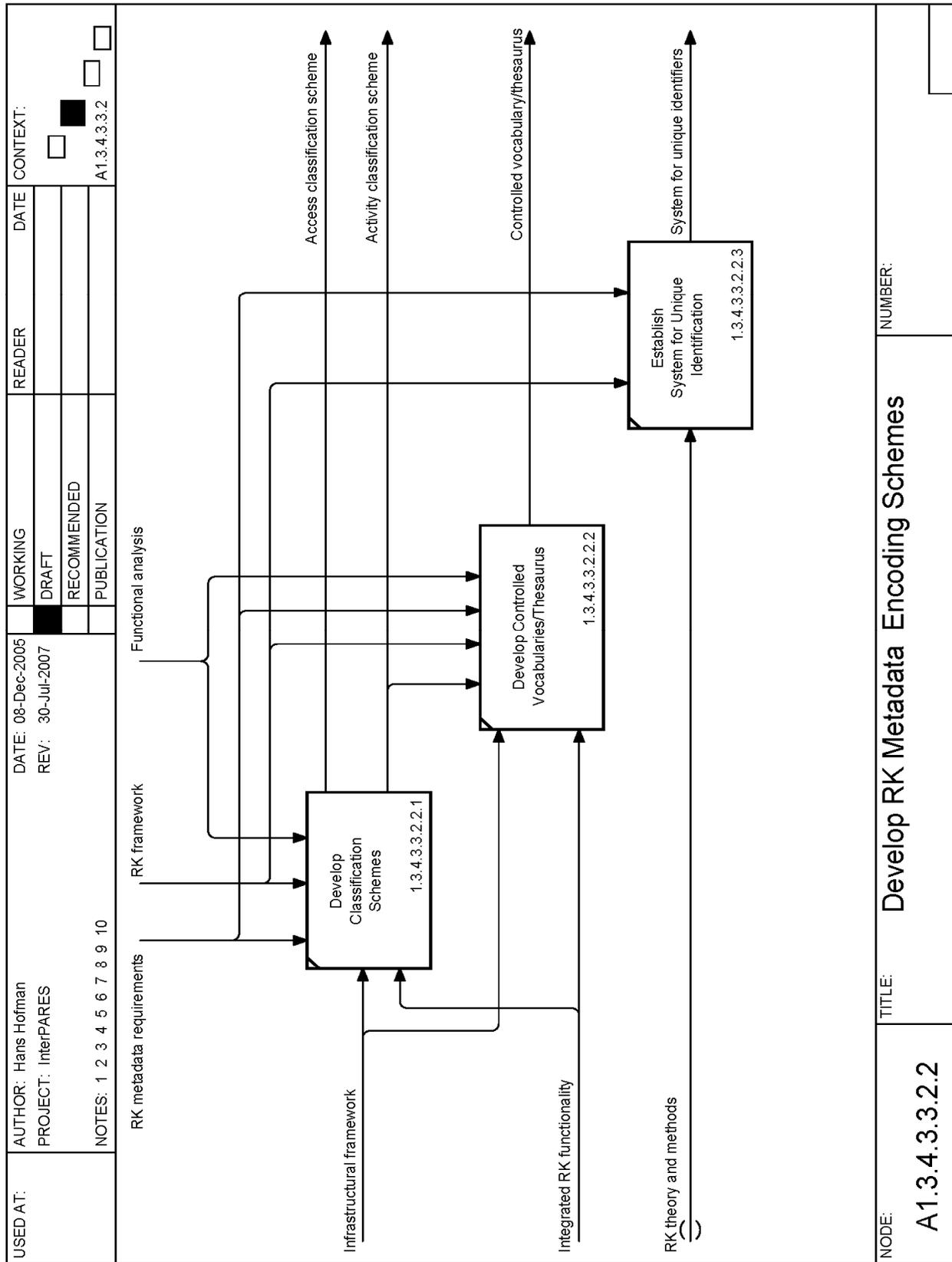
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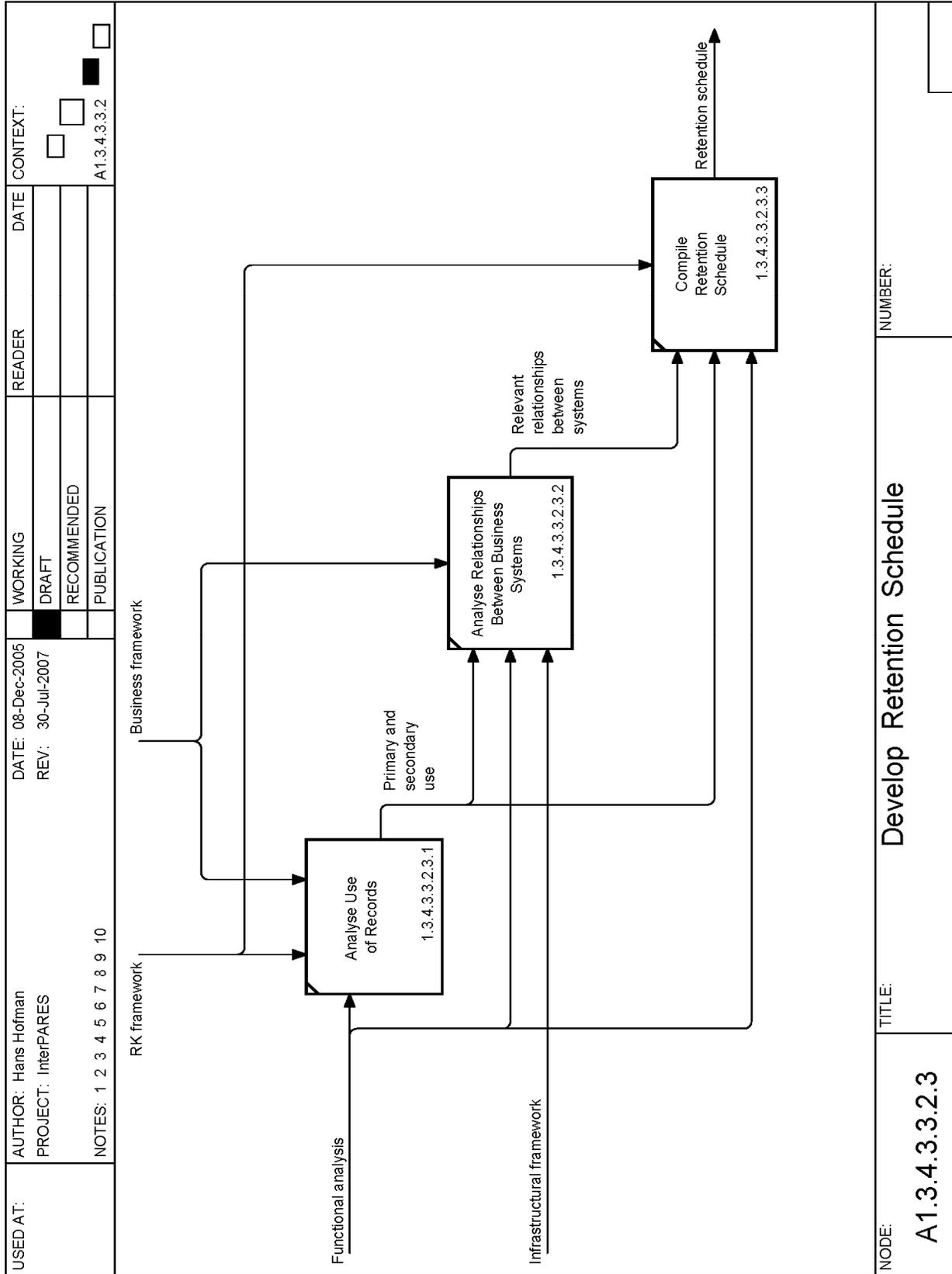


Identify RK Metadata Requirements

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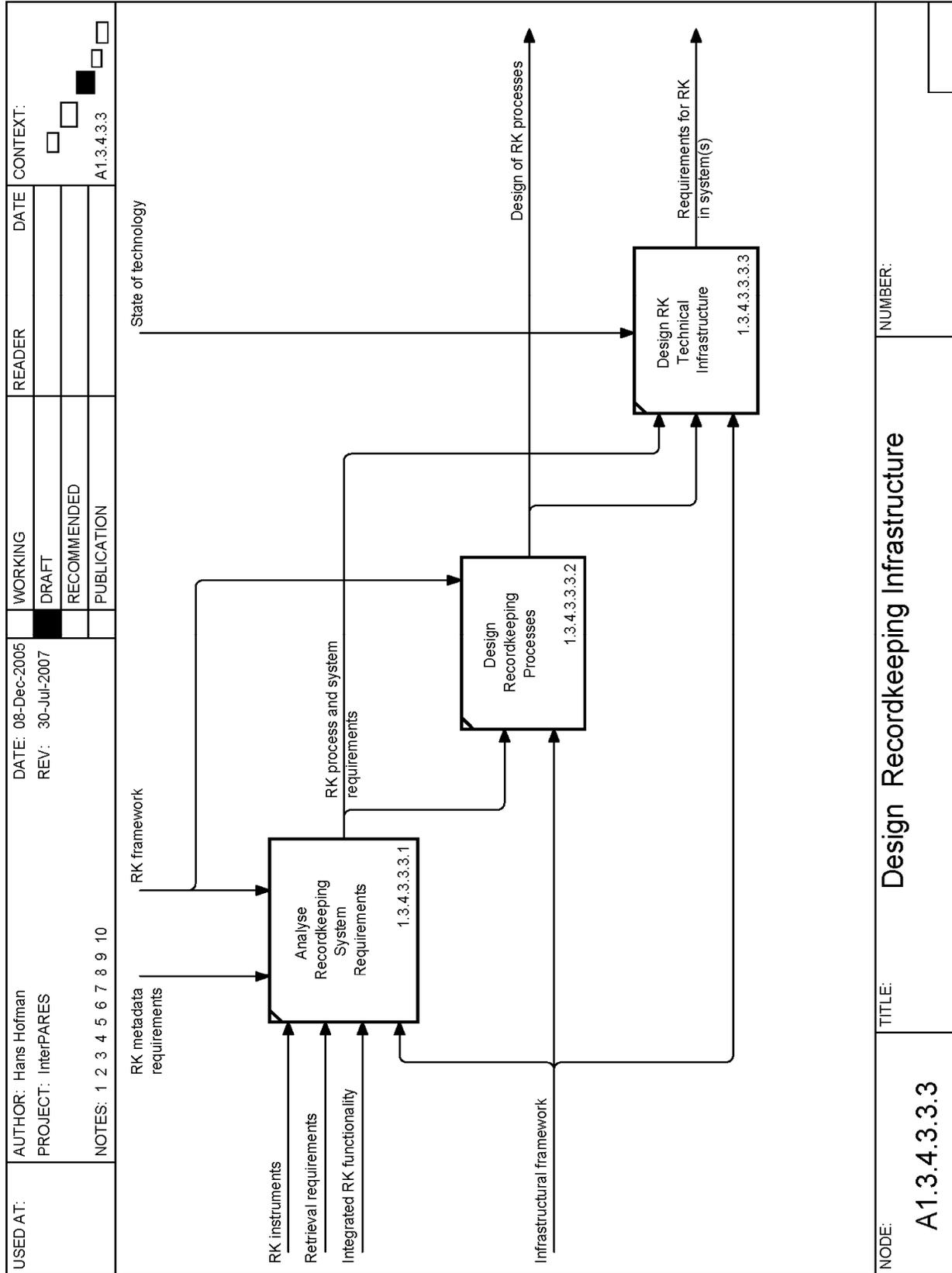


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Develop Retention Schedule

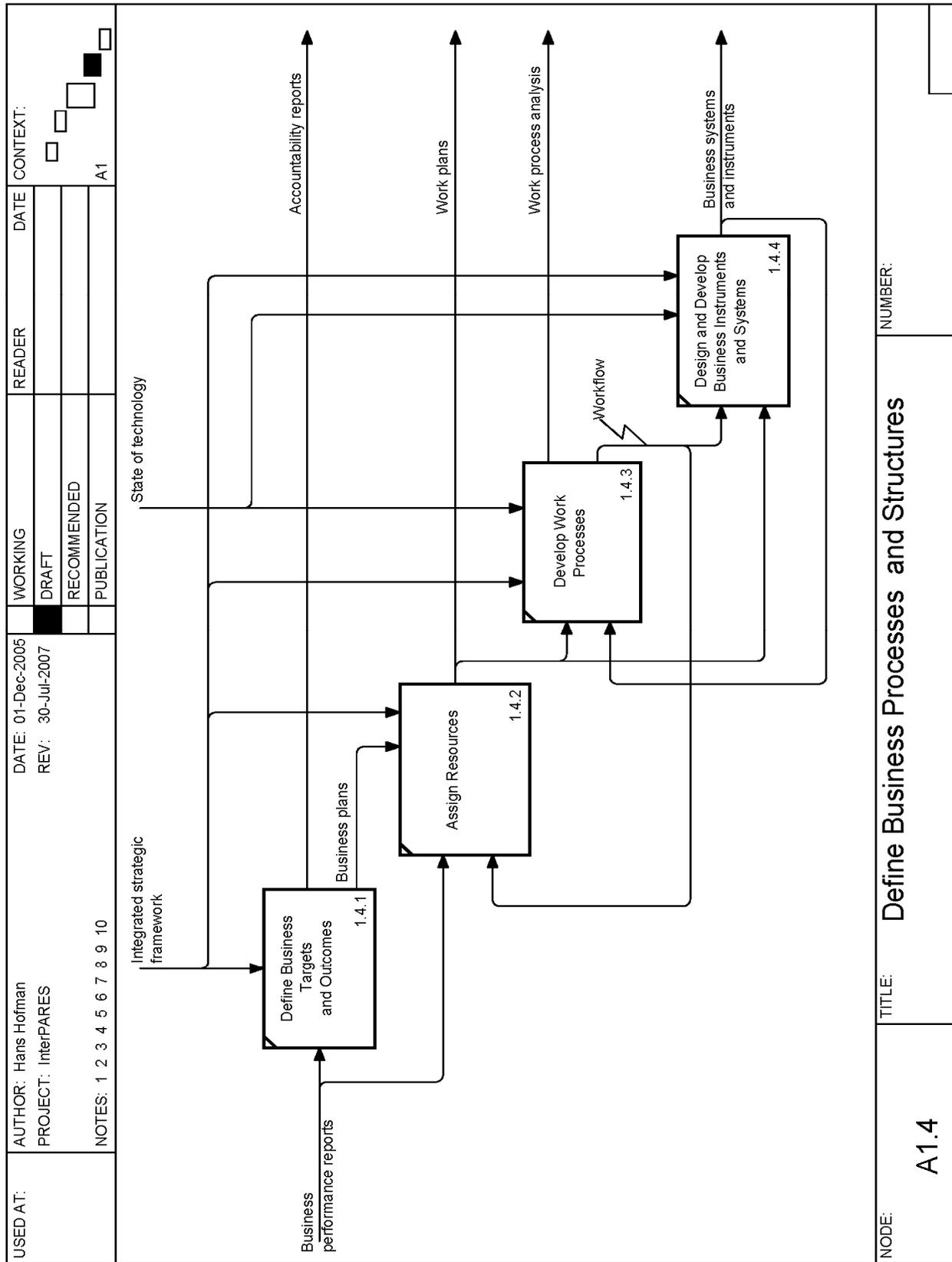
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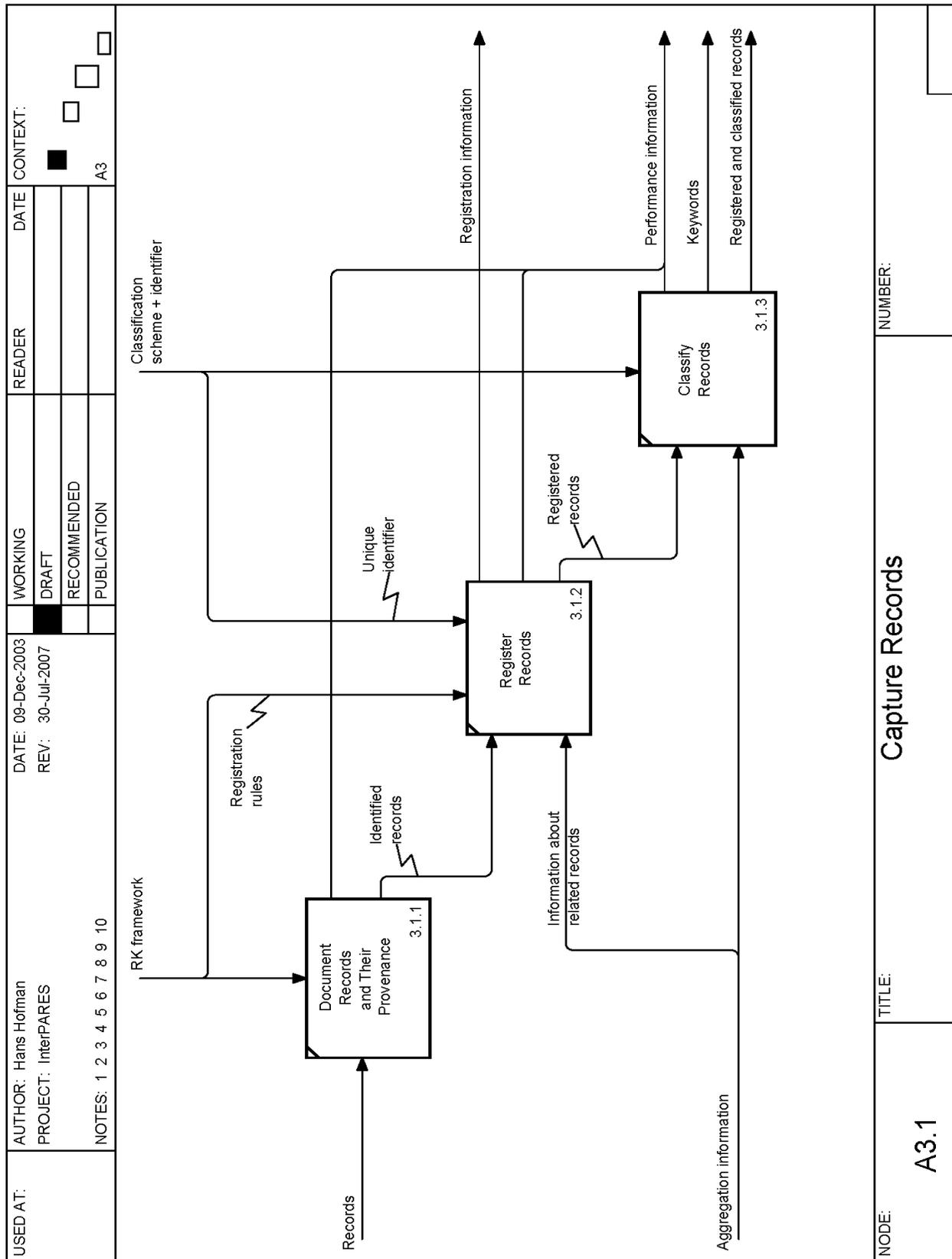


Define Business Processes and Structures

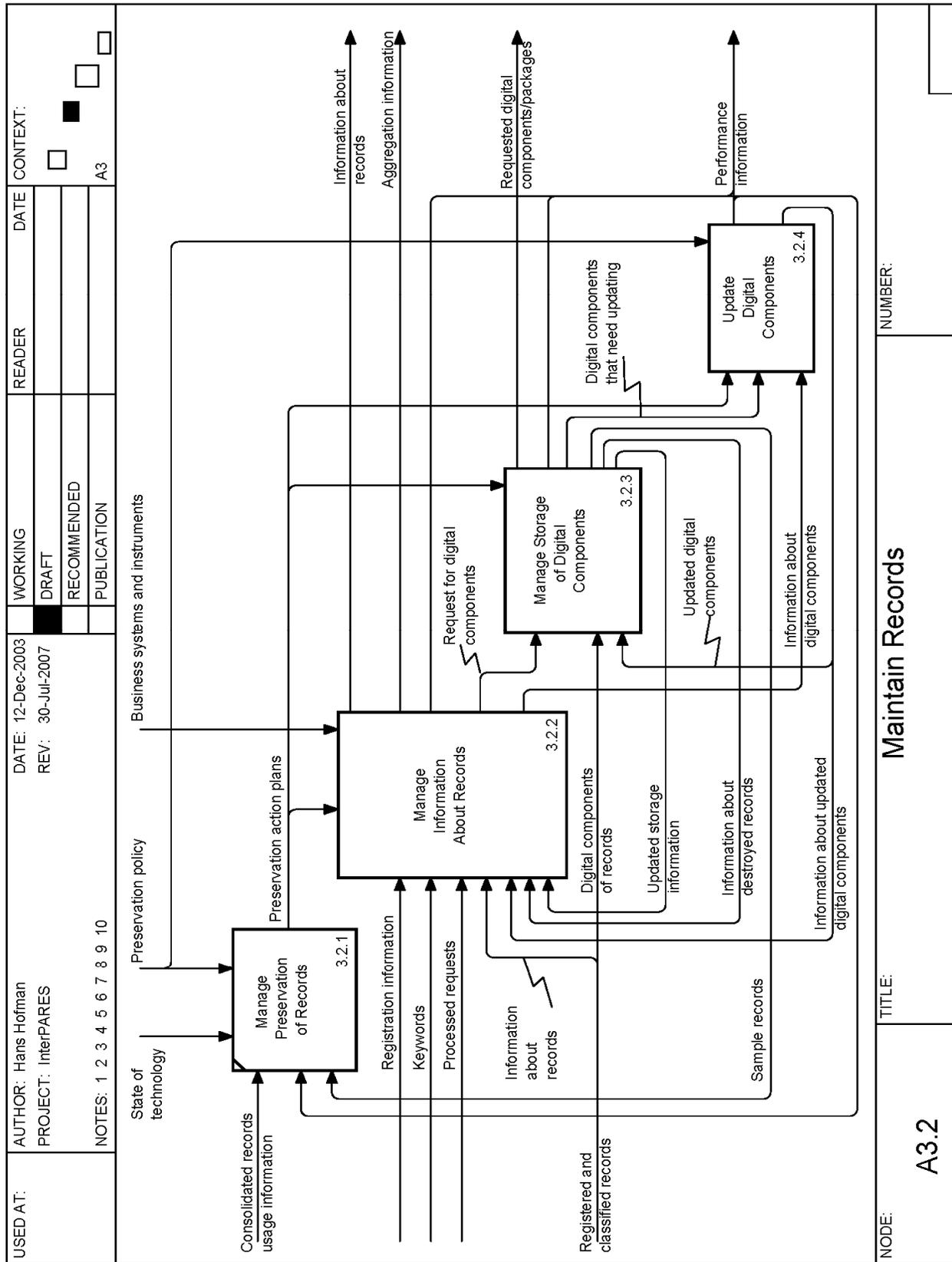
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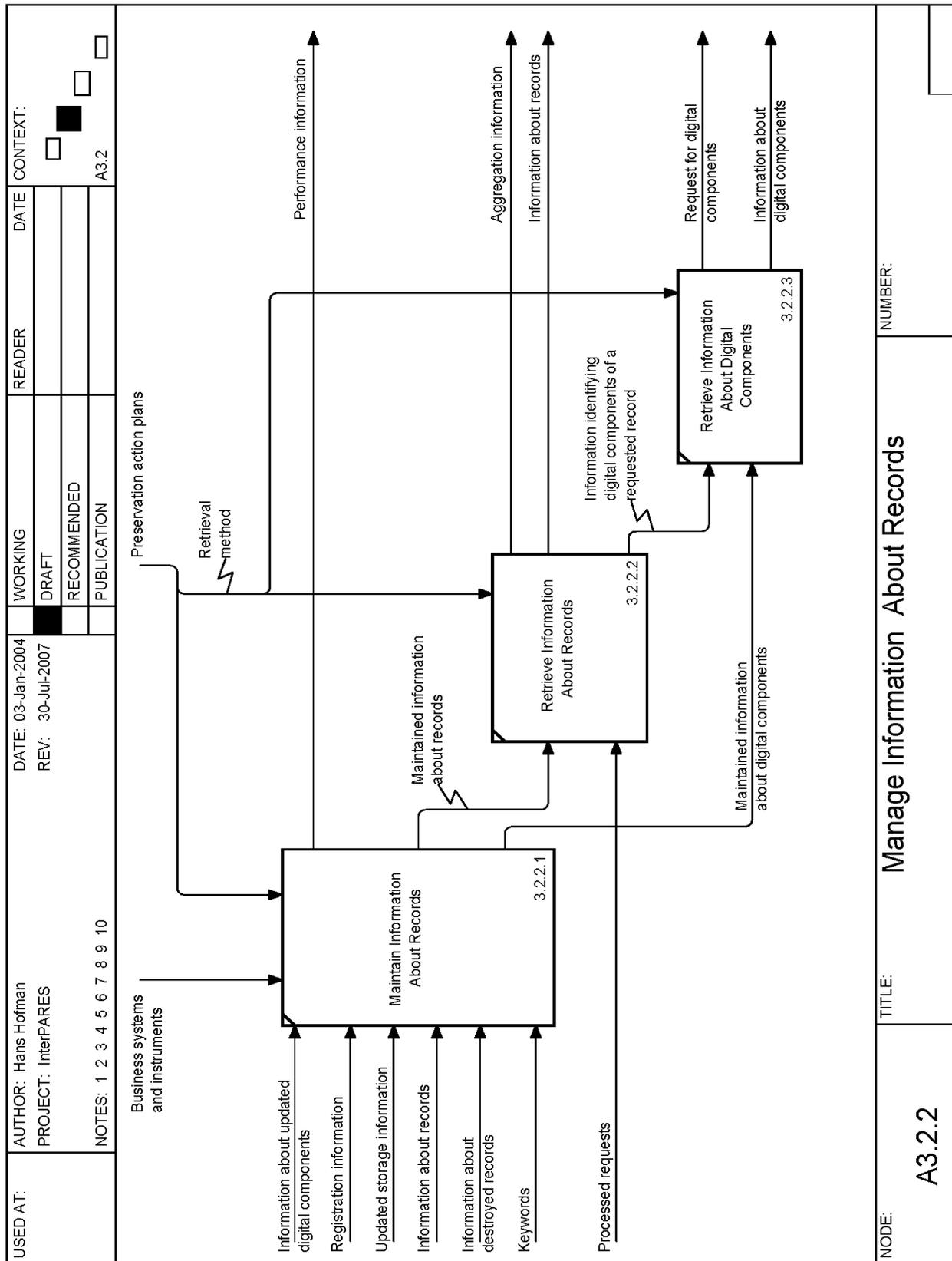
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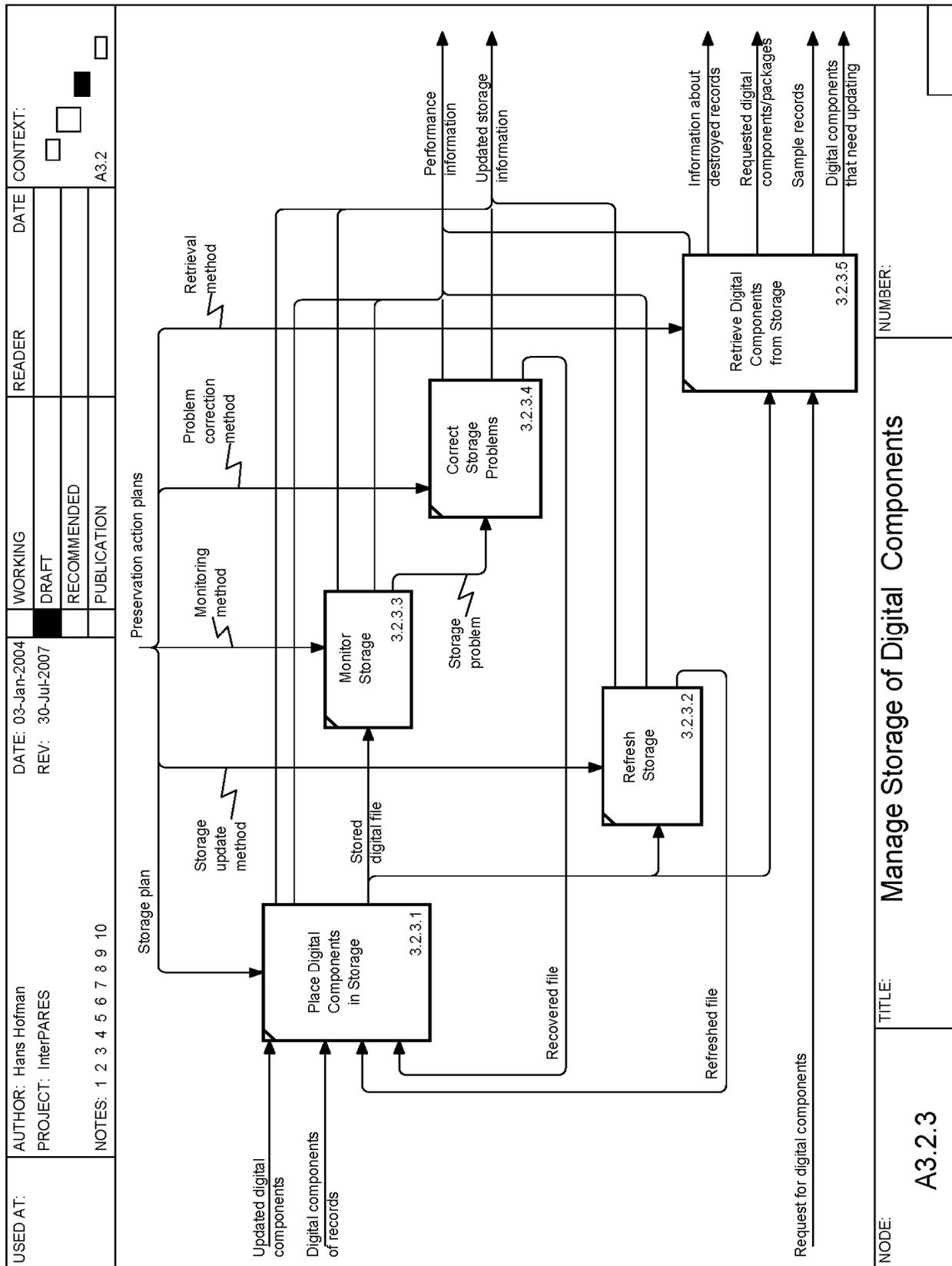


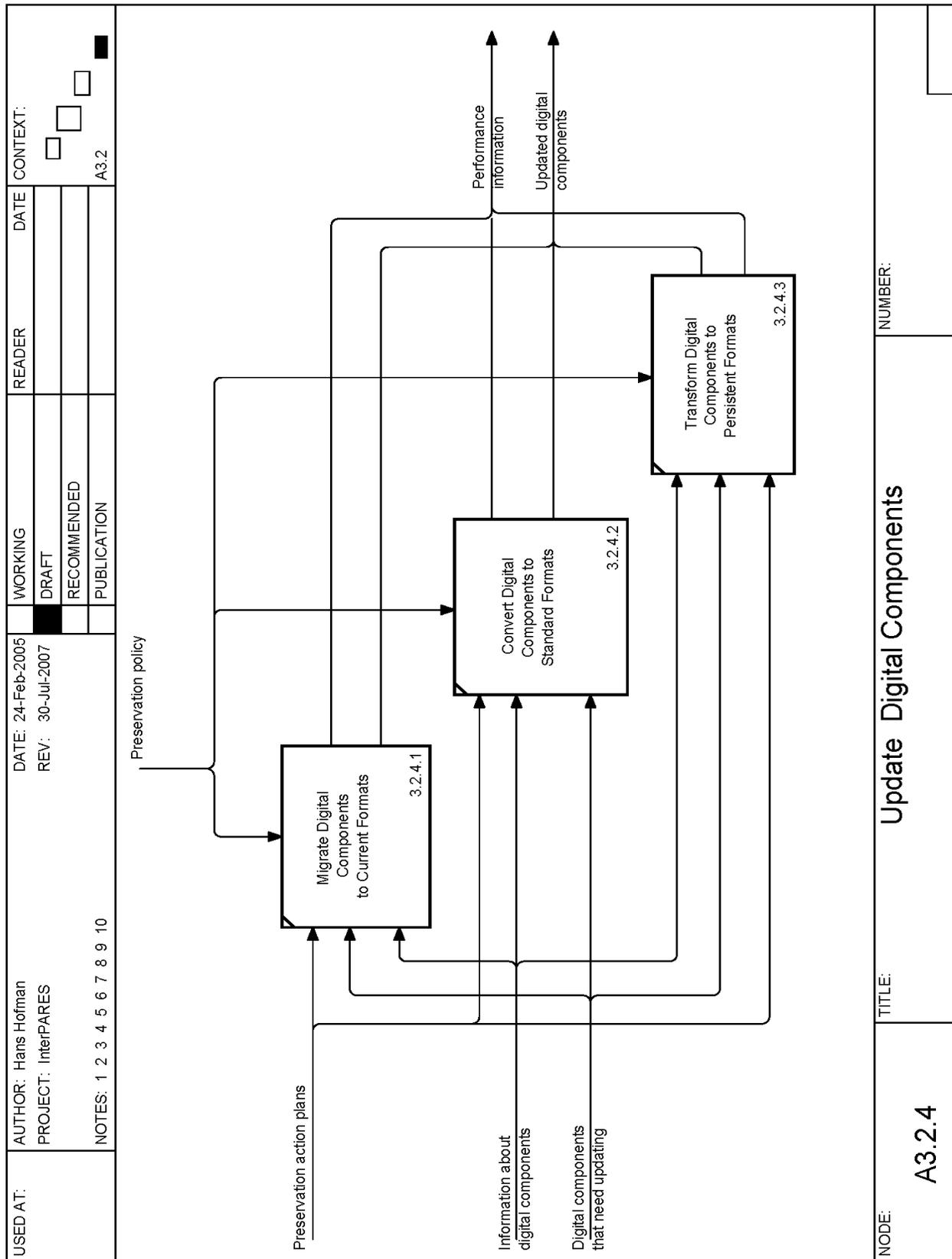


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TITLE: **Manage Information About Records**

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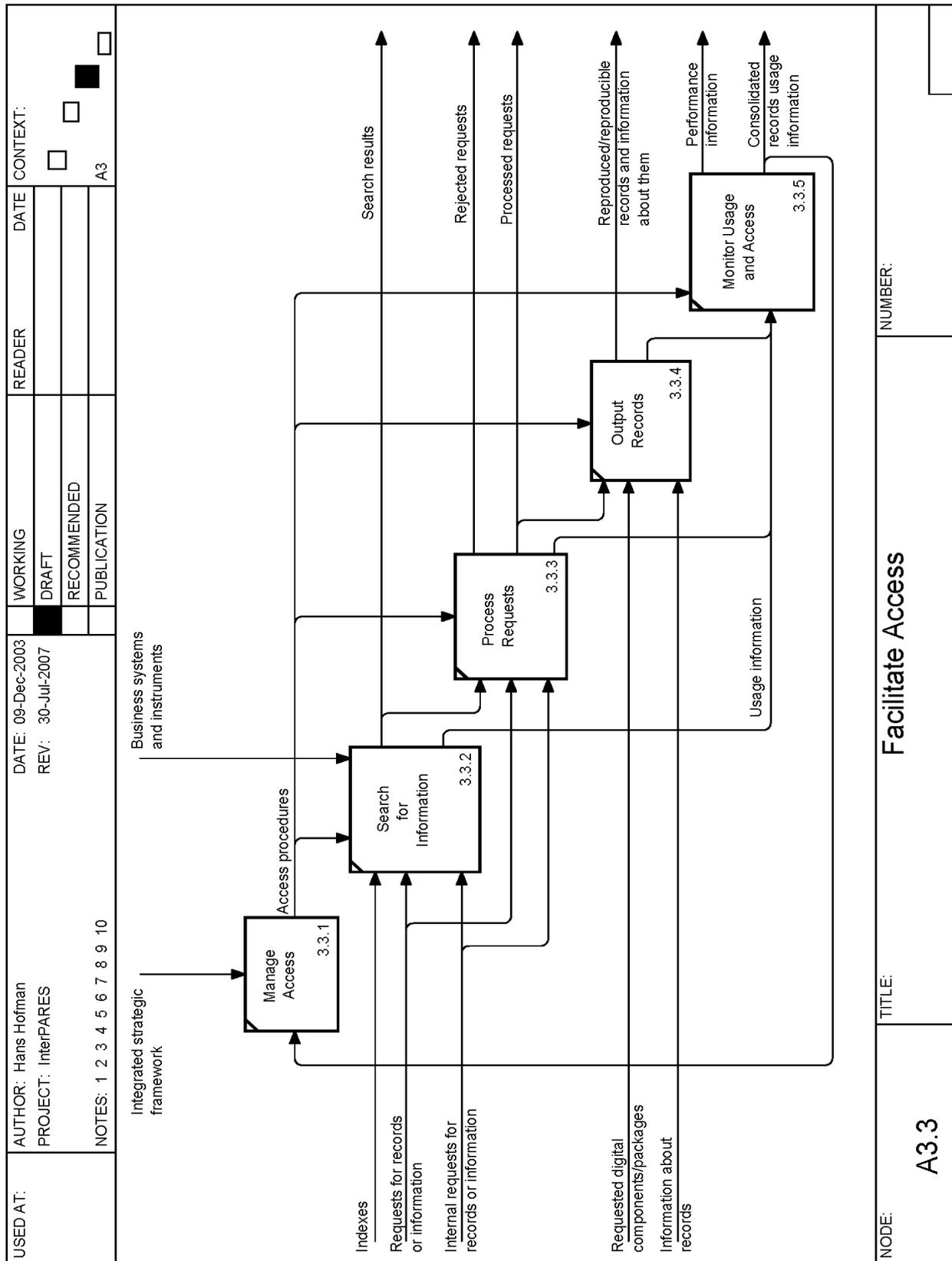




NODE: A3.2.4

TITLE: Update Digital Components

NUMBER:



NODE:

A3.3

TITLE:

Facilitate Access

NUMBER:

Business-driven Recordkeeping Model Activity Definitions

A0, Manage Business

Under the control of organisational/business, juridical and legal requirements, and limited by the actual capacity of the organisation and the possibilities available within the State of the Art of Information Technology, create and manage records as long as required in order to enable and support one or more identified business activities as well as to meet the applicable juridical requirements.

A1, Manage Business Framework

Establish a framework for records creation and management in an organisation, in line with its business needs, implement it based on the capability level that is identified for the organisation, monitor and evaluate the performance and application of the established framework both for the business activities and recordkeeping processes, and if necessary subsequently adjust the framework to the needs and level required.

A1.1, Analyse Needs and Risks

Establish the business needs for records and identify the risks if these records will not be properly created and managed in relation to the business context to identify the requirements for recordkeeping. This activity is controlled by legal, juridical and organisational or business requirements.

A1.2, Establish Governance

Set the overall strategic direction of an organisation by establishing the set and levels of responsibilities and practices necessary to ensure that the organisation is accountable for fulfilling its mandate, complying to its legal obligations, achieving its stakeholders' objectives, meeting the current societal, ethical and moral duties, managing its risks appropriately, using its resources responsibly and monitoring its performance effectively.

A1.3, Manage Strategic Framework

Establish strategic plans outlining the organisation's current and future direction, priorities and resource allocation strategies, in line with its business needs and key stakeholder interests, as well as including the required mitigation of business risks identified, implement them within an overall strategic framework, monitor the performance and application of the established plans both for the business activities and recordkeeping processes and, if necessary, subsequently adjust the plans to continue to meet business and key stakeholder needs and interests.

A1.3.1, Analyse Mandates

Critically evaluate an organisation's external mandate, identify the responsibilities involved within the context of the organisation's corporate culture and accountability framework, and subsequently identify the key mandate drivers that will guide, support and control the organisation's activities.

A1.3.2, Analyse Stakeholder Interests

Collect, evaluate input from key stakeholders (individuals, groups, other organisations, etc.) and identify their interests with respect to the organisation's business activities and objectives, its current and future direction, and its operational priorities and outcomes.

A1.3.3, Analyse Market

Collect and evaluate economic, operational, and/or competitive performance data regarding the business sector(s) within which the organisation operates for the purpose of identifying the products and/or services the organisation should produce and provide, the

needs and interests of its customers, and the strengths and weaknesses of its competition. A market analysis provides an organisation with the baseline information it needs to develop and manage its operations to best achieve its goals and enhance its competitive success.

A1.3.4, Develop Strategic Framework

Develop, implement and manage the different (strategic) specific frameworks and integrate them into one strategic framework, based on the outcome of the analysis of the mandate(s), the stakeholders' interests and the market. The strategic framework will provide the guidance and control needed to coordinate the key risk management, business and recordkeeping functions of the organisation.

A1.3.4.1, Develop Risk Management Framework

Develop, implement and manage a comprehensive administrative and operational framework for managing identified or potential risks based upon the analysis of the juridical requirements, the organization's responsibilities, societal influences, stakeholder interests, mandate drivers and market analyses within the constraints of the organisation's business.

A1.3.4.2, Develop Business Framework

Develop, implement and manage a comprehensive administrative and operational framework that will guide and control an organisation's business activities, within the constraints of the juridical requirements, the existing corporate culture and the risk management framework, through consideration of recordkeeping implementation plans and progress reports, the business infrastructural framework, mandate analysis, market analysis, stakeholder interest information, and business performance analyses. The business framework will be the basis for accountability reports and be accompanied by financial plans.

A1.3.4.2.1, Analyse External and Internal Drivers and Constraints

Collect and evaluate information about the key internal and external operational, administrative, cultural, documentary and resource allocation factors that may impact upon an organisation's ability to carry out its business, to meet its purpose and to achieve its outcomes, in order to provide a contextual analysis for establishing an organisation's business framework.

A1.3.4.2.2, Define Business Framework

Design and specify a comprehensive operational and administrative structure for guiding and overseeing an organisation's business activities, within the constraints of the existing corporate culture and the risk management framework, and based upon the thorough consideration of the contextual analysis, the recordkeeping implementation plans, the recordkeeping infrastructure framework, and performance analyses.

A1.3.4.2.3, Monitor and Evaluate Business Framework

Periodically assess whether the way an organisation's business framework is operationalised and still appropriate based upon analysis of business performance information in relation to the existing risk management framework and the contextual analysis of key drivers and constraints. Based on the monitoring, produce reports to inform the define business framework function to confirm or revise the business framework.

A1.3.4.3, Develop RK Framework

Develop, implement and manage a comprehensive administrative and operational structure that will guide and control an organisation's recordkeeping activities, within the constraints of the current state of technology, the organisation's existing corporate culture, its risk management and business frameworks, the financial plan, and its juridical requirements, and taking into account performance reports on business and recordkeeping activities.

A1.3.4.3.1, Analyse Recordkeeping Needs and Risks

Identify, describe, document and analyse an organisation's work processes ('sequential analysis'), identify what records are needed to adequately document and support those processes, and identify potential associated risks in relation to performing the recordkeeping function.

A1.3.4.3.1.1, Identify/Describe Business Processes

Given the relevant juridical, legal and organisational requirements, and past information about business and recordkeeping performance, identify the requirements for retention of the records created.

A1.3.4.3.1.2, Identify Business Need for Records

Identify what records are needed for the business processes at transaction level based on a risk analysis of these processes in connection to legal, business, organisational and societal requirements.

A1.3.4.3.1.2.1, Analyse Legal and Juridical Requirements in Relation to Business Activities

For the business processes/activities, determine the related legal and juridical requirements for records creation and the risks of not meeting these requirements.

A1.3.4.3.1.2.2, Identify Records to be Created

Given the relevant juridical, legal and organisational requirements, and past information about business and recordkeeping performance, identify what records should be created, their structure and form, and with what technologies.

A1.3.4.3.1.2.3, Identify the Retention Requirements for the Records to be Created

Given the relevant juridical, legal and organisational requirements, and past information about business and recordkeeping performance, identify the requirements for retention of the records created.

A1.3.4.3.1.2.4, Derive Requirements for Authenticity

Given the requirements for the records to be created in the different business processes specify, if possible, the characteristics of those records that are essential to their intent and the message they are supposed to convey in the given business context.

A1.3.4.3.1.3, Identify Risks from RK Perspective

Based on a functional analysis of an organisation's business processes, as well as consideration of the organisation's mandate drivers, the business need for records and the requirements for retention, identify the potential associated risks in relation to performing the recordkeeping function.

A1.3.4.3.2, Define Recordkeeping Framework

Design and specify a comprehensive operational and administrative structure for guiding and overseeing the recordkeeping function in the organisation a) within the constraints of the business framework, the financial plans, the current state of technology, the organisation's existing corporate culture, and b) based upon an analysis of the business needs for records and the risk analysis, identification of the requirements for creating and managing records and the related functionality in systems, assign who will be responsible

for the different recordkeeping roles, establish policies for retention, appraisal, preservation and access and determine criteria for evaluation of the performance.

A1.3.4.3.2.1, Synthesise Requirements for Records

Synthesise the requirements that will ensure the authenticity, reliability, usability and integrity of records, within the given business context, including the requirements for organizing and presenting records and/or their aggregates.

A1.3.4.3.2.1.1, Derive Record-type Properties Critical for Authenticity

Determine the structure and documentary form of the different types of records required to carry out the various business functions that are essential to their authenticity in the given business context, including their technical characteristics.

A1.3.4.3.2.1.2, Determine Guidelines for Organising Records and for Metadata Framework

Determine the rules and guidelines for classifying records, identify what metadata standards to follow and the requirements for developing metadata schema in relation to the business and recordkeeping activities, and the levels of aggregation needed.

A1.3.4.3.2.1.3, Determine Requirements for Presenting Records/Aggregates

Analyse, define and document the requirements for presenting records and their aggregates, based upon the guidelines for organizing them, so they can be presented to fulfill requests for records or record aggregates in ways that reflects their inter-relationships.

A1.3.4.3.2.1.4, Synthesise Requirements for Records/Aggregates

Combine the set of recordkeeping framework requirements that determine the type of records, their characteristics critical for authenticity, the rules for organising and presenting records and their aggregates and rules and requirements for the required metadata.

A1.3.4.3.2.2, Define Appraisal Policy

Determine the method and rules for appraisal of records based upon the retention requirements identified in the risk analysis, the infrastructural framework, and upon the business, legal, organisational, and societal requirements.

A1.3.4.3.2.2.1, Manage Appraisal Policy

Provide overall control and co-ordination of an organisation's appraisal policy function via guidelines and directives issued in response to information received from the monitor/evaluate function.

A1.3.4.3.2.2.2, Develop Appraisal Policy

In response to the appraisal guidelines and directives, and based on consideration of the business framework, the organisation's synthesised records needs and risks requirements, its recordkeeping risk analysis, risk management plan, and its consolidated records usage information, define and document the guidelines, methods and rules that will make up the appraisal policy.

A1.3.4.3.2.2.3, Monitor/Evaluate Appraisal Policy

Periodically assess whether the way the appraisal policy is formulated and carried out in the organisation is still appropriate and in line with the business framework, and retention requirements based upon evaluation of recordkeeping performance in relation to the existing risk management assessment and appraisal policy directives. Based on the monitoring, produce reports to inform the appraisal policy management function to confirm or revise the appraisal policy.

A1.3.4.3.2.3, Define Preservation Policy

Determine the requirements, methods and rules for preserving records and related digital components within the framework of the existing business needs, the appraisal policy, the state of the art of technology, and the synthesised record requirements, and based upon the infrastructural framework and evaluation information of recordkeeping performance.

A1.3.4.3.2.3.1, Manage Preservation Policy

Based on critical characteristics of the created record types, the appraisal policy, the existing infrastructural framework, and the given state of the art of technology, determine the preservation requirements and preservation principles, rules and methods.

A1.3.4.3.2.3.2, Develop Preservation Policy

Develop the guidelines, methods and rules for preservation based on the identified preservation requirements, the appraisal policy, the essential characteristics of record types, and the evaluation of the preservation policy, and subsequently evaluate the most suitable preservation strategies, and the organisation's given infrastructural framework and the current state of the art of technology.

A1.3.4.3.2.3.2.1, Develop Experiments for Evaluating Most Suitable Preservation Strategies

Design experiments for evaluating the most suitable preservation strategies based on the essential characteristics of the different types of records (including their digital components), a sample of relevant record types, the preservation principles and the preservation requirements.

A1.3.4.3.2.3.2.2, Evaluate Potential Preservation Methods

Conduct experiments on samples of record types to assess the most suitable preservation strategy for each type of record (and their digital components) given the state of technology.

A1.3.4.3.2.3.2.3, Compile Preservation Policy

Synthesise information about targeted preservation methods with information from preservation policy evaluation reports, check this with the given appraisal policy, and reconcile these with identified preservation principles, the preservation requirements, and technological constraints to formulate a coordinated preservation policy.

A1.3.4.3.2.3.3, Monitor/ Evaluate Preservation Policy

Evaluate the suitability of the preservation policy based upon the information about the recordkeeping performance, the actual preservation policy and the needs of the business activities

A1.3.4.3.2.4, Define Access Framework

Determine the use and outreach within the given business context, identify the targeted communities and users, and their requirements for access and use of the records and develop and manage a comprehensive administrative and operational structure that will guide and control the access to records.

A1.3.4.3.2.4.1, Establish Retrieval Requirements

Based on prior usage, organisational requirements/business framework, and appraisal policy, specify retrieval requirements.

A1.3.4.3.2.4.2, Establish RK Security Policy

Determine objectives, methods, and rules for recordkeeping security including access for authorised individuals, denial of access for unauthorised individuals, data integrity, and auditability of access and violation of access.

A1.3.4.3.2.4.3, Establish Privacy Policy

Determine what privacy rules are valid and needed given the juridical requirements, the risk management framework, and information about the kinds of information in business records.

A1.3.4.3.2.4.4, Establish IPR Policy

Determine the rules for IPR and copy rights with respect to records given the business activities, the risk management framework, and legal and organisational requirements.

A1.3.4.3.2.4.5, Identify Access Rights

Given a security policy, IPR policy, privacy policy and recordkeeping security policy, identify privileges/rights for access to records and recordkeeping functions.

A1.3.4.3.2.4.6, Consolidate Access Framework

Consolidate retrieval requirements, privacy policy, Intellectual Property Rights (IPR) policy, and access privileges into a coherent framework and reconcile this with the identified reach within the given business context, and the targeted communities and users, and their requirements for access and use of the records.

A1.3.4.3.2.5, Specify Recordkeeping Framework

Establish 1) the recordkeeping framework's overall design, structure and integrated functionality, 2) the recordkeeping job functions, competencies and staff education/training instruments needed to implement, use and maintain the recordkeeping functions, and 3) the criteria against which to measure performance of the recordkeeping functions within the framework.

A1.3.4.3.2.5.1, Assign Recordkeeping Responsibilities

Identify the different roles with respect to recordkeeping and assign responsibilities to them, based upon the business and risk management frameworks and the established appraisal, preservation and access policies

A1.3.4.3.2.5.2, Develop Recordkeeping Competencies/Job Descriptions

Identify 1) competencies for recordkeeping functions, 2) develop job descriptions and 3) develop instruments that will support increasing the capabilities in staff with assigned recordkeeping responsibilities.

A1.3.4.3.2.5.3, Integrate Recordkeeping Functionality

Analyze various sets of records requirements and recordkeeping policies, translate them into functional requirements and design integrated recordkeeping functionality based upon the infrastructural framework, the risk management framework and the assigned responsibilities.

A1.3.4.3.2.5.3.1, Analyse Different Sets of Requirements

Analyse preservation policy, appraisal policy, synthesised record requirements and access framework to produce a requirements analysis document also taking into account record-keeping HRM instruments, the recordkeeping framework and the risk management framework.

A1.3.4.3.2.5.3.2, Compare identified RK Functional Requirements with Existing Standards/Sets

Compare identified functional recordkeeping requirements with existing standards/sets of requirements, taking into account the infrastructural framework

A1.3.4.3.2.5.3.3, Define Set of RK Functional Requirements

Compile/define an integrated set of recordkeeping functional requirements based on the comparison with existing standards and the identified functional requirements needed to support the recordkeeping framework and processes.

A1.3.4.3.2.5.4, Compile Recordkeeping Framework

Compile the integrated recordkeeping functionality, preservation policy, appraisal policy and evaluation of recordkeeping performance to produce a comprehensive recordkeeping framework with assigned responsibilities and associated recordkeeping competencies

A1.3.4.3.3, Implement Recordkeeping Framework

Manage the implementation of the recordkeeping framework in line with the capacity of the organisation, carry out the actual implementation and monitor and evaluate its progress. This is a continuous process that will be influenced by the changes in business function(s) or by changes in legal juridical or technological circumstances.

A1.3.4.3.3.1, Manage RK Implementation

Analyze the readiness of the organisation and its capacity level, design the transition strategies and establish implementations plans and monitor their progress.

A1.3.4.3.3.1.1, Analyse Readiness of Organisation/ Capacity Level

Analyse the business and recordkeeping frameworks in close relation with the recordkeeping performance, information about business performance and implementation progress reports in order to identify the capacity level of the organisation for improving its recordkeeping.

A1.3.4.3.3.1.2, Design Transition Strategies

Use information about business performance, the infrastructural framework and the capacity assessment to produce transition strategies within the constraints of financial plans and the business framework.

A1.3.4.3.3.1.3, Establish RK Implementation Plan

Define scope, goals, resources and deliverables of implementation plans based on the capacity assessment, the proposed transition strategies, the financial plans and the recordkeeping performance, and develop performance criteria.

A1.3.4.3.3.1.3.1, Define RK Scope, Goals, Resources and Deliverables

Transform the transition strategy into implementation scope and goals, needed resources and deliverables, given the capacity assessment.

A1.3.4.3.3.1.3.2, Define RK Implementation Plan

Within the constraints of an organisation's capacity assessment, the financial plans and the current recordkeeping framework, define the specifications for implementing the organisation's recordkeeping function through consideration of the defined objectives and deliverables, of the evaluation of the performance of the recordkeeping function, and of updated information regarding the progress of the actual implementation.

A1.3.4.3.3.1.3.3, Develop RK Implementation Performance Criteria

Develop performance criteria for monitoring the progress of implementation of recordkeeping within the organisation and the achievement of the objectives set in the implementation plans, based on the implementation goals, resources, and identify what information should be measured and provided in implementation progress reports.

A1.3.4.3.3.2, Develop Recordkeeping Instruments

Develop metadata sets and rules, metadata encoding schemes, appraisal instruments, and education program and courses within the given business and recordkeeping frameworks.

A1.3.4.3.3.2.1, Develop RK Metadata Schemas and Rules

Define metadata requirements and rules, identify and select appropriate metadata standards and sets, and if needed construct metadata schema(s).

A1.3.4.3.3.2.1.1, Identify RK Metadata Requirements

Analyze business metadata structures, match recordkeeping needs for metadata, identify potential metadata sources, and define metadata specifications.

A1.3.4.3.3.2.1.1.1, Analyse Business Metadata Structures

Identify and analyse existing business metadata schema's that should be taken into account and can be used in developing a recordkeeping metadata framework.

A1.3.4.3.3.2.1.1.2, Match Recordkeeping Needs for Metadata

Match the recordkeeping needs for metadata with the identified business metadata sets to identify potential sources for extracting recordkeeping metadata.

A1.3.4.3.3.2.1.1.3, Establish RK Metadata Specifications

Specify metadata requirements based on recordkeeping metadata needs, the integrated recordkeeping functionality and identified metadata sources in the business processes.

A1.3.4.3.3.2.1.2, Select Appropriate Metadata Standards/Sets

Select appropriate recordkeeping metadata standards and sets from identified and available recordkeeping metadata standards and existing sets and assess their usability based upon the recordkeeping metadata requirements within the given recordkeeping framework.

A1.3.4.3.3.2.1.3, Develop Metadata Structures

Construct customised recordkeeping metadata schemas taking into account the selected and usable components from existing recordkeeping metadata schema's, based upon the identified recordkeeping metadata requirements.

A1.3.4.3.3.2.2, Develop RK Metadata Encoding Schemes

Develop classification schemas, controlled vocabularies, thesauri, and a system for unique and persistent identification as needed within the given recordkeeping framework.

A1.3.4.3.3.2.2.1, Develop Classification Schemes

Assess the metadata requirements and the integrated RM functionality to develop an activity classification scheme and an access classification scheme.

A1.3.4.3.3.2.2.2, Develop Controlled Vocabularies/Thesaurus

Based upon the metadata requirements, the classification schemes and the functional analysis develop the controlled vocabularies and thesauri that are needed.

A1.3.4.3.3.2.2.3, Establish System for Unique Identification

Identify or design and subsequently implement a system for unique and persistent identifiers (within the organisation or beyond depending on the needs) of records and/or their aggregates.

A1.3.4.3.3.2.3, Develop Retention Schedule

Based on the results of the functional analysis, the analysis of the usage of records and their aggregates, and an analysis of the relationships between business systems develop a retention schedule.

A1.3.4.3.3.2.3.1, Analyse Use of Records

Analyse information about relevant business processes based upon the functional analysis, consolidated usage information, and business need(s) for records and other identified retention requirements as laid down in the business and recordkeeping frameworks to identify primary and secondary uses of records.

A1.3.4.3.3.2.3.2, Analyse Relationships Between Business Systems

Based upon the primary and secondary uses of records, and the infrastructural framework assess the relationships between business systems in order to identify the primary sources of records.

A1.3.4.3.3.2.3.3, Compile Retention Schedule

Based upon the functional appraisal report, information about relevant relationships between systems, primary and secondary uses of records, and the recordkeeping framework compile the appropriate retention schedule.

A1.3.4.3.3.2.4, Develop RK Education Program and Courses

Based on the recordkeeping framework, customised schemas, the retention schedule and activity and access classification schemes develop an education program and courses in close relation with the recordkeeping implementation plans.

A1.3.4.3.3.3, Design Recordkeeping Infrastructure

Analyse integrated recordkeeping functionality, recordkeeping instruments, the infrastructural framework and retrieval requirements and design recordkeeping processes and identify requirements for recordkeeping in systems.

A1.3.4.3.3.3.1, Analyse Recordkeeping System Requirements

Analyse recordkeeping instruments, integrated recordkeeping functionality and retrieval requirements under the constraints of the metadata and recordkeeping framework to produce requirements for recordkeeping processes and recordkeeping in systems.

A1.3.4.3.3.3.2, Design Recordkeeping Processes

Design recordkeeping processes from recordkeeping requirements in systems based on the infrastructural framework and within the recordkeeping framework.

A1.3.4.3.3.3.3, Design RK Technical Infrastructure

Design the technical infrastructure for recordkeeping based on the design of recordkeeping processes, recordkeeping requirements for systems and the infrastructural framework given the state of technology.

A1.3.4.3.3.4, Train Staff

Use recordkeeping education program and courses, the recordkeeping instruments and information about staff and assigned responsibilities (recordkeeping framework) to train staff.

A1.3.4.3.3.5, Monitor/Evaluate RK Implementation

Based on the recordkeeping framework, the recordkeeping implementation plans, and implementation performance criteria, the results of training, and the evaluation information of recordkeeping performance monitor and evaluate the progress of recordkeeping implementation and produce progress reports.

A1.3.4.3.4, Evaluate RK Performance and Adequacy

Assess based on business and recordkeeping performance whether the way the recordkeeping framework is implemented and carried out in the organisation is still appropriate based upon the established recordkeeping performance criteria. Based on this analysis monitoring reports will be produced to inform the recordkeeping framework management function to confirm or revise the recordkeeping framework.

A1.3.4.4, Develop Infrastructural Framework

Design, develop, implement and monitor a comprehensive, administrative and operational infrastructure with integrated recordkeeping functionality and processes to effectively manage (plan, build, use and leverage) all of an organisation's strategic framework components and compile performance and progress reports.

A1.3.4.5, Establish Integrated Strategic Framework

Integrate the business and recordkeeping frameworks into one robust and functional framework that will govern all business and recordkeeping activities, systems, and processes.

A1.4, Define Business Processes and Structures

Define an organisation's business operational targets and outcomes, delegate and assign resources, develop business and workplans, and design and develop business work processes, necessary instruments and systems structures to effectively manage the organisation's resources and support its work processes.

A1.4.1, Define Business Targets and Outcomes

Develop business plans with an organisation's current and future performance goals, operational priorities, and product/service development and delivery strategies and objectives in line with the organisation's mandate and business and accountability framework, and, as necessary to continue to meet evolving business and stakeholder needs and interests, refine these targets and outcomes in response to information about ongoing business performance.

A1.4.2, Assign Resources

Based on the objectives and directives of an organisation's business plan(s), develop work plans for the allocation of the organisation's human and material resources needed to achieve the business targets and to support business work processes, instruments and systems, and, as necessary to continue to meet evolving business and stakeholder needs and interests, refine these work plans in response to ongoing business workflow and performance information.

A1.4.3, Develop Work Processes

Based on the objectives of an organisation's business work plan(s), analyse business work processes and develop workflows for operationalising the organisation's those work processes, and, as necessary to continue to meet evolving business and stakeholder needs and interests, refine the work process analysis and workflow strategy in response to business work plan revisions.

A1.4.4, Design and Develop Business Instruments and Systems

In response to the particular operational, material, technological, or other requirements related to an organisation's work plans and workflows, create, install or otherwise provide the instruments and systems needed to support the execution of an organisation's business work processes.

A1.5, Monitor/Evaluate Business Performance

Periodically assess the performance of the business processes in relation to the organisation's strategic framework and the accountability framework. Based on the monitoring, produce business performance reports to inform the organisation's appropriate management functions to confirm or revise the business strategic framework, or business processes and structures.

A2, Carry Out Business Activity

Carry out a business function, activity or perform task or a set of one or more related activities to provide services, make or deliver services, products or any other specified result.

A3, Manage Records

Manage in an efficient and systematic way the capture, receipt, maintenance, use and disposition of records, including processes for capturing and maintaining evidence of and information about business activities and transactions in the form of records

A3.1, Capture Records

Based on rules established in the recordkeeping framework the capture function identifies and brings under control the records that are created in the business activity and need to be maintained. With the capture of those records, the required metadata are also captured/extracted to ensure the authenticity, usability, integrity and reliability of the records. The capture of metadata is done every time a record or aggregation of records is used in a business process. The capture process includes the registration and classification of the records as well as, if needed, the assignment of key words, so that the records are identifiable and searchable. The valid RK instruments will guide the registration and classification. Identification and information about the performance of this function are produced for evaluation purposes.

A3.1.1, Document Records and Their Provenance

Attach to records all the contextual metadata, needed to know when, why, by whom and in what business process the record has been created and/or used, as well as the inter-relationships with other records in order to ensure the authenticity, usability and reliability.

A3.1.2, Register Records

Assign a unique identifier to records and/or their aggregates in accordance with the identification and registration rules and document the registration.

A3.1.3, Classify Records

Classify identified and captured records or aggregates by assigning a classification code from the classification scheme and, if necessary, add key words for retrievability.

A3.2, Maintain Records

Following direction established in the preservation strategy as part of the recordkeeping framework for a given body of records selected for preservation, apply preservation method(s) targeted to that body of records to implement the preservation action plan for those records by maintaining the digital components of accessioned digital records, along with related information necessary to reproduce the records, certify their authenticity and enable correct interpretation of the records.

The maintain activity carries out also the disposition function, so that records are kept no longer than needed.

This maintenance activity enables the output, in response to a retrieval request, of the digital components of a record, along with information about that record, or, if the request is only for information, the requested information. The ‘maintain’ process also produces management information which is used to evaluate execution of the ingest function. The process is carried out by persons responsible for preservation, using infrastructure technology.

A3.2.1, Manage Preservation of Records

Provide overall control and co-ordination of the records preservation function via preservation action plans issued in response to information about the current state of technology, the organisation’s preservation strategy, updated storage information and ongoing performance information.

A3.2.2.1, Manage Information About Records

Collect and maintain information necessary to carry out the Preservation Action Plan in support of the overall Preservation Strategy for a body of electronic records being preserved, including information about their digital components, the archival aggregates they comprise, their authenticity, their interpretation, and the preservation activities performed on them. In carrying out actions specified in the Preservation Action Plan, information about (captured / accessioned) Electronic Records is collected when they are accessioned and is combined with Storage Information identifying the files, locations, and other relevant data about the digital components of the (captured/ accessioned) Electronic Records when they are placed in storage and subsequently when storage parameters are changed.

When a Preservation Action Plan entails any modifications to digital components, Information About those Digital Components is provided to ensure that all affected components are updated appropriately and, after the modification, Information about the Updated Digital Components is also updated.

In response to a Retrieval Request for information, Retrieved Information About a Preserved Record is provided. In response to a Retrieval Request for a record, information identifying the digital components of the record and their storage location(s) is retrieved to produce a Request for Digital Components, which is used to retrieve those components from storage; Information About those Digital Components and Retrieved Information About the Preserved Record is output to support reproduction of the record and, if needed, certification of its authenticity.

A3.2.2.1, Maintain Information About Records

Manage information about the provenance, aggregation, content, form, structure, or other essential characteristics of records and/or their digital components that are needed to preserve them over time as well as to satisfy user requests.

A3.2.2.2, Retrieve Information About Records

Output information about the provenance, aggregation, content, form, and structure of records in storage.

A3.2.2.3, Retrieve Information About Digital Components

Output technical information concerning digital components of records that is required to facilitate preservation and updating of digital components.

A3.2.3, Manage Storage of Digital Components

In accordance with the Preservation Strategy established for a body of records, and applying the Storage Method selected to implement that Strategy, place the digital components of (Accessioned) Electronic Records into storage, taking the specific steps defined in the Preservation Action Plan for these records and maintain them. In response to a Request for Digital Components, retrieve the requested components and output them.

When digital components are output for updating in accordance with a Preservation Action Plan, place the Updated Digital Components in storage and, as provided by the Action Plan, either maintain or delete the older versions of these components. Provide to the 'Manage Information' process Updated Storage Information about the identities, locations and other relevant parameters of stored digital components whenever components are updated or other changes, such as media refreshment, are made in storage.

A3.2.3.1, Place Digital Components in Storage

Store digital components of records, if required into one or more digital containers for preservation purposes, in accordance with the Storage Plan outlined in the Preservation Action Plan.

A3.2.3.2, Refresh Storage

Convert storage of digital components of records from one medium to another, or otherwise ensure that the storage medium remains sound, in accordance with the Storage Update Method outlined in the Preservation Action Plan.

A3.2.3.3, Monitor Storage

Supervise the operation of the storage system, the media on which the digital components of records are stored, the digital components, and the facilities where the system and components are located, in accordance with the Monitoring Method outlined in the Preservation Action Plan.

A3.2.3.4, Correct Storage Problems

Take the appropriate actions prescribed by the Problem Correction Method outlined in the Preservation Action Plan to eliminate any identified problem regarding the storage of digital components.

A3.2.3.5, Retrieve Digital Components from Storage

Output copies of retrieved digital components of records in storage, in accordance with the Retrieval Method outlined in the Preservation Action Plan, in response to requests for records that consist of those components, and, in cases where digital components are encountered that need updating, redirect them to be updated.

A3.2.4, Update Digital Components

As indicated by the Preservation Strategy established for a given body of electronic records (tunnelled to this diagram), take the steps indicated in the applicable Preservation Action Plan, applying the Method(s) for Updating Components prescribed by the strategy to update Digital Components of a Record that cannot be Preserved because of technological obsolescence, changes in Preservation Strategy, or similar factors. Examples of update processes include migration, standardisation, and transformation to persistent form. Return the Updated Digital Components to Storage, providing Information about the Updated Digital Components to the 'Manage Information' process. If the Updated Digital Components belong to a record that is the subject of a Retrieval Request, also send the components, along with related information, to the Output Electronic Record process. However, if the updating was done only to satisfy conditions of a Retrieval Request and was not required to conform to Preservation Strategy, the Updated Digital Components are sent, along with related information, to the Output Electronic Record process, but they are not sent to storage.

This process may be invoked directly when records in a transfer are being examined and it is determined that there is a need to take action to preserve a record, before the components are sent to storage.

A3.2.4.1, Migrate Digital Components to Current Formats

When the format of a type of digital components is obsolete, use a targeted preservation strategy to migrate these digital components to the chosen current format, and associate with this group of digital components documentation of the actual migration.

A3.2.4.2, Convert Digital Components to Standard Formats

When the format of a type of digital components is proprietary, use a targeted preservation strategy to convert/migrate these digital components in proprietary format to the chosen standard format.

A3.2.4.3, Transform Digital Components to Persistent Formats

When the preservation action for the digital components of a record aggregation is to transform them to persistent format, apply the method for transforming the digital components to a software and hardware independent format that has been identified as persistent.

A3.3, Facilitate Access

Governed by the access framework, support search facilities for users and, if successful, provide information about or provide access to reproduced (authentic) records or produce, if requested, a reproducible digital record; that is, the digital component(s) of the record along with instructions for producing an authentic copy of the record and information necessary to interpret the record as kept under the regime of the recordkeeping framework.

A3.3.1, Manage Access

Control and co-ordinate all actions and the authoritative, procedural, and technological competences to retrieve, represent/reproduce, read, annotate, transfer, and/or destroy stored records and define the access procedures within the given access framework.

A3.3.2, Search for Information

Based on a request for records or information about records search and retrieve all components and/or information that comply to this request and can be processed for output. In case of no hit produce a negative response.

A3.3.3, Process Requests

Verify requests for records based upon access procedures and the search results, reject requests if access is restricted or requester is not authorised and inform requester, define further specifications if needed (e.g. redaction of records), facilitate retrieval of records or their aggregates and their digital components, and account for any problems with requests in accordance with the prescribed Access Procedures.

A3.3.4, Output Records

Check correctness, integrity and completeness of retrieved records or their aggregates, their digital components, and/or information about requested records, reconstitute requested records and either present them as reproduced records (with a certificate of authenticity if required) with accompanying information, or package the outputs as reproducible records.

A3.3.5, Monitor Usage and Access

Monitor access to records and their components and the information about them based upon the usage information, collect and compile statistical information about usage, analyse any failures or mistakes related to access and report this to the manage access function.

A3.4, Collect Performance Information

Synthesise and compile reports on the performance of the capture, maintain and facilitate access functions based on information continuously collected from these functions in order to inform the manage recordkeeping framework function. These reports may contain information about the applicability of policies, rules and methods, deviations from policies/rules, malfunctioning of systems, as well as suggestions for improvement. Other reports will be made with consolidated information about usage of records or aggregations.

Business-driven Recordkeeping Model Arrow Definitions

Access classification scheme

A systematic classification of categories of access rights and restrictions used for the purpose of controlling access to stored records; aggregates and/or information about records.

Access framework

A comprehensive set of administrative and operational rules, procedures and methods that will guide and control the use of records/aggregates and the information about them, and the outreach within the given business context for the identified and targeted communities and users, and taking into account their requirements for access and use of the records.

Access procedures

A set of regularised, administrative steps taken in procuring, granting or denying access to records/aggregates and/or information about records and to administrative and operational functions within an organisation's recordkeeping system in a certain business context.

Access rights

Indicators of which users have what degree of access to which resources and to what administrative and operational functions within an organisation's recordkeeping system.

Accountability framework

A comprehensive, integrated, operational and administrative set of policies, procedures and rules that provides for: (1) consistent management of an organisation's various (external) stakeholders, (2) continuous monitoring and assessment of compliance to the accountability framework within the organisation, (3) continuous monitoring and assessment of the impact of new business processes, legislation, policies, juridical and social requirements or other relationships on the attribute of accountability within the organisation, and (4) modification of the organisation's accountability framework design, as necessary, in response to these monitoring and assessment activities.

Accountability reports

Reports that provide information on the state and performance of the management of the records continuum in the related business context.

Activity classification scheme

A plan based on the systematic identification and arrangement of an organisation's business activities into categories that will govern the arrangement of records and/or aggregates.

Aggregation information

Information about rules for aggregating records, and the agreed levels of aggregation.

Analysis of legal and juridical requirements

An analysis of an organisation's legal and juridical obligations in relation to its business and the effect with respect to the recordkeeping requirements needed to meet those obligations.

Appraisal policy

A set of cohesive and coherent policies, procedures, rules, standards, guidelines, criteria and methods for determining what records should be created/captured, how long they should be kept and how they should be preserved, based on, among other things, consideration of the organisation's recordkeeping risk analysis as well as evaluation of record context, value (i.e., current and future uses), and preservation feasibility.

Appraisal policy evaluation reports

An evaluation of the suitability of the current appraisal policy based upon the recordkeeping performance information and the consolidated records usage information. It contains an assessment on how the current appraisal policy suits the needs of the organisation.

Assigned RK responsibilities

Formal, documented indications of which (groups of) users are assigned what responsibilities with respect to the administrative and operational functions with respect to an organisation's recordkeeping.

Business framework

A comprehensive, integrated, operational and administrative structure that will guide, and govern an organisation's business processes, people, systems, operations and projects in line with the organisation's overall mandate.

Business performance reports

Reports that state the performance of the various business activities of an organisation based on particular benchmark criteria provided in the integrated strategic framework.

Business plans

Operational plans that spell out an organisation's expected course of action for a specified period in relation to one or more business activities and, for example, services and products, the market, the industry, management policies, marketing policies, production needs and available resources, and usually including an analysis of risks and uncertainties and how to mitigate them.

Business systems and instruments

All systems, instruments and tools needed to support and conduct the business activities.

Capacity assessment

Assessment of the current situation in the organisation with respect to creating, managing, and preserving records and determining what needs to be done to improve it to the next level as identified and agreed. The capacity assessment includes assessing the level of awareness and understanding of management and staff, the available technical infrastructure, the level of expertise of the Recordkeeping staff, the available resources, ...

Classification scheme + identifier

A logical plan based on subjects or business activities used for classifying records/ aggregates.

Communication/ transactions

Messages or other information exchanges between persons and/or systems in the course of a business activity.

Consolidated records usage information

Aggregated information regarding: (1) the history of successful, unsuccessful and rejected access requests for records (and/or information), including data about the nature of the requests, about which records (and/or information) were successfully accessed when and by whom, about which access requests were unsuccessful and why, and about which access requests were rejected and why, (2) the purposes for which the records (and/or information) were requested, (3) the retrieval questions asked, (4) the frequency of requests for records (and/or information), and (5) problems encountered in fulfilling requests or retrieving requested records (and/or information).

Contextual analysis

The integration of an organisation's mandate, mission, business function and activities, history, corporate culture, strengths, weaknesses, market position, and legal, social and corporate responsibilities.

Controlled vocabulary/thesaurus

A managed set of purposefully delimited and standardised terms, phrases and concepts used by an organisation to control the values of a metadata element.

Corporate culture

An organisation's values, beliefs, business principles, traditions, ways of operating, and internal work environment.

Customised schemas

Recordkeeping metadata schemas customised according to targeted recordkeeping metadata requirements and based upon selected recordkeeping metadata standards.

Defined RK objectives and deliverables

An accounting of the overall scope, performance goals and objectives, and expected output of an organisation's recordkeeping function, and the resources required to support that function.

Design of RK processes

An organisation's formal plan outlining the related, structured activities that are part of each discrete recordkeeping process, the rules governing them and their workflow.

Digital components of records

One or more binary (digital) components in a certain format that are required to reconstitute a record.

Digital components that need updating

Digital components of maintained records that cannot be reconstituted or presented in accordance with current maintenance strategies applicable to those records.

Education program and courses

An education program and courses in understanding the need for recordkeeping as well in skills in using and applying recordkeeping instruments such as metadata schemas for record, an activity classification scheme, retentions schedules, in line with the responsibilities of the staff involved.

Essential characteristics of record types

The intrinsic and extrinsic characteristics of records, as well as the technological characteristics of their digital components, identified as critical for reflecting the intent of the record in the business activity. They regard form, structure, content, context and sometimes behaviour.

Evaluation of RK performance

Consolidated information derived from the evaluation of performance gathered from the recordkeeping processes under control of the given recordkeeping framework. The assessment is done based on the performance criteria.

Existing business metadata structures

The metadata schemas and encoding schemes in use in the business activities and systems.

Existing sets of functional RK requirements

Sets of functional requirements for recordkeeping that are available as standard or made by other organisations or institutions

Existing standards or sets of functional requirements to be used

Choice of (parts of) existing sets of functional requirements for recordkeeping that may fulfil the needs of the organisation in this area within the given infrastructural framework.

Experiment designs

Designs for carrying out experiments to get a better insight in the usability of available preservation strategies for certain types of digital components. They will be properly documented.

External mandate

External directive, law or decision for assigning the responsibility for a business function or set of business activities.

Facilities

Physical space, systems, resources and technical infrastructure needed to enable the business.

Financial information

Information collected and required by an organisation to support its financial decisions or to meet its financial requirements.

Financial plans

A budgetary planning document reflecting the way an organisation plans to acquire or earn and use its financial resources in a given year.

Functional analysis

An analysis of an organisation's business functions and supporting business processes, that identifies how they are interrelated including, in particular, the key relationships between the constituent operational and administrative elements (tasks and transactions).

Functional requirements for RK

The requirements for recordkeeping functionality in systems.

Guidelines and directives for appraisal

The set of guidelines and rules that will govern the appraisal policy and processes.

Guidelines for organising records

A set of guidelines and procedures for structuring records and/or aggregates, for developing classification schemes based upon business activities, and for identifying aggregation layers.

Identified metadata sources

Metadata sources that could serve as a source for extracting recordkeeping metadata.

Identified records

Records or their aggregates to which the contextual metadata (e.g., persons, actions and dates) have been attached.

Identified set of RK functional requirements

The set of functional recordkeeping requirements derived from preservation and appraisal policies, access framework, synthesised records requirements and evaluation information of recordkeeping performance, needed to serve the organisations needs for managing records.

Indexes

Tools that facilitate efficient and effective location records and/or records aggregates suited to a particular inquiry or business purpose. Indexes may be supported by record-keeping Instruments, such as controlled vocabularies and thesauri.

Information about business performance

Information about the way business activities are carried out in accordance with the strategic framework and the business plans, as well as information about deviations and needs and other relevant evaluation information.

Information about destroyed records

Formal information documenting the destruction of records, including information about the quantity and characteristics of records that have been destroyed, and the reason why.

Information about digital components

Technical information concerning digital components of records that is required to facilitate updating of the digital components.

Information about records

Information about the provenance, aggregation, content, structure, form, format or other characteristics of records and/or aggregates in storage.

Information about related records

Information about other records participating in the same business process or activity.

Information about relevant business processes

Description of those business processes that should and will produce/create and need records. This description includes an analysis of the constituting steps, transactions, responsibilities, constraints, workflow, and the related required records.

Information about updated digital components

Information about changes that have been made to digital components of records in the process of updating them, about any problems that occurred in the process, the dates of the updating, and the persons responsible for the updating.

Information identifying digital components of a requested record

Technical composition and location information concerning digital components of a requested record that is necessary to reconstitute the record from its digital components.

Infrastructural framework

A comprehensive, integrated, operational and administrative set of policies, standards, procedures and guidelines for managing all the ‘hard’ and ‘soft’ structural elements that support the human and organisational capabilities required to effectively plan, build, use and leverage all of an organisation’s integrated framework components.

Integrated RK functionality

The consolidated set of functional requirements necessary to support the recordkeeping framework and the underlying recordkeeping processes.

Integrated strategic framework

A comprehensive administrative and operational set of policies, standards, procedures and guidelines that includes the integration of an organisation’s strategic risk management, business and recordkeeping frameworks, and that will govern and guide the organisation’s business activities as well as the support of business and recordkeeping applications and processes.

Internal mandates

The authority derived from external mandates and within the given strategic framework, invested by management or a corporate board or subsidiary to perform specific functions.

Internal requests for records or information

Requests from internal users to consult or receive records, their aggregates, or information about records.

IPR policy

An authoritative set of cohesive and coherent policy, rules, guidelines, and methods for protecting the intellectual property rights of the organisation or other stakeholders from unauthorised access or use.

Juridical requirements

The current laws and regulations that govern the organisation and its business activities and recordkeeping, and/or social, professional, or sectoral/domain specific requirements that influence the need for records.

Keywords

Key terms that have been attributed to a record or aggregate.

Maintained information about digital components

Information about the technical composition and location of digital components that is necessary to maintain/update, store and retrieve the components, and to reconstitute the records from their components.

Maintained information about records

Information about the provenance, aggregation, content, form, structure, and behaviour of records, and/or about the administrative and technical information about them.

Mandate

The legal basis or the intention to achieve a certain goal. This can be translated into different mission statements for carrying out a certain business depending on the interpretation, the identified needs at a certain moment in time, and the available resources.

Mandate drivers

The most basic, core incentives for carrying out business activities.

Market analysis

An evaluation of the business environment, the potential markets in relation to the organisation's main (envisaged) products or services, potential customers, possible competitors, and of what its strengths and weaknesses are, especially in relation to its customers and competitors.

Market information

Information produced or collected by an organisation about the organisation's products and/or services, its customers, and its competitors for the purpose of supporting the organisation's economic, operational and/or competitive success.

Monitoring method

The preservation oversight method stipulated in the Preservation Action Plan for determining whether a storage system is properly maintained and functioning or whether storage media are intact and free from problems that would interfere with reading the data written on the media.

Outgoing communication

Messages and other documents communicated with external parties in relation to the business activities, as well as the final result(s) of carrying out business activities.

Performance analysis

An assessment, based on consideration of business performance reports and other formal and informal data, of the actual performance or functionality of an organisation's business framework at any point in time, relative to the desired performance or functionality of the business framework as specified in the business framework plan.

Performance information

Information about the performance of recordkeeping activities, including registration of exceptions, errors, inadequacy or deviations of established rules and methods.

Preservation action plans

Set of rules, procedures, methods, and technical requirements governing the specific preservation actions to be taken for the classes of digital components covered by the Preservation Policy, and which also indicate the time or conditions when such actions should be taken.

Preservation policy

The authoritative set of coherent policies, standards, guidelines, and criteria for maintaining and preserving records, their aggregates and their related metadata as well as their constituent digital components, as long as required according to the retention policy. These policies and standards include guidelines and criteria for maintaining digital components, and for reconstituting and reproducing records in authentic form. The policy is taking into account the evaluation of the recordkeeping framework, performance information, prior preservation policies and the state of technology.

Preservation policy evaluation reports

Definition 1: An evaluation of the suitability of the current preservation policy based upon the recordkeeping performance information.

Definition 2: Assessment information on how the current preservation policy suits the needs of the organization.

Preservation principles

The core and authoritative instructions governing the process of preserving records that are used to help guide the preservation policy.

Preservation requirements

The requirements identified to preserve the record types, aggregations, associated metadata and digital components, for as long as they need to be preserved.

Primary and secondary use

The value of records both with respect to their ability to serve the purposes of the business and the organisation and to their ability to serve as sources of information for persons and organisations other than the business and the organisation (e.g. freedom of information, collective memory).

Privacy policy

An organisation's authoritative set of cohesive and coherent rules and guidelines, and methods for protecting the information on (human) subjects contained in the organisation's records from unauthorised access.

Problem correction method

The strategy stipulated in the preservation action plan for correcting storage and/or access problems of a specified type.

Processed requests

Requests for information about records or aggregates or for records/aggregates and/or their digital components that have been accepted as eligible for processing.

Product or service

Any product or service that is the result of a business activity and falls under the mandate of the organisation.

Record to be created

Those records deemed necessary and/or desirable to support business needs and obligations as determined based on the appraisal policy.

Records

Information created, received, and maintained as evidence and information by an organisation or person, in pursuance of legal obligations or in the transaction of business (ISO 15489-1:2001).

Recovered file

A physical or logical file to which the problem correction method prescribed in the preservation action plan has been successfully applied after one or more storage problems affecting the file were found.

Refreshed file

A physical or logical file that have been copied from an older storage medium or system to a newer one using the storage update method prescribed in the preservation action plan.

Registered and classified records

Records that have been checked, registered and classified according to the rules and classification scheme and that need to be stored.

Registered records

Records that have been assigned an unique identifier and the necessary registration metadata, according to the registration rules.

Registration information

Information about the records that have been captured, including an unique identification number, registration date, and other registration information deemed necessary.

Registration rules

A formal set of rules specifying how records need to be registered and what metadata need to be captured and what procedures for assigning a unique identifier to each record need to be followed.

Rejected requests

Requests that do not meet the criteria or requirements for access. Reasons for rejection may include restrictions on records or information about them, incomplete requests.

Relevant relationships between systems

Analysis of the relationships between an organisation's various business (administrative and operational) systems, and the business functions, processes and transactions they support, necessary to develop an appropriate retention schedule.

Reproduced/reproducible records and information about them

Reproduced Electronic Record. An authentic representation or other version of a record reconstituted from its digital components, along with information supporting the interpretation of the record.

Request for digital components

An instruction to retrieve the digital components of one or more records or of one specific type (format).

Requested digital components/packages

Digital components of one or more records retrieved from storage based on a request either as individual entities or wrapped in metadata and with instructions.

Requested records

Records requested either by internal users in support of business activities, or by external users for support of their own activities.

Requests for records or information

Requests from either internal or external users to consult or receive records, their aggregates, or information about records.

Requirements for presenting records/aggregates

An accounting of the contextual and provenancial characteristics of records and records aggregates necessary for ensuring that records are presented properly ordered, identified and documented with respect to their relationships with each other. As a result the records/aggregates can be properly interpreted and used.

Requirements for RK in system(s)

The functional requirements for recordkeeping in systems necessary to adequately support an organisation's recordkeeping processes within the constraints of available technology.

Retention requirements

Requirements that from a business perspective determine how long records should be preserved based on the identified needs and risks.

Retention schedule

An overview of how long records and/or aggregates need to be kept based upon a functional classification business records in an organisation, including authorised disposition instructions for those records.

Retrieval method

The method identified in a preservation action plan for retrieving information about records/aggregates and/or retrieving the digital components in response to requests for records or information about or contained in records.

Retrieval requirements

The set of requirements that should support the retrieval of records/aggregates and information about records/aggregates and their digital components based upon the usage information and patterns of users either within or outside the organisation.

Rights and responsibilities

The set of legal, moral and/or ethical expectations of, and obligations to, any and all affected parties with respect to the impact of such expectations and obligations on an organisation's activities, employees, partners, clients, etc.

Risk analysis

Report on an analysis of the risks that may exist based on an assessment of existing internal and external requirements and frameworks, the business needs and ensuring the continuity of an organisation. This risk analysis identifies the consequences for the creation, management, maintenance of and access to records (and provides options how to take care of them)..

Risk management framework

A set of cohesive and coherent policies, procedures, rules, standards, guidelines, criteria and methods based on identified risks, the probability of these risks occurring, (possible) measures to mitigate them, including the assignment of responsibilities.

This framework will be based on an analysis of the rights and responsibilities, stakeholder interests, mandate drivers and market analyses within the constraints of society, the organisation's accountability framework and its corporate culture.

RK framework

A set of cohesive and coherent policies, procedures, rules, standards, guidelines, criteria and methods that will guide, manage and align an organisation's recordkeeping functions with the organisation's juridical requirements and its business and risk management frameworks.

RK HRM instruments

Description of recordkeeping competencies and of recordkeeping job functions as well as information about education/training of staff in recordkeeping skills.

RK implementation performance criteria

The set of criteria used to measure the progress and success of the implementation of the recordkeeping program (or parts of it) within the organisation.

RK implementation plans

Plans stating the scope and goals of implementation of recordkeeping in the organisation, including the required resources and deliverables

RK implementation plans & progress reports

Plans stating the scope and goals of recordkeeping implementation, including the required resources and deliverables, as well as reports detailing the current state of implementation progress.

RK implementation progress reports

Reports detailing the current state of progress in implementing recordkeeping in relation to the goals and deliverables.

RK instruments

Instruments that will support the creation and management of records/aggregates, such as classification scheme(s), retention schedule, controlled vocabularies, access classification scheme.

RK metadata requirements

Metadata specifications based on recordkeeping metadata needs within the given business context, the integrated recordkeeping functionality and identified metadata sources.

RK performance criteria

Operational criteria that enable the assessment of the recordkeeping activities, processes, procedures, and systems in relation to the requirements and the goals set in the recordkeeping framework

RK performance reports

Reports with periodically compiled information about the ability of the individual components of the recordkeeping function to meet the performance criteria.

RK principles, standards and methods

The principles, standards and methods governing the management of records within the Recordkeeping profession.

RK process and system requirements

The set of requirements for recordkeeping processes and for supporting systems and technical infrastructure, needed to fulfill the identified needs of the organisation for the creation, maintenance and disposal of records.

RK risk analysis

An evaluation of the business context and related legal, business, organisational and societal requirements to identify risks to which the recordkeeping function needs to respond, their probability and how to mitigate them.

RK security policy

An organisation's authoritative set of cohesive and coherent rules/guidelines, criteria and methods for establishing, updating and enforcing access rights to records based on (re)evaluation of the organisation's recordkeeping infrastructure framework and record-keeping system performance, in concert with the constraints of the organisation's appraisal policy and risk management framework.

RK theory and methods

The existing theoretical concepts, principles, standards, tools, and approaches in the recordkeeping domain

Sample records

A set of records well-described and randomly retrieved from storage, which, along with preservation performance information, are used to support/evaluate preservation strategies, tests. There may be different sets of different composition (e.g., by type, or by complexity)

Search results

Information provided to the user based on his/her search question that can be used determine what records should be retrieved or to refine a search question.

Selected metadata components

Metadata standards and sets selected from recordkeeping framework and integrated RM functionality.

Societal influence

Social, moral and ethical standards and expectations of (external) communities.

Specifications for authentic records

Information identifying and describing/specifying what essential characteristics of records determine the authenticity of records seen from the perspective of the business activity.

Staff

An organisation's personnel who have been assigned tasks.

Stakeholder interest information

Information about the interests of an individual or group in the performance of an organisation, its capability to be profitable, in delivering the intended results/products, and maintaining the viability of the organisation's products and/or services.

Stakeholder interests

The interests of an individual or group with respect to the success of an organisation in delivering intended results and maintaining the viability of the organisation's products and/or services.

State of technology

The state of the art of the information technology with respect to its ability to satisfy recordkeeping requirements, the state of the underlying computer science with respect to its ability to develop relevant capabilities not within the state of the technology, and the existence and prevalence of applicable standards.

Storage plan

Set of rules, procedures and technical requirements governing storage of the digital components of records. Also part of the Preservation Action Plan that specifies files and directories (and their relative and absolute locations) into which one or more digital components of records are placed in the storage system.

Storage problem

A problem with storage media, storage formats, digital components, a storage system or facility that could impact on access to, and the continued preservation of, stored records.

Storage update method

A method used to ensure that stored digital components are completely and correctly brought forward when any component of a storage subsystem is changed or when digital components are moved or migrated to newer storage media.

Stored digital file

Digital files placed in a storage system on digital media.

Synthesised records requirements

The coherent set of requirements from a business perspective that include the characteristics critical for authenticity for each type of records, rules for metadata, and the rules for organising the records.

System for unique identifiers

A systematic way of identification that is documented and consistently applied and enables the assignment and persistently linking of a unique, unambiguous, and permanent code (potentially any combination of numeric and alphabetical values) to every record and/or aggregation.

Targeted preservation methods

For specific record formats, methods for overcoming technological obsolescence of file formats. Includes methods such as emulation, conversion to current format, conversion of proprietary formats to standard formats, and conversion to self-describing file formats.

Technical infrastructure

The planned configuration of an organisation's computing systems (hardware and software), associated communications and network systems, as well as any services that may be needed to operate and maintain such systems.

Trained staff

All employees who have been trained to perform specific Recordkeeping activities within an organisation. This includes also staff that is not exclusively working within the recordkeeping function.

Transition strategies

A description of the strategies and related activities necessary to move the organisation from the current level of recordkeeping to the identified next level, based upon the capacity assessment. This includes criteria to assess whether the organisation has reached the next level.

Unique identifier

The code with which a record or aggregate uniquely can be identified. The domain of uniqueness will be at least the organisation. The code should be persistent through time.

Updated digital components

An updated digital component is a component that has been modified under a preservation action plan.

Updated storage information

Information indicating a change in the location of a digital component in storage, the occurrence of a storage problem, the action taken to correct a storage problem, the results of such action, or the copying of digital files from older to new storage media.

Usage information

Information about the need for and the use of records, the questions asked, the frequency of use, problems in retrieval.

Work plans

Schedules, charts, graphs or other documents that summarises clearly the various components of particular business processes or activities and how they fit together, while outlining the significant responsibilities and duties of individuals or entities with respect to those processes or activities.

Work process analysis

The precise mapping of the sequence of steps or actions required to produce a business outcome that complies with the organisation's functions, its systems and rules. It may be extended to describe the derivation of the organisational procedures and rules from the socio-legal context in which the organisation is located.

Workflow

A descriptive and analytical account of one or more work processes, including the sequence of inherent steps, required to achieve a defined outcome.

It describes the transfer of documents, records, information and/or tasks from one participant (human or machine) to another for action, according to a set of procedural rules and within the constraints of the current state of technology.

Business-driven Recordkeeping Model

Definitions of the classes occurring in the UML class diagrams

11 January 2008 Version
by Hans Hofman

Note: The following list of definitions of the entities used in the UML class diagrams of the BDR model (see Narrative associated with the Consultation Draft of the model) are derived from many different sources and may be subject to comments.

Access action

The action of finding, using, or retrieving information, usually subject to rules and conditions. (*NAA Recordkeeping Glossary*)

(Business) activity

Activities are the major tasks performed by an organisation to accomplish each of its functions. An activity is identified by the name it is given and its scope note. The scope of the activity encompasses all the transactions that take place in relation to it. Depending upon the nature of the transactions involved, an activity may be performed in relation to one function, or it may be performed in relation to many functions. (*NAA Recordkeeping Glossary*)

Business activity is used as a broad term, not restricted to commercial activity, but including public administration, non-profit and other activities.

Agent

Responsible agent

Individual, workgroup or organization responsible for or involved in record creation, capture and/or records management processes (*ISO 23081-1:2006*).

Analysis

A systematic approach to problem solving. Complex problems are made simpler by separating them into more understandable elements. This involves the identification of purposes and facts, the statement of defensible assumptions, and the formulation of conclusions.

www.ojp.usdoj.gov/BJA/evaluation/glossary/glossary_a.htm

Risk analysis

Market analysis

Archive(s)

1. Records that are appraised as having archival value. (*NAA Recordkeeping Glossary*)
2. A level of aggregation of records generated by an individual or organisational body.

Behaviour

The set of dynamic and interactive characteristics of a digital record that are necessary for using it in a way that reflects the original intent and thus its authenticity.

Business rules

Set of the operations, definitions and constraints that apply to an organization in achieving its goals.

For example a business rule might state that no credit check is to be performed on return customers. en.wikipedia.org/wiki/Business_rules

Capture

A deliberate action that results in the registration of a record into a recordkeeping system. For certain business activities this functionality may be built into computer systems so that the capture of records is concurrent with the creation of records. (*NAA recordkeeping glossary*)

Code of practice

A set of written rules that state operating requirements for specified activities.
www3.gov.ab.ca/env/air/Info/definitions.html

Code of ethics

An organized group of ethical behaviour guidelines, which govern the day-to-day activities of a profession or organization. www.peakagents.ca/glossary/c10.htm

Computer file

A set of data with the same file format.

Cultural values

The accumulated habits, attitudes, and beliefs of a group of people (*or social group*) that define for them their general behaviour and way of life; the total set of learned activities of a people.
www.geographic.org/glossary.html

Customer relations

The interaction between an organisation (or individual) and one or more persons who expect, request, buy something from it.

Disposition

Any action that changes the circumstances of a record or removes a record from its usual setting. Disposal can include destruction, damage, alteration, or transfer of custody or ownership of records. The National Archives of Australia authorises disposal of Commonwealth records for the purposes of the *Archives Act 1983*. Also called disposal, usually in the Australian context. (*NAA recordkeeping glossary*)

Encoding scheme

Controlled list of all the acceptable values in natural language and/or as a syntax-encoded text string designed for machine processing (*ISO 23081-1:2006*).

Extraction action

A preferably automated activity that extracts, based on a cross-walk between two metadata schema's, (meta)data from one environment (mostly system) into another.

NB. In case it is not automated the tool has to be informed manually what metadata should be extracted.

Form

The extrinsic elements of a record that reflect the lay-out, structure and if needed the behaviour.

File

(Noun) An organised unit of documents accumulated during current use and kept together because they deal with the same subject, activity or transaction. (*NAA recordkeeping glossary*)

Framework

A system of rules, ideas or principles that is used to plan or decide something.

www3.gov.ab.ca/env/air/Info/definitions.html

Risk management framework

Strategic framework

Business framework

Infrastructural framework

Accountability framework

Financial framework

Function

Functions represent the major responsibilities that are managed by the organisation to fulfil its goals. They are high-level aggregates of the organisation's activities. (*NAA Recordkeeping Glossary*)

Jurisdiction

The extent of authority: 1) of a court over a certain matter or person; 2) of a government organization. (adapted from www.websiteupgrades.ca/glossary/free/J.shtml)

Legislation

A law including acts of parliament and other general legal rules.

www.apheda.org.au/campaigns/burma_schools_kit/resources/1074040257_16812.html

Mandate

Identifies and provides information about the instrument that imposes a requirement to make and keep a record or group of records.

Internal mandate

External mandate

Mandates can be internal or external. Internal mandates include policy, administrative instructions, business decisions or authorisations. External mandates include laws, regulations, standards or statements of best practice etc that incorporate requirements to make and keep records. (*NSW RKMS*)

Market

A public place where goods and services are traded, purchased and sold.

www.valic.com/valic2003/aigvalic.nsf/contents/edu_glossary-m

or

1. The interaction between supply and demand to determine the market price and corresponding quantity bought and sold.

2. The determination of economic allocations by decentralized, voluntary interactions among those who wish to buy and sell, responding to freely determined market prices.

www-personal.umich.edu/~alandear/glossary/m.html

Metadata

Data describing the context, content and structure of records and their management through time (*ISO 15489-1:2001, 3.12*). As such, metadata are structured or semi-structured information that enables the creation, registration, classification, access, preservation and disposition of records through time and within and across domains.

Structural metadata: metadata documenting the record structure

Technical metadata: metadata documenting the technical environment in which the record has been originally generated as well as the technical environment necessary to reproduce it

Contextual metadata: metadata documenting the provenance of the record or any aggregation

Plan

A proposed or intended method of getting from one set of circumstances to another. They are often used to move from the present situation, towards the achievement of one or more objectives or goals. en.wikipedia.org/wiki/Plan

Risk management plan

Work plan

Budget plan

Resource plan

Preservation action

The processes and operations involved in ensuring the physical, technical and/or intellectual survival of authentic records through time.

Preservation encompasses environmental control, security, creation, storage, handling, and disaster planning for records in all formats, including digital records. (*NAA Recordkeeping Glossary*)

Record

Information created, received, and maintained as evidence and information by an organization or person, in pursuance of legal obligations or in the transaction of business (*ISO 15489:2001, clause 3.15*).

Record instance

The description of how a record can be expressed or reproduced without losing its authenticity, reliability and integrity, using one or more specified computer files.

Record characteristics

The coherent set of essential aspects that given the business context in which a record (or aggregate) is created or used, make that record authentic, reliable, and usable. They regard the structural, behavioural and form aspects of a record.

Requirements

Business requirements

RK requirements

Rights

Entitlements assured by law, custom, or property.

[IPR, copy rights, privacy]

Risk

The possibility of suffering loss, harm, danger, damage

Business risk

RK risk

Schema

RK metadata schema

Business metadata schema

Logical plan showing the relationships between metadata elements, normally through establishing rules for the use and management of metadata specifically as regards the semantics, the syntax and the optionality (*obligation level*) of values (*ISO 23081-1:2006*).

Series

A level of aggregation of records, above the case file.

NB. May be named differently in different jurisdictions.

Social structure

[nation, community, family]

A system of social relations.

Social structure does not concerns itself with people—individuals forming the society or their social organisations, neither does it study who are the people/organisation forming it, or what is the ultimate goal of their relations. Social structure deals rather with the very structure of their relations—how are they organized in a pattern of relationships.

en.wikipedia.org/wiki/Social_structure

Technical environment

The platform of hard- and software needed to reproduce or render authentic records in digital form.

Transaction

The smallest unit of business activity. Uses of records are themselves transactions.

See also **Function** and **Activity**.

Sources: Adapted from Standards Australia, AS 4390, Part 1, Clause 4.27;

Standards Australia, AS ISO 15489, Part 2, Clause 4.2.2.2.

RK transaction

Business transaction

Transformation

It holds information on the process of performing a migration. It consists of a collection of transformation units (which in turn hold information on which files have been migrated into what).

Transformation unit

A logical unit that will be migrated together as one unit. This could be a single file (e.g., a Word document) or a large set of files (e.g., an entire database of multiple files). It contains two sets of files: the Pre-Transformation File Set (the set of files that are to be or have been migrated) and the Post-Transformation File Set (the set of files created as a result of this transformation).

Appendix 16

Overview of the Records Continuum Concept¹

The following text was extracted and adapted from:

Xiaomi An, “An Integrated Approach to Records Management,” *Information Management Journal* July/August (2003): 24–30.

As defined in Australian Standard 4390, the records continuum is “...a consistent and coherent regime of management processes from the time of the creation of records (and before creation, in the design of recordkeeping systems) through to the preservation and use of records as archives.”²

The earliest view of the continuum concept came from Australian national archivist Ian Maclean in the 1950s. He said records managers were the true archivists, and that archival science should be directed toward studying the characteristics of recorded information, recordkeeping systems, and classification processes. His view promoted the search for continuity between archives and records management.

The records continuum as a model concept was formulated in the 1990s by Australian archival theorist Frank Upward based on four principles:

5. A concept of “record” inclusive of records of continuing value (archives) stresses their uses for transactional, evidentiary, and memory purposes, and unifies approaches to archiving/recordkeeping, whether records are kept for a split second or a millennium.
6. There is a focus on records as logical rather than physical entities, regardless of whether they are in paper or electronic form.
7. Institutionalization of the recordkeeping profession’s role requires a particular emphasis on the need to integrate recordkeeping into business and societal processes and purposes.
8. Archival science is the foundation for organizing knowledge about recordkeeping. Such knowledge is revisable but can be structured and explored in terms of the operation of principles for action in the past, the present, and the future.³

In her book *Yesterday, Today and Tomorrow: A Continuum Responsibility*, Sue McKemmish writes: “The model provides a graphical tool for framing issues about the relationship between records managers and archivists, past, present, and future, and for thinking strategically about working collaboratively and building partnerships with other stakeholders.”⁴

In *Records Management: A Guide to Corporate Recordkeeping*, Jay Kennedy and Cherry Schauder explain the four dimensions that Upward used in his concept of the continuum model:

9. At level one, the model identifies accountable acts and creates reliable evidence of such acts by capturing records of related/supporting transactions. Records of business

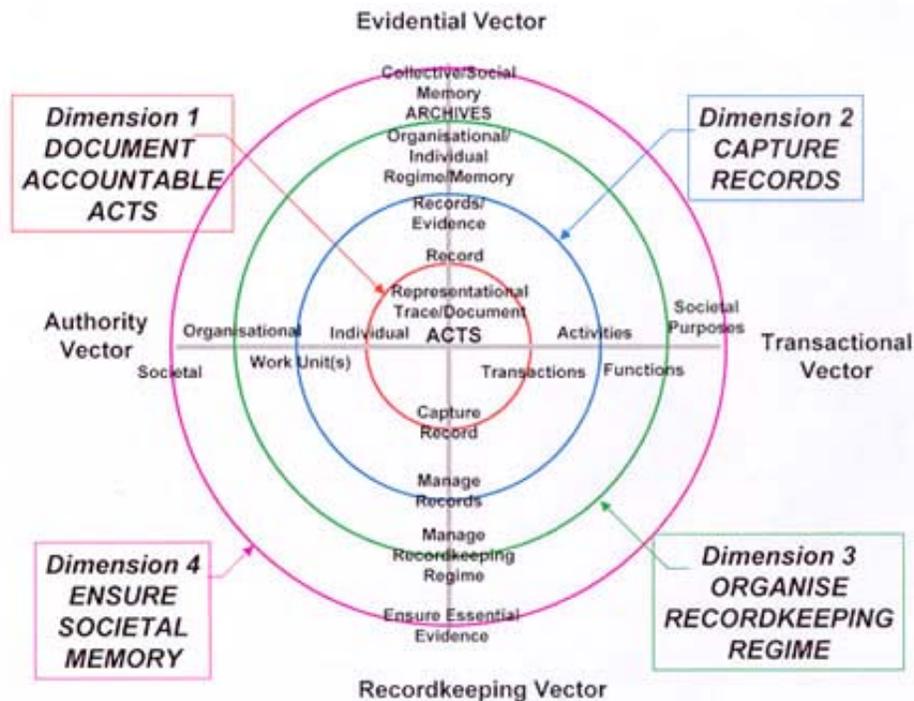
¹ See also <http://www.sims.monash.edu.au/research/rcrg/>.

² Standards Australia, *Australian Standard 4390, Records Management* (Homebush, New South Wales: Standards Australia, 1996).

³ Frank Upward, “In Search of the Continuum: Ian Maclean’s ‘Australian Experience’ Essays on Recordkeeping,” in S. McKemmish and M. Piggot, eds. *The Records Continuum: Ian Maclean and Australian Archives First Fifty Years* (Sydney: Ancora Press in association with Australian Archives, 1994). Online reprint available at <http://www.sims.monash.edu.au/research/rcrg/publications/fuptrc.html>.

⁴ See Sue McKemmish (1997), “Yesterday, Today and Tomorrow: A Continuum Responsibility,” in *Proceedings of the Records Management Association of Australia 14th National Convention*, RMAA Perth, 15-17 September 1997.

- activities are created as part of business communication processes within the organization (e.g., through e-mail, document management software, or other software applications).
10. At level two, recordkeeping systems manage “families” of transactions and records series documenting processes at the work-unit or single-function scope of complexity. Records that have been created or received in an organization are tagged with metadata, including how they link to other records.
 11. At level three, a seamless recordkeeping scheme embraces the multiple systems and families of records that serve the entire documentary needs (i.e., business, regulatory, and cultural/educational/historical) of a single juridical entity. Records become part of a formal system of storage and retrieval that constitutes the organization’s corporate memory.
 12. At level four, a collaborative recordkeeping establishment under the guidance of a suitably empowered public recordkeeping authority serves the needs of the total society, its constituent functions, and the entities that carry them out. The recordkeeping establishment serves the documentary needs of many entities within its jurisdiction and ensures the accountability and the cultural memory of the society as a whole. Records required for purposes of societal accountability (e.g., by corporate law) or other forms of collective memory become part of wider archival systems that comprise records from a range of organizations.⁵



⁵ Jay Kennedy and Cheryl Schauder, *Records Management: A Guide to Corporate Recordkeeping*, 2nd edition (South Melbourne: Longman, 1998).

In the article “The Records Continuum Model in Context and Its Implications for Archival Practice,” Sarah Flynn explains that the records continuum model is significant because it

- broadens the interpretation of records and recordkeeping systems offered by the lifecycle model. Such broadening is helpful, given the variety of contexts in which archivists and records managers operate and in which archives and records are used;
- reminds us that records (including archives) are created and maintained for use as a result of business and administrative functions and processes, rather than as ends in themselves; and
- emphasizes cooperation beyond the walls of repositories, especially between the closely related, if occasionally estranged, professions of archives administration and records management—a cooperation that is more important than ever in the contemporary climate of outsourcing and cross-sector working.⁶

In the article “Life Cycle Versus Continuum: What Is the Difference?” Peter Marshall states that the records continuum’s primary focus is the multiple purposes of records.⁷ It aims for the development of recordkeeping systems that capture, manage, and maintain records with sound evidential characteristics for as long as the records are of value to the organization, any successor, or society. It promotes the integration of recordkeeping into the organization’s business systems and processes.

According to McKemmish, the best-practice mechanism behind the records continuum model uses an integrated approach for managing records and archives. Records managers and archivists are brought together under an integrated recordkeeping framework with the same goal: to guarantee the reliability, authenticity, and completeness of records. The framework provides common understanding, consistent standards, unified best-practice criteria, and interdisciplinary approaches and collaborations in recordkeeping and archiving processes for both paper and digital worlds. It provides sustainable recordkeeping to connect the past to the present and the present to the future. It can coherently exist in a broader dynamic, changeable context that can be influenced by legal, political, administrative, social, commercial, technological, cultural, and historical variables across time and space. The integrated recordkeeping framework would:

- facilitate provenance
- underpin accountability
- constitute memory
- construct identity
- provide authoritative sources of value-added information

The continuum’s purpose-oriented, systems approach to records management fundamentally changes the role of recordkeeping. Instead of being reactive, managing records after they have been created, recordkeeping becomes proactive. In partnership with other stakeholders, identifying records of organization activities that need to be retained, then implementing business systems designed with built-in recordkeeping capability ensures capturing records of evidential quality as they are created. Built-in capture and assessment mean that records of value are created in the first place whenever electronic systems are used for business transactions. With appropriate metadata to ensure that they are accurate, complete, reliable, and usable, these records have the necessary attributes of content, context, and structure to act as evidence of business activity. And, Marshall notes, knowing from the outset which digital records must be

⁶ Sarah J. A. Flynn (2001), “The Records Continuum Model in Context and its Implications for Archival Practice,” *Journal of the Society of Archivists* 22(1): 79–93.

⁷ Peter Marshall (2000), “Life Cycle Versus Continuum: What is the Difference?” *Informaa Quarterly* 16(2): 20–25.

kept for the longer term means such records can be migrated across systems as hardware and software upgrades occur.

The mechanisms of best practice behind the records continuum model are ideal for integrating records and archives management because the records continuum focuses on:

- similarities rather than differences
- qualities and quantities rather than quantities alone
- positive and cohesive ways of thinking rather than disparate or passive ways
- integrated policy making rather than fragmented frameworks
- integrated control of policy implementation rather than separate control
- integrated rather than disparate approaches to problem solving
- meeting customers' needs through collaboration rather than by duplication and overlap

These arguments highlight the records continuum model's importance as a best-practice model for managing digital records when the aim is to improve responsiveness, increase efficiency and satisfy users' requirements.