United Nations Archives and Records Management Section

ARMS Standard on Recordkeeping Metadata

Exposure draft June 2003

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Executive Summary

This Standard describes the metadata that the United Nations Archives and Records Management Section (ARMS) recommends should be captured in recordkeeping systems used in all United Nations offices. Compliance with this Recordkeeping Metadata Standard will help UN offices to identify, authenticate, describe and manage their electronic records in a systematic and consistent way to meet business, accountability and archival requirements.

Part one of the standard explains the purpose and importance of standardised recordkeeping metadata and details the scope, intended application and features of the Standard. The Standard defines a set of 16 metadata elements (12 of which constitute a core set of mandatory metadata) and numerous sub-elements that may be incorporated within recordkeeping systems. Part two of the Standard provides full details of the metadata elements and sub-elements, defining them in relation to their purpose and rationale. For each element and sub-element the Standard provides and indication of applicability, obligation, conditions of use, assigned values and approved schemes.

The Standard should be read and used in conjunction with the accompanying series: the ARMS *Functional Requirements for Electronic Recordkeeping Systems,* which is essential for obtaining the high level requirements for designing and/or purchasing and implementing new recordkeeping systems; ARMS *The Manual for the Design and Implementation of Recordkeeping Systems,* which provides practical guidance on the steps that need to be undertaken to design and implement, recordkeeeing systems that meet ARMS functional requirements; and the ARMS *Reference Document* which provides useful background information in support of other ARMS Recordkeeping initiatives. The references to the ARMS *Functional Requirements for Electronic Recordkeeeping Systems* contained in this *Metadata Standard* are not exhaustive but are aimed at linking the most relevant and important points between the two.

Section 1: Introduction to Recordkeeping Metadata: what is 'Metadata'?

Background

There are a number of needs within the United Nations and the broader information environment that make standard-setting for electronic and other recordkeeping not just desirable, but essential. They include:

- requirements for UN offices to implement recordkeeping systems that meet ARMS requirements;
- broad policy directions for United Nations' business to be conducted online;
- initiatives such as the Digital Archives Programme to facilitate the accessibility and retrieval of United Nations records online; and
- the release of the International Standard on Records Management (ISO 15489) as a code of best practice.

Of these, the International Standard for Records Management provides advice on how to design and implement recordkeeping systems that will capture and manage the content and context of transactions. The Standard recommends that records be registered in a recordkeeping system and linked to descriptive information about their context . Such descriptive information is now referred to by recordkeeping professionals as 'metadata'.

The term 'metadata' originally emerged in the IT community, but the concept has been employed by information professionals for some years to describe information that is used to facilitate intellectual control of, and structured access to, information resources in library collections, file registries and archival holdings. Traditional records management tools such as file registers, file covers, movement cards, thesauri and indexes all provide metadata about records. Such tools help records managers control and manage records, and provide important contextual information about who used records, how and when. Traditionally, archivists provided additional metadata by creating indexes, file lists and other finding aids that helped researchers to locate and understand records once they were transferred from the organisational environment in which they were created to archival custody.

This recordkeeping metadata standard is one of a number of products being adapted by the United Nations Archives and Records Management Section to help agencies respond to changes in the recordkeeping environment.

Purpose and Importance of Standardised Recordkeeping Metadata

This standard sets out the type of information that UN offices should capture in a structured way to describe the identity, authenticity, content, structure, context and essential management requirements of records. Such descriptive information will enable reliable, accurate and accessible records to be accessible through time as a means of satisfying business needs, evidential requirements and broader community expectations.

United Nations offices are required to carry out their business in an accountable, transparent and efficient manner. Good recordkeeping is an essential requirement for efficient administration and accountability. It is the basis for establishing and maintaining documentary evidence of United Nations activities and helps UN offices to manage and preserve their corporate memory for short- and long-term purposes.

United Nations online accessibility initiatives and the emergence of electronic commerce provide added impetus for UN offices to implement reliable recordkeeping systems. UN offices need to create and keep not only information about what transactions they have carried out via electronic means but also evidence, in the form of records, that capture the content and the context of these activities. This evidence therefore needs to document what transaction occurred, when it occurred, its location, the identity of the participants, and its relationship to the business process for which it serves as evidence.

While traditional recordkeeping environments accept these requirements and built them into recordkeeping systems, the electronic environment forces us to think anew about the strategies required to ensure that records have the same degree of reliability, authenticity and usability they had in the paper world. In short, electronic recordkeeping systems are metadata systems, and metadata is the lifeblood of any good recordkeeping system.

The adoption of this metadata set as a common descriptive standard across the United Nations will help UN offices to fulfill a range of records management responsibilities. Implementation will:

- ensure that adequate contextual information about transactions is recorded and linked to the relevant record;
- assist in the retrieval of records by describing them in terms of recognisable UN office functions, by limiting the terms by which records are indexed, and by providing links between records of the same or similar activities and transactions, through the use of controlled vocabularies and other schema;
- control access to records by defining, at creation, the security or legal status of records or any other caveats on their retention or use;
- facilitate the transfer of, and access to, records between agencies when functional responsibilities change;
- reduce the risk of unauthorised access to, or fraudulent use of, records;

- ensure that the costs of storing records beyond the period of their administrative utility does not escalate;
- ensure that vital records are not lost when new systems are implemented;
- aid in planning for data migration and other preservation needs by identifying, in standardised and accessible ways, the software and hardware dependencies of records;
- provide a benchmark for measuring the quality of recordkeeping within and between agencies for auditing and other purposes; and
- facilitate the efficient electronic incorporation of information about UN records into the intellectual control systems and public finding aids of the United Nations Archives.

Metadata and the management of electronic records

The most important characteristic of electronic recordkeeping metadata is that it gives an electronic record its 'record-ness', according to ISO 15489 (Records Management) (paragraph 7.2) the general characteristics of a record are: ' *a record should correctly reflect what was communicated or decided or what action was taken. It should be able to support the needs of the business to which it relates and be used for accountability purposes'*. The consequent definition of metadata given in ISO 15489 runs: '*data describing context, content and structure of records and their management through time'*.

One of the principal properties of an electronic document (as opposed to an electronic *record*) is that it can readily be edited. Preventing this from happening to records where it should not and auditing where it *has* apparently happened are vital issues.

Recordkeeping metadata gives records appropriate characteristics by:

- supporting record retrieval;
- supporting the wide range of records management processes in the *Functional Requirements*;
- establishing the provenance of the record (ISO 15489 states that 'the context in which the record was created, received and used should be apparent in the record, including the business process of which the transaction is part, the date and time of the transaction and the participants in the transaction)';
- showing whether the integrity of a record is intact (e.g. it has not been subject to changes after being fixed as [or 'declared'] a final record);

- demonstrating that the links between documents, held separately, but combining to make up a record, are present';
- demonstrating that the relationships between separate records are present;
- providing essential information to support interoperability / sustainability of the record between platforms and across time and technological platforms.

Essentially, metadata implementation ensures that what happens at record 'declaration' is that the content and most of the applicable metadata is fixed as it is at that point and cannot be changed. ISO 15489 again: '*the structure of a* record*, that is, its format and the relationships between the elements forming the record, should remain intact'*. This should be done to an appropriate evidential level to meet UN office requirements.

Scope and Application of the Standard

This standard describes the basic metadata elements that UN offices, irrespective of their functions and activities, should adopt to describe, manage and access their records. ARMS has developed this Standard to document metadata requirements that apply to all United Nations records.

The Standard includes both mandatory and optional descriptive elements. The twelve mandatory elements must be applied to all records to ensure that they are complete, accurate, reliable and useable. The optional elements enhance the functionality of records but may not be appropriate to collect or, alternatively, retain for all types of records to meet all needs. The metadata elements in this standard are designed to be applicable to both individual records and to logical aggregations of records.

Significant or complex records, particularly those records of archival value which will be kept for a long time and made available to the public will need to be described within the office's recordkeeping system using most or all of the metadata elements. In contrast, short-term, simple, ephemeral or unimportant records may need only the mandatory metadata to be created for them. Such decisions will rest with individual offices after consultation with ARMS.

Systems Design Considerations
UN offices are strongly encouraged to design, select and implement recordkeeping systems that are capable of supporting the full set of mandatory and optional metadata elements to provide maximum flexibility in their recordkeeping practices over time. Such systems should be designed to support the *automatic* creation and capture of as much metadata as possible during the life span of the record. This has two benefits – it minimises the amount of manual input required by action officers and maximises the consistent interpretation of the standard within the recordkeeping system.

The greater the extent of automation of metadata creation and capture, the less it will seem like an intrusion on the daily activities of the office. While a few metadata elements will require a conscious decision by an action officer, most data elements should be captured automatically by the system as transactions are performed.

When selecting records management software, UN offices will need to satisfy themselves that particular products can accommodate the full range of their recordkeeping requirements. Discussions with recordkeeping software vendors during the development of this standard have indicated that systems can be designed to accommodate the full metadata set and to automate many of the capture processes. The Standard provides a clear basis on which vendors can develop or enhance software products to meet both government-wide and agency-specific metadata requirements.

From a systems design perspective it should not be forgotten that records can be controlled simultaneously at multiple levels of aggregation. Certain metadata values, most notably Function and Disposal metadata, can be inherited at lower levels of aggregation from the metadata that has been captured at higher levels of aggregation.

An equally important systems design issue is the requirement that metadata for records destroyed in accordance with records disposal schedules must be retained. Metadata elements requiring retention in these circumstances should include Identifier, Date, Agent, Relation, and Function.

The data elements required by ARMS for certain categories of records will form a subset of the elements and sub-elements outlined in this Standard. Details of the subset will be incorporated as an appendix to this publication in the near future. Agencies will also need to determine and document, at a systems level, what descriptive schemes they will use as the source of data values for particular metadata elements

Audience

The Standard is designed to be used as a reference tool by information managers, records managers, corporate managers and information technology professionals in the United Nations, as well as the software vendor / integrator community.

This exposure draft has been produced in consultation with the United Nations Working Group on Archives and Records Management with representation from the following United Nations offices:

United Nations Secretariat
United Nations Archives and Records Management Section
UNICEF
United Nations Development Program (UNDP)
The Dag Hammarskjold Library
Information Technology and Systems Development (ITSD)

Department of Peacekeeping Operations

Acknowledgments

The first discussion draft of the ARMS *Standard on Recordkeeping Metadata* was drawn mainly from the UN Task Force on Document management Technology: *Metadata – Core Set for Internal Documents; Requirements for Electronic Records Management Systems, 2: Metadata Standard* published by the Public Records Office, London in 2002; and the National Archives of Australia's *Recordkeeping Metadata Standard for Commonwealth Agencies* published in 1999.

Section 2: Recordkeeping metadata elements

The remainder of this document contains explanation of the records management metadata elements themselves with particular points explaining their source, application, obligation level and significance. For ease of reference, the elements are listed below:

METADATA ELEMENT	OBLIGATION
1. Identifier	Mandatory
2. Title	Mandatory
3. Subject	Optional
4. Description	Optional
5. Creator	Mandatory
6. Date	Mandatory
7. Addressee	Mandatory for Email, optional for other records
8. Record type	Mandatory where applicable
9. Relation	Mandatory where applicable
10. Function	Optional but highly recommended
11.Aggregation	Mandatory where applicable
12. Language	Mandatory
13. Location	Optional
14. Security & Access	Mandatory
15. Disposal	Mandatory
16. Format	Mandatory
17. Preservation	Optional

A tabular format is used for each element, varied only very slightly to impart the relevant information for individual elements. The following table includes all the categories involved and explains how the table for each element expresses the information:

Definition	The brief definition of the element
Purpose	The purpose of the element
Rationale	The reason behind the element (i.e. its function within the records management
Obligation	Whether mandatory or optional in accordance with this *Standard*
Aggregation level	At what level(s) of aggregation the element is used (i.e. class, folder, part, record, component)
Use conditions	How the element is to be used. This is picked up in detail in the following fields, particularly *schemes* and *comments*
Repeatable	Indicates whether there can be more than one value for this element applicable to the same object
Sub-elements	Indicates whether there are sub-elements possible for this element or the *same* sub-element. Where there are, the field is subdivided showing the possible values allowed in the Standard:

	Sub-element	**Aggregation level**	**Obligation**	**Source**	**Encoding schemes**
	Sub-element name	Level of aggregation where it applies	Mandatory, recommended or Optional	Whether System or user defined	Any encoding scheme can be used
Assigned values	This field only appears against the **Aggregation** element and represents the unique *encoding scheme* for this element, corresponding with the entities in the *Functional requirements*				
Default value	The value (if any) that should be inserted as a default if no other value is specified by the relevant capture mechanism				
Source	Whence the value for this element is derived. This will typically be from the operating system, Electronic Recordkeeping Systems (ERKS) or the authoring software of the document being declared as a record at the point of declaration (or a combination of these). It may also be inherited from a higher level of aggregation. Occasionally, user definition will be indicated (e.g. record *Title*) This field will clarify when the user would typically select from a pick list (enforced as an *encoding scheme*) within the ERKS, integrated with it or from other business rules At higher levels of the fileplan (class level) 'user definition' may mean the administrator function rather than the normal end user. This is clarified in the *Source* field for the individual elements, where applicable.				
Schemes	The encoding scheme (or list of possible values) used as business rules for populating this field. These may be implemented as lists in the ERMS itself or present in some other form.				
Comments	Any comments which are required to clarify aspects of the element which do not fit into other categories				
Examples	Example(s) of how the element might be populated in use				

1. Identifier

<table>
<tr><td>Definition</td><td colspan="5">Unique identifier for an object, either on the file plan or within the system, be it an individual record (declared document) or an aggregation of records</td></tr>
<tr><td>Purpose</td><td colspan="5">The unique identifier is a code (potentially any combination of numeric and alphabetical values) distinguishing an object from others</td></tr>
<tr><td>Rationale</td><td colspan="5">The System ID (sub-element 1) is for the purposes of the internal processes of the ERK systems (including the underlying database repository) and will rarely, if ever, be visible to the end user, although it can be a useful tool for administrators accessing other information about the fileplan object (e.g. interrogating the audit trail).

The Fileplan ID (sub-element 2) is the reference derived from the fileplan. This is a cumulation of information inherited from higher levels of aggregation in the fileplan as required in Functional requirement A.1.14, according to the following rationale:
The branches of the fileplan at each level will possess a code according to the logic of the classification scheme in use;
In an hierarchical scheme, these codes will cumulate with those existing above them in the fileplan so that the fileplan ID is a reference consisting of a combination of the references above, plus an identifier for the object itself (class, folder and part level);
This information will be applied automatically to descendant objects, though not normally below part level (the only identifier below part level is likely to be the Unique Identifier (UID) unless some form of sequence number within the folder / part is implemented)</td></tr>
<tr><td>Obligation</td><td colspan="5">System ID is Mandatory at all levels (See ARMS Functional Requirements)
Fileplan ID is mandatory at Class, Folder and Part levels</td></tr>
<tr><td>Aggregation level</td><td colspan="5">Record, part, folder and class levels</td></tr>
<tr><td>Use conditions</td><td colspan="5">-</td></tr>
<tr><td>Repeatable</td><td colspan="5">No</td></tr>
<tr><td>Sub-elements</td><td></td><td>Aggregation level</td><td>Obligation</td><td>Source</td><td>Scheme</td></tr>
<tr><td></td><td>1. System ID</td><td>Class, folder, part and record level</td><td>Mandatory</td><td>System defined</td><td>System</td></tr>
<tr><td></td><td>2. Fileplan ID</td><td>Class, folder and part level</td><td>Mandatory</td><td>System defined</td><td>Fileplan structure</td></tr>
<tr><td>Default value</td><td colspan="5">None</td></tr>
<tr><td>Source</td><td colspan="5">System Defined (See sub-elements)</td></tr>
</table>

Schemes	System or fileplan
Comments	-
Examples	[*Sub-element 1*: The format and appearance of system IDs are system specific].

2. Title

Definition	The title given to the record, folder or class
Purpose	To assist in identification, including for retrieval purposes
Rationale	Selection of a meaningful title, i.e. one that gives relevant information about the content as an information resource or its significance in a business process
Obligation	Mandatory
Aggregation level	Class, Folder and Record Level
Use conditions	Title can be implemented as either a natural or controlled language equivalent of the Fileplan ID where that is the naming convention in force. Thus at fileplan level, Title will be an identifier to distinguish the branches of the fileplan. As with fileplan identifier codes, where a hierarchical scheme is in use they *may* be deemed to cumulate down the hierarchy with each level picking up the title attributes of their superior objects (as in the example below and *Functional requirements*). At record level it is far more likely to be implemented as a free text title
Repeatable	No
Sub-elements	-
Default value	None
Source	User defined unless default capture is implemented through the document management environment
Schemes	Organisational (fileplan, thesauri, classification scheme) naming conventions
Comments	Users will often have to specify record titles with a view to their use as a retrieval aid by themselves or other users. This needs to be informed by organisational naming conventions. Alternatively, title can be either a natural or controlled language equivalent of the Fileplan ID.Capture of some documents as records will lead to the population of title fields in record metadata from mapped fields in the document, e.g. email subject lines. These defaults should not *necessarily* be accepted unless the title line is both appropriate and useful (ARMS Functional Requirements A.2.16 – A.2.17). Care needs to be exercised in declaring forwarded emails as there is a danger that a number of records could be saved with undistinguishable titles as a result. This would deprive users of a useful means of distinguishing them, especially where the discussion contained in the string has shifted in its emphasis and could be more precisely described
Examples	***[Class level]: Policy – Storage of records – Official Status Files – Commercial Storage.*** See also examples in *Functional requirements* A.1

3. Subject

Definition	Keywords or phrases describing the subject content of the resource
Purpose	Providing a more structured retrieval aid to searching than can be achieved with **Title**
Rationale	see *Purpose*
Obligation	Optional (Recommended at folder and class levels of aggregation)
Aggregation level	Potentially applies at any level of aggregation (raising system configuration issues not covered in the *Functional requirements*), but especially at record and folder level
Use conditions	Terms that most precisely and specifically define the subject area should be used (i.e. excluding more general terms)
Repeatable	Yes
Sub-elements	-
Default value	None
Source	User defined
Schemes	Local thesaurus if in use, other controlled subject lists, *Functional Requirement A.1.24*
Comments	UN offices where organisational policies require the use of a thesaurus will wish this to be mandatory in their ERMS
Examples	UNTSO – Inwards Code Cables

4. Description

Definition	Free text description of the resource
Purpose	Provides additional detail that may be more helpful to some users than Subject, Title, Fileplan ID and UID when searching
Rationale	see *purpose*
Obligation	Optional
Aggregation level	Potentially applicable at any level of aggregation (raising system configuration issues not fully covered in the *Functional Requirements*), but especially at record and folder level. Support for the functionality is mandatory at *Functional requirement* A.1.38
Use conditions	To be useful, descriptions need to be brief as a user may be browsing through a list of search results only showing the first part of the text. There is no point in merely duplicating the information captured in the **Subject** element as this adds no value
Repeatable	Yes
Sub-elements	-
Default value	None
Source	User defined
Schemes	Organisational naming conventions and guidance may be in force
Comments	-
Examples	At record level: *Correspondence with Secreatry-General* Alternatively the document summary could form the description At class level, a scoping note could be added for the description

5. Creator

Definition	The person responsible for the content of the resource up to the point of declaration as a record
Purpose	Identifying the individual(s) and/or organisation(s) responsible for the intellectual content of the record
Rationale	Establishment of an important aspect of the context of the record
Obligation	Mandatory (if available for externally generated records: see use conditions)
Aggregation level	Record level
Use conditions	Availability of creator information (as defined from the document creation / management environment) will operate in different ways according to business rules and the technology in place: • At the point of declaration of the document as a record, this information needs already to be present by these processes and will be finalised at this point • For material received from outside the organisation, the Creator organisation may be the only available information except in the case of emails where the transmission information should include the sender
Repeatable	Yes
Sub-elements	-
Default value	-
Source	Login of user in native [i.e. authoring] application [ultimately derived from the operating system] or document management software may be implemented as a default. However, there will be circumstances (e.g. collaborative working scenarios) where this will require amendment to some other person who is responsible for the content of the record resource (*Functional requirement* A.2.4016). For example, where someone has begun drafting a document for the authorization of a colleague, it is the colleague who needs to be identified as the creator
Schemes	-
Comments	The value for this element will not always be the same as the person responsible for the *declaration* of the resource as a record. In a recordkeeping system compliant with the *Functional requirements* much contextual information on the provenance of the records will already be present in metadata, information structure and content
Examples	**-**

6. Date

Definition	Date (and time) an important lifecycle event occurred to a resource excluding disposal events which are sub-elements of **15. Disposal**			
Purpose	Identifying vital events for information and evidential purposes (and in the case of email and faxes, the transmission date and time)			
Rationale	see *purpose.* Many recordkeeping system processes use date values to trigger other events (e.g. disposal) according to pre-defined business rules			
Obligation	Mandatory			
Aggregation level	See sub-elements			
Use conditions	-			
Repeatable	No			
Sub-elements	**Name**	**Obligation**	**Aggregation level**	**Source**
	1. Date created	Mandatory for all internally generated records	Record level	Records management environment
	2. Date acquired	Mandatory for email, optional for other records but recommended for all externally produced material	Record level	System generated for email, user defined for other records
	3.Date declared	Mandatory	Record level	ERMS
	4. Date opened	Mandatory	Folder level	User defined
	5. Date closed	Mandatory (optional at class Level)		User defined
	6. Date cut-off	Optional	Part level	According to business rules implemented at integration stage

Default value	-
Source	**Source Date.Created** is applied to an individual record automatically from an authoring application (e.g. email client, word processing application) and **Date.Acquired** from the email client (see email mapping in the *Reference document)* **Date.Opened** and **Date.Closed** are generated by an authorized user applying the current [server] date with the proviso that Functional requirement A.1.39 specifies the ability for an authorized user to have the option of altering **Date.Opened** on entering the first contents into the container
Schemes	UN standard date formats, other examples include: Max 10 characters for date in the format CCYY-MM-DD Max 6 characters for time in the format hh:mm:ss
Comments	[See also Disposal for disposal date elements] **Date.Declared** is one of the principal events in the life of an electronic record without which its integrity and record value is in doubt. It is the point at which the record came under the full records management control of the recordkeeping systems (*Functional requirements* A.2.13 & A.2.44. Declaration does this by fixing the content and most of the metadata for accountability, audit, admissibility and other purposes. It is not to be confused with creation of the document (**Date.Created**) in the document management environment (i.e. *prior* to its becoming subject to records management system control) **Date.Cut-off** is a specific event implemented as a business rule in some systems imposing a rigid end point on the aggregation that will be used to calculate effective retention activity from an external even if later content has been [mis]filed prior to formal closure of the file. This is a discipline used (*inter alia*) to ensure failure to close folder parts does not frustrate retention policies
Examples	-

7. Addressee

Definition	The person(s) to whom the record was addressed
Purpose	Identifying the person(s) the record was dispatched to
Rationale	Important contextual information to assist in the interpretation of the content of the record
Obligation	**Mandatory for email only**. Optional for other record types
Aggregation level	Record level
Use conditions	In the document management environment, document production functionality may provide available metadata on addressees / intended recipients that can be captured automatically on the point of declaration. This may well be implemented through workflows or templates that treat the addressee information in a highly structured manner
Repeatable	Yes
Sub-elements	-
Default value	-
Source	Email client for emails. Document management system/environment for other records
Schemes	-
Comments	Apart from emails, this is unlikely to be implemented in the absence of document management / workflow applications – except as a purely user defined field of information value only. See email mapping in *Reference document*
Examples	-

8. Type

Definition	The recognized form a record takes, which governs its internal structure and relates to its transactional purpose or to the action or activity it documents
Purpose	To provide additional information about the purpose and context of the record. To assist users in interpreting information contained in the record by identifying its internal structure
Rationale	This element may provide valuable additional information about the nature of the original action or transaction which is not evident from the elements: 2. TITLE, 3. SUBJECT, 4. DESCRIPTION.
Obligation	Optional
Aggregation level	Record, folder, item level
Use conditions	-
Repeatable	No
Sub-elements	-
Default value	None
Source	Organisationally defined and system generated
Schemes	-
Comments	Offices may apply to add other assigned values to meet their particular business requirements. Records types are often represented by templates in use within the office. Such templates could be linked to the system and, when called up by an creator, used as triggers which enable the element to be system assigned
Examples	Agenda, Guideline, Instruction, Letter, Minute, Memorandum, Email, Procedure, Policy, Report, etc.

9. Relation

Definition	Identifies instances where a record has a direct relationship with that of another (content or a direct business process relationship) or clarifies how a record at one level of aggregation relates to other levels			
Purpose	Establishing the relationship in metadata to make it explicit and available for automatic processing			
Rationale	Inheritance of rules and management of objects in multiple instances through the fileplan are inherent in the *Functional requirements.* The recordkeeping system needs the ability to manage disposal conflicts, redaction and assist in the management of queries on fileplan objects			
Obligation	Mandatory where establishing and maintaining the relations specified are implemented in the recordkeeping systems entirely within the records management environment. Looser relational links can be established using sub-element 7 [or other user defined fields]			
Aggregation level	As shown			
Use conditions	-			
Repeatable	Yes			
Sub-elements	**Name**	**Aggregation level**	**Obligation**	**Source**
	1. Copy / pointer	Any	Mandatory if present	ERMS
	2. Child object	Any	Mandatory	ERMS
	3.Parent object	Any	Mandatory	ERMS
	4. Redaction / extract	Record level	Mandatory if present	ERMS
	5. Reason for redaction / extract	Record level	Mandatory if present	User defined
	6. Rendition	Record level	Mandatory if present	ERMS
	7. 'see also' relational links	Folder and record levels	Optional	User defined
	8. Hybrid paper folder relational links	Folder level	Optional	User defined
Default value	None			
Source	See sub-elements			
Schemes	Recordkeeping systems will enforce either the valid fileplan			

	location or Fileplan ID (through the system ID) for pointer systems, renditions, redactions or parent/child relationships; other sub-elements are user defined
Comments	The strong interdependencies with **11. Aggregation** and the details of the entity relationship diagram in the *Reference document* should be noted as important to the understanding of the operation of this element
Examples	*Redacted version of record UID **R0067578x*** Prime fileplan location19 of this record = ***DTZ/004/047/001***(where pointer functionality implemented) * Extremely important to assist compliance litigation inquires by ensuring that all record instances are identified and managed

10. Function

Definition	United Nations business function(s) which are documented by the record		
Purpose	To document the relationship between records and the functions/activities they represent. To act as a resource discovery access point at a finer level of detail than that provided by the Element: Title		
Rationale	Documentation, through recordkeeping, of activities and transactions pertaining to the UN's core business functions will help maintain UN accountability for its actions. Some users may require searching capability at individual element level, rather than just by the title as a whole		
Obligation	Optional (but use of this element is strongly recommended		
Aggregation level	Applicable at all levels of aggregation		
Use conditions	This element should be used if a functions based thesaurus or disposal schedule is implemented		
Repeatable	Yes		
Sub-elements	**Name**	**Obligation**	**Scheme**
	10.1 Function Descriptor	Optional	Classification scheme
	10.2 Activity Descriptor	Optional	UN offices functions
	10.3 Third level descriptor	Optional	User defined
Default value	None		
Source	User defined		
Schemes			
Comments	Users should be able to search for records both by individual descriptors and by combining descriptors from the different levels. It is anticipated that this element will probably become mandatory in time, as UN offices move towards more functions based file titling thesauri and classification schemes.		
Examples	Peacekeeping Coordination – Current Operations – Situation Reports Mine Action Coordination – Fund Management - Contributions		

11. Aggregation

Definition	The unit of measurement used to define where in the information hierarchy any records management action is carried out	
Purpose	To clarify the extent to which actions can be carried out at different levels	
Rationale	Control of the level at which actions are permitted can be either for administrative convenience (such as taking advantage of inheritance principles to simplify fileplan administration) or to ensure robustness of records capture (association of records with others produced by similar or part of the same business process within a folder or class). This element serves both to denote the level at which a particular entity is being described (see entities in *Reference document*) and at the same time to act as a 'switch' affecting the metadata that will be applicable according to the value that is present for this element (see example in *Comments*). Both obligation levels and possible metadata are affected.	
Obligation	Mandatory	
Aggregation level	All levels	
Use conditions	-	
Repeatable	No	
Sub-elements	-	
Assigned values	**Entity name**	**Entity definition**
	Record	See *Guidelines*
	Marker (record)	"
	Part	"
	Marker (folder)	"
	Folder	"
	Class	"
Default value	None	
Source	Records or system administration role in accordance with organisational rules for the information object hierarchy	
Schemes	See **Assigned values** for the encoding scheme applicable to this element	
Comments	Depending on the value applicable for this element, application of many other metadata elements can be profoundly affected. See other element descriptions for details of this. For example, at folder level, this Standard specifies that the following mandatory metadata will be captured: **1.1 Identifier.System ID** **1.2 Identifier.Fileplan ID** **2. Title** **3. Subject**	

	6.4 Date.Opened **6.5 Date.Closed** **9. Relation** **11. Aggregation** **14. Security and access** **15. Disposal** At record level, the following values are mandatory. It will be observed that this is a quite different element set for the object at this lower level of aggregation: **1.1 Identifier.System ID** **2. Title** **3. Subject** **5. Creator** **6.1 Date.Created** **6.3 Date.Declared** **9. Relation** **11. Aggregation** **14. Security and access** **15. Disposal**
Examples	See *Comments* for examples of the effects and *Assigned values* for examples of the values for this element

12. Language

Definition	The language of the intellectual content of the record or resource
Purpose	Identifying the authoring language of a record for searching or other purposes [see also ***Comments***]
Rationale	[See ***Purpose***]
Obligation	Mandatory
Aggregation level	Record level
Use conditions	-
Repeatable	No
Sub-elements	None
Default value	English, French, Russian, Arabic, Chinese, Spanish
Source	User defined
Schemes	
Comments	Meets requirements for communication in the six official languages of the United Nations, and for recording the existence of incoming records in other languages
Examples	

13. Location

Definition	Physical location		
Purpose	Denoting the existence of physical format information resources only (plans, boxes, hard copy files, etc.)		
Rationale	Revealing the existence of physical or hybrid folders or metadata markers for individual records within the ERMS to support information retrieval in a hybrid media environment (e.g. legacy data or information not readily stored on ERMS) and enable the tracking of their location		
Obligation	Optional (probably needs to be Mandatory where the ERMS is the primary tool in use for the tracking of the location of records external to the ERMS but this is outside the Mandatory area of the *Functional requirements*)		
Aggregation level	Record and folder levels		
Use conditions	-		
Repeatable	No		
Sub-elements	**Name**	**Obligation**	**Scheme**
	1. Home location	Optional	Organisational
	2. Current location	Optional	Organisational
Default value	-		
Source	User defined		
Schemes	Implementation of geographic locations		
Comments	Not to be confused with **1.Identifier.SystemID, 1. Identifier.Fileplan ID** or the location of electronic media used to store electronic resources (e.g. file servers)		
Examples	FF Central File Room		

14. Security and access

Definition	Security classification restrictions and permissions placed on access to UN records held in ERK systems		
Purpose	To support protective security and the UN access and declassification regimes. To provide information required to support the decision making to assist in the administration of access and declassification requests from within and without the United Nations (Need for Security model in Guidelines)		
Rationale	Capture of protective security marking information in metadata allows a degree of automation in the protective handling of material in the electronic records. Protective markings in the electronic environment are capable of being applied (and consequently *should* be applied) with far greater precision than in the paper world. Managing this at the lowest level of granularity possible (normally record) is to be expected except in working environments where a very high proportion of the information being handled is sensitive. Protective security markings used to determine handling of information within UN offices do **not** determine access or declassification release decisions under ST/AI/326 THE UNITED NATIONS ARCHIVES, which have to be decided by the relevant offices/departments of creation/interest. Where the metadata elements are user defined and not linked to system functionality (for either capture or processing) they are designed to provide useful information to support the taking of decisions on disclosure of records.		
Obligation	Mandatory (protective security marking) Mandatory if applicable (protective security marking sub-elements – 2,3,7,& 8) Optional (other sub-elements)		
Aggregation level	All levels of aggregation, especially the folder and record level		
Use conditions	-		
Repeatable	Yes, where groups of values are repeatable in their groups		
Sub-elements	**Name**	**Obligation**	**Scheme**
	1. Protective security marking	Mandatory	Need for UN Manual of Protective Security to be developed
	2. Descriptor	Mandatory if present	" "

	3. Protective security marking expiry date	Optional	Organisational
	4. Custodian	Optional	Organisational
	5. Individual user access list	Optional	Organisational
	6. Group access list	Optional	Organisational
	7. Previous protective security marking	Optional	Organisational
	8. Protective Security marking change date	Optional	Organisational
	9. Disclosability to subject	Mandatory	Y/N
Default value	Unclassified		
Source	User defined		
Schemes	Need for UN manual of Protective Security. Other schemes will follow various business rules		
Comments	Pre-capture in record metadata of an applicable security classifications at creation and possibly at later stages is seen as a valuable tool in the protection of sensitive information in certain UN records.		
Examples	Protective security marker details: Strictly confidential Declassification release date: Declassified 01/12/2003 Declassification release details: Whole series S-0--- is declassified Access details: Access granted but copies cannot be made		

15. Disposal (see Annex 1)

Definition	What happens to the records at the end of their lifecycle (can also be referred to as a record's *sentence* or *retention*)		
Purpose	To facilitate the implementation of UN records disposal schedules		
Rationale	Retention and disposal management is a primary function in ERK systems.		
Obligation	Mandatory		
Aggregation level	Series, Accession, Class Folder, Record and Part levels		
Use conditions	-		
Repeatable	Yes		
Sub-elements	**Name**	**Obligation**	**Scheme**
	1. Disposal schedule ID	Mandatory	Organisational
	2. Disposal action	Mandatory	Retain, Destroy, Review
	3. Disposal time period	Mandatory	From schedules
	4. Disposal event	Mandatory if schedule is event driven	From schedules
	5. External event occurrence	Mandatory if present	From schedules
	6. Disposal (due / effective) date	Mandatory if known	UN standard date formats
	7. Disposal authorized by	Mandatory	UserID / position
	8. Disposal comment	Optional	User defined by ARMS
	9. Transfer destination	Mandatory if present	User defined by ARMS
	10. Transfer status	Optional	User defined by ARMS
	11. Review date	Optional	UN standard date formats
	12. Review comments	Optional	User defined by ARMS
	13. Date of last review	Optional	UN standard date formats
	14. Reviewer details	Optional	
	15. Review comments	Optional	
Default value	None		
Source	System generated		
Schemes	UNARMS policies, authorized general and specific records		

	disposal schedules.
Comments	Some disposal schedules in the electronic environment will comprise several disposal phases: the first often indicating when the information is taken offline and the last when it is finally disposed. These are quite distinct phases and there may be a number of intermediate stages. Offline information requires control and management as does online information. Back up strategies etc. must not frustrate official retention policies Sub-element **Disposal authorised by** (the user details) must be auto-captured in the record metadata when the disposal is activated (typically by the records manager role if a disposal in accordance with a retention schedule; the normal scenario).
Examples	(See sub-elements)

16. Format

Definition	The format of the record or what media the information is contained in
Purpose	To facilitate best practice management and preservation techniques for a specific record format. To ensure accessibility to information is maintained for as long as it is required though proper management of a particular format, especially in the case of audio visual, photographic and electronic records.
Rationale	Certain records formats or media require specific storage requirements or technological dependencies to ensure information contained in records is preserved and kept accessible for as long as required
Obligation	Mandatory
Aggregation level	Series, Accession, Record levels
Use conditions	-
Repeatable	Yes
Sub-elements	-
Default	None
Source	User defined
Schemes	Technical standards where they exist
Comments	This element will be invaluable for determining the best location, storage, preservation and technical requirements for particular formats of records. Some records such as photographic and audio visual may be transferred to areas in the UN e.g. the multi media and photographic libraries within DPI, who have the expertise to best manage certain record formats
Example	Photographic negative, VHS format, XML

17. Preservation

Definition	Information on the object description, migration, sustainability and preservation management processes that have been employed during the life of the record and its component(s), to facilitate its survival across technical platforms
Purpose	To support organisational migration activity, sustainability and archival preservation of the record and preserve aspects of the provenance of the record across transfer of custody between UN offices/departments and to UNARMS
Rationale	A variety of approaches may have to be taken to sustaining and preserving electronic records and their components across technical platforms. Information on the technical environment that produced the original objects/records greatly improves the chances of such approaches being achieved successfully and may make possible digital archaeological reconstruction where past management has been lacking (and costs are justified). Some of this information may need to be included in archival description or custody documentation [Further metadata requirements for sustainability of electronic records should emerge in the next 2 years as part of the program for the preservation of digital archives]
Obligation	Optional
Aggregation level	This element is envisaged to operate at the component level
Use conditions	-
Repeatable	Yes
Sub-elements	(See Element 16 Format)
Default value	None
Source	Information on high level management processes (migration policy etc) are expected to be User defined at administrator level Automatic capture of information describing the technical environment that produced the object will probably have to be captured as early as possible in the life of the record is advisable for records for long term sustainability or permanent preservation
Schemes	-
Comments	This element will be further developed once additional information is obtained from related projects such as the program for Digital Archives Preservation
Example	Thermox paper – requires copying on the acid free paper.

Annex 1: Metadata 'stub' required to record the pre-existence of disposed records

The minimum information that should be retained at Class, Folder and Part levels after they are disposed is as follows (see * note):

1.1 Identifier.SystemID

1.2 Identifier.FileplanID (of highest point at which disposal applies)

2. Title

6.4 Date.Opened (folder / class levels only)

6.5 Date.Closed (folder / class levels only)

14. 1 Disposal.Retention schedule identifier

14. 6 Disposal.Effective date

14. 7 Disposal.Authorized by (userID / role) – captured at the time of disposal

14. 8 Disposal.Comment (if applicable)

Apart from the last and penultimate value, this amounts to the retention of some of the preexisting values present in the record metadata and does not normally require additional system functionality other than:

- *excepting* these values from the deletion of the record; and
- allowing for the addition of a user defined comment (optional); and
- where a disposal has been effected at some other date than the date due under the operative schedule (i.e. it has been implemented ad hoc by the system administrator rather than merely authorized by the records manager) the date of disposal will require to be auto-captured at this point

* The relevant level depends on the level at which the disposal was implemented. For example, if an entire class is disposed, the stub should appear at the highest point of that particular class but be inherited downwards to all affected descendant aggregation levels as far down as folder level. If an individual folder is disposed, then it follows that the stub should be applied and retained at that point.

ANNEX 2: Additional information about this standard

Aggregation levels: at part, folder and fileplan level

Record metadata should be dependent (in part) on its relation to business process. If a folder or folder part contains the records of that business transaction, then there will be metadata elements in common that the constituents should share.

Creation or capture of a record and entering it into a container (i.e. 'filing' it into a folder) is equivalent to associating it with the corporate information structure (records classification scheme). It therefore follows that this operation should lead to the generation of some of the record metadata by carrying it through from the folder metadata. This effectively automates the application of those metadata elements, embedding them at the same time into the business processes that creates and captures the records. Providing the correct container is selected, the metadata will be consistently applied. The logic of this also applies higher up the fileplan structure, with folders inheriting relevant element values from their 'parent' objects.

Inheritance principle

ARMS requires that proper recordkeeping is implemented by associating individual records with others that form a part of the same transaction or theme (or related group of transactions) by entering into a point in a corporate information structure or fileplan. This has the advantage of supporting accountability, for example through judicial review of the process (and the information available at the time) by which a decision was reached. The folder level is the primary aggregation used to support this (see below). As explained in the *Functional Requirements*, many attributes of fileplan objects described in the metadata are populated by the principle and functionality of inheritance from the higher object to the lower. There are other important advantages to this, for example the ordered management of retention and disposal can be achieved by the assignment of a retention period based on the business need for the records and appearing in a retention schedule. It also permits a pragmatic approach to consistent metadata application.

The inheritance principle means that a substantial amount of metadata at any aggregation level is usually inherited from the level(s) above. It is important to distinguish in planning an implementation where these inherited values are either:

- part of the metadata of the inherit***ing*** object; or
- where they only subsist at the higher level of aggregation and will be used to trigger lifecycle events on the inheriting objects (**Metadata Element 15. Disposal.schedule identifier** is the obvious example) through the operation of the system.

Nearly all of the metadata is specifically required to be held in a tightly-bound relationship with the fileplan entities as indicated in the element descriptions, the exceptions being where subelements of **Metadata Element 14. Security and Access** and **15. Disposal** are inherited from a higher level in the fileplan in accordance with the

inheritance principle (see above) and may, in some solutions, only be held at that higher level. The exact technical solution in place will determine which is the case. This Standard, in conjunction with the ARMS *Functional requirements*, clarifies at what level metadata is to be applied to demonstrate this inheritance principle.

Note on preservation issues

This Standard indicates, for the first time, some metadata at the component level (i.e. a level below that of the individual record and consisting of the single physical object (i.e. the smallest level of granularity the system can handle – Word, Excel or PowerPoint file level). This is the first phase of extending guidance on metadata into the areas of sustainability and preservation of business records within UN offices. This Standard needs to be flexible to allow for these developments to follow.

The result of this is **Metadata Element 16. Preservation,** which is an element that is being forward at this stage to draw attention to an area that will be returned to during the near future as more information is gained from current disaster preparedness, vital records, digital archives and other initiatives being undertaken by or with the consultation of ARMS. It is expected that the definition of requirements and accompanying metadata for sustaining records in departments for periods of up to 70 years as well as permanent preservation in the United Nations Archives will lead to additions to the preservation element of the metadata framework. It is important that this *Standard* has the extensibility and flexibility to accommodate these. However, this does not form part of the metadata required for current records management using the present ARMS *Functional Requirements for Recordkeeping Systems*.

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