

Australian Standard[®]

AGLS Metadata Standard

Part 2: Usage guide



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AGLS Metadata Standard

Part 2: Usage guide

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PREFACE

This Standard was prepared by Standards Australia Committee IT-021, Records and Document Management Systems to supersede AS 5044.2—2002, *AGLS metadata element set*, Part 2: *Usage guide*.

This Standard incorporates Amendment No.1 (September 2011). The changes required by the Amendment are indicated in the text by a marginal bar and amendment number against the clause, note, table, figure or part thereof affected.

AS 5044 consists of the following parts:

AS

5044 AGLS Metadata Standard

5044.1 Part 1: Reference description

5044.2 Part 2: Usage guide (this Standard)

The information in this two-part Standard was originally adapted from the Australian Government Locator Service (AGLS) metadata standard prepared by the AGLS Working Group for use in government agencies.

The National Archives of Australia made the AGLS metadata element set available on its website in 1998. The members of Committee IT-021, Records and Document Management Systems decided to expand it to cover non-government sectors and invited the AGLS Working Group to become a subcommittee of IT-021. Standards Australia published the Standard in 2002 and renamed it 'AGLS Metadata Element Set'. Omitting the word 'government' from the title reflected that, with this version of the Standard, the audience was no longer limited to the public sector.

This revision is renamed 'AGLS Metadata Standard'. This takes into account changes introduced by the Dublin Core Metadata Initiative (DCMI) in January 2008 in support of automated processes for identifying and interpreting the meanings implied in natural language (known as 'semantic inferencing').

This AGLS Metadata Standard provides a set of metadata properties and associated usage guidelines to improve the visibility, manageability and interoperability of online information and services.

The major changes to the 2002 edition are—

- (a) revising terminology, property descriptions and recommended formatting to remain consistent with the Dublin Core Metadata Initiative (DCMI);
- (b) assigning free standing descriptive labels to metadata terms;
- (c) a clear distinction between Vocabulary Encoding Schemes and Syntax Encoding Schemes;
- (d) including a DCMI property not previously in the AGLS standard (conformsTo);
- (e) including four new DCMI properties (accessRights, dateCopyrighted, rightsHolder and license);
- (f) introducing two new AGLS properties (dateLicensed and protectiveMarking);
- (g) introducing three additional sets of terms (Agent Metadata Terms, Availability Metadata Terms and Administrative Metadata Terms);
- (h) deprecation of one element refinement from the previous standard (DC.coverage.postcode);
- (i) changes to the obligation status of some properties;

- (j) including a new obligation status ‘Recommended’;
- (k) updating references to the most recent versions of Request for Comment (RFC) standards and ISO standards;
- (l) examples in eXtensible Hypertext Markup Language (XHTML); and
- (m) expanding the AGLS Audience Vocabulary Encoding Scheme.

This Standard uses the term ‘informative’ to define the application of the Appendix to which it applies. An ‘informative’ Appendix is only for information and guidance.

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FOREWORD

Development History

The AGLS Metadata Standard (formerly known as the Australian Government Locator Service) had its origins in the work of the Information Management Steering Committee (IMSC), an interdepartmental committee established by the then Commonwealth Office of Government Information Technology (OGIT). The then Chief Government Information Officer, Andy McDonald, established the IMSC in 1996. Chaired by the then Deputy Director-General of the National Library, Eric Wainwright, the Committee released its report, *The Management of Government Information as a National Strategic Resource*, in August 1997. This report proposed frameworks for government information policy and the deployment of associated technology into the 21st century.

Development of the AGLS element set began in December 1997 with an invitational workshop held at the National Archives of Australia. The workshop brought together representatives of federal and state/territory government agencies, other interested parties such as the Federal Libraries Information Network, and the academic research community. The development objective was to produce a set of metadata elements which would improve the visibility, availability and interoperability of government information and services through the provision of standardised Web-based resource descriptions which enable users to locate the information or service that they require.

From 1998 the use of AGLS spread beyond the public sector for which the standard was originally developed. The use of AGLS by various cross-sectoral web portal initiatives accelerated this process. In recognition of the wide potential adoption of AGLS within Australia, Standards Australia decided to adapt and issue AGLS as an Australian Standard. Standards Australia first issued the Standard in 2002, incorporating a set of 19 elements.

The current version of the Standard takes into account changes introduced by the Dublin Core Metadata Initiative (DCMI) in January 2008.

Today the development objective of the AGLS Working Group is to maintain a set of metadata properties to improve the visibility, availability and interoperability of information and services through the provision of standardised resource descriptions which enable users to locate the information or service that they require.

Relationship to Dublin Core

AGLS is an application profile of Dublin Core metadata standard (<http://dublincore.org/>). The International Organization for Standardization issued the Dublin Core Metadata Element Set (DCMES) as ISO 15836:2003. The American National Standards Institute issued the DCMES as ANSI/NISO Z39.85:2007.

AGLS is a more complex set of properties than the Dublin Core standard, containing sub-properties enabling it to describe more categories of resources and allow richer description of resources. AGLS is entirely compatible and interoperable with Dublin Core. AGLS does not displace any other metadata standard. AGLS can coexist with other metadata standards based on different semantics.

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STANDARDS AUSTRALIA

Australian Standard
AGLS Metadata Standard

Part 2: Usage guide

SECTION 1 SCOPE AND INTRODUCTION**1.1 SCOPE**

This Standard is an entry point for those wishing to implement the AGLS Metadata Standard for the online description of online or offline resources. It provides details on the use of AGLS metadata and how to assign metadata to resources. This makes resources easier to locate on the Internet. This Standard explains how to use AGLS metadata properties to describe resources at an abstract level to make them easier to locate. It includes examples of the use of each property. This Standard also includes information about certain business issues that need to be resolved when making a decision to implement AGLS metadata. Although examples are given, this Standard does not prescribe an encoding method.

This Standard is for use with AS 5044.1, which explains the semantics of the AGLS properties, and should not be used without reference to that document.

1.2 REFERENCED DOCUMENTS

The following documents are referenced in this Standard:

AS

5044 AGLS Metadata Standard

5044.1 Part 1: Reference description

AS ISO

15489 Records management

AS/NZS ISO

19115 Geographic information—Metadata

ISO

639 Codes for the representation of names of languages

639-1 Part 1: Alpha-2 code

639-3 Part 3: Alpha-3 code for comprehension coverage of languages

3166 Codes for the representation of names of countries and their subdivisions

8601 Data elements and interchange formats—Information interchange—Representation of dates and times

15836 Information and documentation—The Dublin Core metadata element set

15924 Information and documentation—Codes for the representation of names of scripts

ANSI/NISO

Z39.85 The Dublin Core Metadata Element Set. ANSI/NISO 2007

RFC

2082 RIP-2 MP5 Authentication, January 2007

2368 The mailto URL Scheme, July 1998

RFC	
2426	vCard MIME Directory Profile, September 1998
2806	URL for Telephone Calls, Internet RFC 2806, April 2000
3986	Uniform Resource Identifier (URI): Generic Syntax
4646	Tags for Identification Languages, Internet RFC 4646, September 2006
5321	Simple Mail Transfer Protocol, Internet RFC 5321, October 2008

1.3 DEFINITIONS AND TERMINOLOGY

The definitions of AS 5044.1 apply. For comparison of terminology used previously and that used in the revised DCMI Abstract Model, see AS 5044.1.

1.4 WHAT IS METADATA?

Metadata is a term for something that has been around for as long as humans have been writing. The basic definition is ‘data about data’. It is the Internet-age term for information that librarians traditionally have put into catalogues and archivists into archival control systems. The term ‘meta’ comes from a Greek word that denotes ‘alongside, with, after, next’. Metadata is structured data about other data. Although there are many varied uses for metadata, the term refers to descriptive information about resources, generally called ‘resource discovery metadata’.

Resource discovery metadata is information in a structured format describing a resource or a collection of resources. A metadata record consists of a set of properties describing a resource. A metadata record typically includes, but is not limited to—

- (a) basic identification information such as title, author, version, reference dates;
- (b) the size or extent of the resource;
- (c) an abstract, description or summary of the content;
- (d) the possible use of the content;
- (e) the intended audience;
- (f) legal information about the ownership or rights held over the resource; and
- (g) how to access the resource and any access restrictions.

1.5 WHY CREATE METADATA?

Metadata provides a way of allowing a non-specialist user to discover, evaluate and use information. Searching for keywords or phrases in the content of a resource is problematic, particularly when using common words as a search term. For some resources, such as a video, audio recording or a resource that is not available online, it is not possible to search for keywords in the content.

Metadata allows a user to search for keywords, names and phrases in a structured context of well defined properties such as title, topic, purpose and the intended audience of the resource. This helps users discover resources and evaluate whether a resource is suitable for their needs. If the user decides that the resource is suitable, the metadata then tells the user where or how it can be obtained (either online or offline).

Although the concept of metadata predates the Internet, worldwide interest in metadata standards and practices has burgeoned with the increase in electronic publishing and the proliferation of individual and organizational websites, and the resulting ‘information overload’ from vast quantities of information available online. Anyone who has attempted to find information online using one of today’s popular search services has probably

experienced the frustration of retrieving hundreds, if not thousands, of ‘hits’ with limited ability to refine or make a more precise search. The wide-scale adoption of descriptive standards and practices for electronic resources will improve retrieval of relevant resources from the so-called ‘Internet commons’. Weibel and Lagoze*, two leaders in the field of metadata development, note that—

The association of standardized descriptive metadata with networked objects has the potential for substantially improving resource discovery capabilities by enabling field-based (e.g., author, title) searches, permitting indexing of non-textual objects, and allowing access to the surrogate content that is distinct from access to the content of the resource itself.

The most well known resource discovery metadata standard is the Dublin Core Metadata Element Set (DCMES).

1.6 WHAT IS AGLS?

The AGLS Metadata Standard is an application profile (a set of metadata properties, policies and guidelines defined for a particular application or implementation) of Dublin Core metadata. Dublin Core metadata aims to facilitate description of a wide range of networked resources. The DCMES used a minimal set of properties, the semantics (meanings) of which were established through consensus by an international, cross-disciplinary group of professionals from librarianship, archives, computer science, text encoding, the museum community, and other related fields of scholarship.

Dublin Core has as its goals the following characteristics:

- (a) Simplicity of creation and maintenance.
- (b) Commonly understood semantics.
- (c) International scope.
- (d) Extensibility.

The DCMI website (<http://dublincore.org/>) documents the original 15 descriptors of the DCMES and the more recent set of DCMI Metadata Terms. The International Organization for Standardization issued the DCMES as ISO 15836:2003 and American National Standards Institute issued it as ANSI/NISO Z39.85:2007. The original AGLS Metadata Element Set consisted of 19 elements: the original 15 Dublin Core elements and four additional elements designed for the Australian context.

The properties in the sets of DCMI and AGLS Metadata Terms form the current AGLS Metadata Standard. AGLS can be used for describing both online (i.e. web pages or other networked resources) and offline resources (e.g. books, museum objects, paintings, paper files, etc). AGLS is intended to describe more than information resources—it is also designed to describe services and organizations.

1.7 WHY USE AGLS METADATA?

With so many resources available within an organization, across the nation or across the world, metadata allows us to describe these resources in simple and small packages of information. Making metadata available to more users is easier than making the resources themselves available. If a resource is worth making available then it is worth describing it with metadata to maximise the ability of users to locate it online and to capture the greatest business value from the resource.

* Weibel, S. L., and Lagoze, C. (1997). An element set to support resource discovery. *International Journal on Digital Libraries*, 1.

The aim of the AGLS Metadata Standard is to ensure that users searching the Australian information space on the World Wide Web (including intranets and extranets) have fast and efficient access to descriptions of many different resources. AGLS metadata should enable users to locate the resources they need without having to possess a detailed knowledge of where the resources are located or who is responsible for them.

Using standardised descriptions also enables metadata-enabled search engines, particularly search facilities embedded into websites, to do their job more efficiently. This in turn helps users by presenting relevant and meaningful ‘hits’ in response to search requests.

Increasingly, the World Wide Web is becoming the preferred means of delivering information and services. There is little point investing money and effort in publishing information or delivering a service over the web if the intended audience cannot locate it. The use of standardized metadata schemas such as AGLS, in conjunction with a suitable metadata-enabled search engine, will help users find the resources they require.

A small amount of additional investment in the creation and maintenance of AGLS metadata can significantly increase the return on the initial web publishing investment by improving the management of websites (aligning the business and IT processes driving the creation and provision of resources) as well as improving discoverability of resources to users. With the magnitude of resources available on the Internet, metadata is a unique mechanism that provides a higher quality service for discovery of these resources. AGLS metadata will play an important role in publishing resources—via the Internet—to virtually anyone in the world.

AGLS metadata can also improve resource discovery on intranets and extranets, saving time for staff and partner organizations.

1.8 EXTENDING THE AGLS METADATA STANDARD

AGLS is extensible, so those users with different or more specific metadata needs may add extra properties and encoding schemes to AGLS to meet their own requirements. When developing a new metadata set based on AGLS, it is important to remember that the new set must be compliant with AGLS to the extent that creating metadata for an extension metadata set also creates AGLS metadata. Applying the following principles can meet this aim:

- (a) Any existing AGLS properties used in a new metadata set must retain the same semantics as those defined in this Standard.
- (b) Mandatory properties in AGLS must remain mandatory in the new set.
- (c) The semantics of any properties added in the new metadata set must be consistent with the semantics of existing properties, including any with sub-property relations to existing properties.

In addition, extensions should use—

- (i) Vocabulary Encoding Schemes for any new properties whose content is to be drawn from a controlled list of values; and/or
- (ii) Syntax Encoding Schemes for new properties following a formal notation.

As the AGLS Maintenance Agency, the National Archives of Australia is interested in other metadata sets based on AGLS, and their degree of compatibility with AGLS. If an organization has developed or is about to develop a metadata standard based on AGLS, the National Archives would be very interested to receive information about the new standard in order to monitor compatibility and for possible inclusion as an example in future versions of this Standard. Contact the AGLS Maintenance Agency (see section 9) with details about the standard and the semantics of the properties.

1.9 COMPATIBILITY ISSUES AND THE ‘DUMB-DOWN RULE’

As an application profile of the Dublin Core standard, it is important for AGLS to remain compatible and consistent with DC. This is done by making changes to the AGLS Metadata Standard that reflect changes to the Dublin Core standard. As metadata standards evolve over time, it is essential to allow for legacy applications. A guiding principle established by the DCMI to ensure compatibility is the so-called ‘dumb-down rule’. This rule states that a property (element) value must be meaningful when no sub-properties or encoding schemes (qualifiers) are present.

For example, a value for the spatial property must be meaningful when the property is in the legacy form DC.coverage. Similarly in AGLS, the value for the act property must make sense when the element is in the legacy form AGLS.mandate. Likewise, the value of a property must be meaningful when no vocabulary encoding scheme is specified. For example, a value for documentType must make sense whether or not the AGLS Document Vocabulary Encoding Scheme is specified.

More detailed information about application of the ‘dumb-down rule’ is on the DCMI website (<http://dublincore.org/documents/usageguide/>). More information about metadata evolution and legacy applications is in Clause 4.4.

1.10 AGLS AND OTHER AUSTRALIAN METADATA INITIATIVES

AGLS is only one of several resource discovery metadata initiatives in Australia. Most of the other initiatives are based on either DC or AGLS. One exception is the ANZLIC Metadata Standard for describing spatial data sets. The ANZLIC standard is similar to other international geographic metadata standards and conforms to AS/NZS ISO 19115-2005. More information about the ANZLIC Metadata Standard is on the ANZLIC website (<http://www.anzlic.org.au/metadata/>).

There are other significant Australian resource discovery metadata standards based on AGLS or DC. Usually, metadata that conforms to one of these metadata standards will also comply with the AGLS standard. More information can be obtained from the following URLs:

- (a) Education Network Australia (EdNA), a metadata standard based on DC for describing education resources.
(<http://www.edna.edu.au/edna/go/resources/metadata/>)
- (b) HealthInsite, a metadata standard based on AGLS, developed by the Commonwealth Department of Health and Ageing for describing resources related to all aspects of health. (<http://www.healthinsite.gov.au/metadata.cfm>)

1.11 AGLS AND OTHER INTERNATIONAL METADATA INITIATIVES

There are significant international resource discovery metadata standards based on DC. Usually, metadata that conforms to one of these other metadata standards will also comply with the AGLS standard. A non-exhaustive list of examples is

- (a) The Open Archives Initiative (OAI) develops and promotes interoperability standards to improve access to digital resources for eScholarship, eLearning, and eScience. The OAI Protocol for Metadata Harvesting is compatible with DC.
(<http://www.openarchives.org/>)
- (b) The Open Language Archives Community (OLAC) is an international partnership of institutions and individuals who are creating a worldwide virtual library of language resources. The OLAC Metadata Standard is compatible with DC.
(<http://www.language-archives.org/>)

- (c) Open Digital Rights Language (ODRL) is an open standard for rights expressions in digital publishing. An ODRL rights statement may be included in an XML metadata record. (<http://odrl.net/>)
- (d) AS/NZS ISO 19115:2005, *Geographic information—Metadata* defines the model required for describing geographic information resources. It provides information about the identification, quality, spatial and temporal extent, spatial reference and distribution of geographic resources. Though AS/NZS ISO 19115 is suitable for digital geographic resources it can also be used for non-digital geographic and non-geographic resources.

SECTION 2 IMPLEMENTING AGLS

2.1 WHICH RESOURCES TO DESCRIBE WITH AGLS METADATA

Organizations need to consider who their clients are or what market they are filling. This will help decide which resources to describe with AGLS metadata. Organizations can describe resources individually or at an aggregate (collection) level.

An organization needs to decide which of its resources requires AGLS metadata. This can be a staged process. It is not necessary to describe every resource. For example, an organization may decide initially to apply AGLS metadata to all the information resources on its public website, then progressively to other resources (e.g. services), first at the collection level then at an individual level. This may be extended to resources on intranets and extranets for staff and partner organizations. Ultimately, which resources you describe depends on the purpose of the resources.

Resources can be documents on web servers, client services which may be provided online or offline, collections of videos, an organization itself, or people. There is no real limit to what can be described using AGLS metadata. AGLS metadata helps users locate resources (services or information they require) either by linking to the resource (e.g. a web address) or by providing contact information (e.g. the street address, phone number or details) for a particular resource.

A good rule to follow is ‘If it’s worth publishing online, it’s worth AGLS metadata’. Embedding the AGLS metadata approach into a publishing quality process may also prove a useful management and authoring practice. If information is relevant to clients, it is likely to be subject to a publishing quality process. This Standard complements and extends that process.

2.2 CREATING AGLS METADATA

Primarily, the creator or publisher of a resource will create the metadata that describes it. Software tools that automatically extract or create some of the metadata can aid this process. Third parties may ‘add value’ to the AGLS metadata over time.

In some cases, an organization may use the services of information management professionals or intermediaries to help apply AGLS metadata to resources.

2.3 UPDATING METADATA

Not all AGLS metadata properties are mandatory. An organization can add to or update its AGLS metadata at any time, so there is no need to capture all details at once. AGLS metadata is dynamic and flexible, so it can easily cater for changes and additions over time.

2.4 BENEFITS AND COSTS

With proper AGLS metadata, an organization’s clients will be able to find information and services offered by the organization more easily. Effort must be put into creating such metadata for an organization’s resources.

Adoption of the AGLS Metadata Standard will provide long-term benefits for an organization. There is a serious, but not overwhelming, commitment needed to support AGLS metadata. The initial effort may be high, but over time the benefits are worthwhile.

Business case analyses for adopting metadata have shown many significant benefits, including—

- (a) providing clients with a seamless method for accessing resources;

- (b) enabling clients to locate resources without needing a detailed knowledge of organizational structures;
- (c) helping staff to locate resources on intranets, especially when providing call centre or shop front services to clients;
- (d) helping partner organizations locate resources on restricted extranets;
- (e) where necessary, providing extensive information about a resource without allowing access to the resource itself;
- (f) providing a consistent, national approach to resource access;
- (g) ensuring high-quality information and services are comprehensively available;
- (h) providing consistent information management procedures;
- (i) providing a rich and competitive environment for dissemination of resources of all types; and
- (j) providing a means of ranking results so that those most relevant to the client are displayed first.

2.5 RETROFITTING AGLS METADATA

It is most cost-effective to create metadata as early as possible in the life of a resource—ideally when the resource is created or published.

An organization needs to decide whether to describe existing (legacy) resources with AGLS metadata or update legacy applications of AGLS metadata created to earlier standards. This is a business decision that requires careful consideration of the benefits over the costs.

2.6 HOW MUCH TO DESCRIBE

An organization must consider its clients' needs. At what level do they want to find resources? Do they need individual documents or collections of documents? An analysis of clients' demands and expectations is important in determining the level of detail you apply with AGLS metadata.

2.7 HOW TO PRIORITIZE AGLS METADATA

How important is it that clients get access to resources? How quickly do they need it? Answering these questions will determine how to prioritize creation and dissemination of AGLS metadata.

2.8 THESAURUS TERMS

A thesaurus is a type of controlled vocabulary which has many benefits for information description and discovery. Use of a thesaurus is very important for applying consistent AGLS metadata. It is strongly recommended that, if a relevant thesaurus exists within an organization, it be used for the appropriate properties; otherwise consider establishing a thesaurus that meets a community's needs, or using an existing thesaurus compiled by another organization.

Using controlled language sets ensures consistent descriptive terminology and aids efficient and high-quality information retrieval. Correct application of thesaurus terms to describe resources will enable end-users to discover those resources. A properly constructed resource description thesaurus acts as a common language between the organization and the community, especially when integrating thesaurus terms with the search facility via pick lists or by automatic redirection of non-preferred search terms.

There are both subject thesauruses and functional thesauruses. A descriptor from a subject thesaurus describes the intellectual content of a resource. There are many subject

thesauruses already available for organization use. A functional thesaurus captures the role of the resource, that is, to which business activity the resource relates. Organizations are encouraged to develop their own functional thesauruses based on an analysis of their business processes. These thesauruses will be useful for both recordkeeping classification and online resource description.

2.9 ADMINISTRATIVE METADATA

In some cases, organizations may also benefit from capturing information, called administrative metadata, that indicates when the AGLS metadata was created or updated and who was responsible. An organization may have extra administrative metadata properties specific to an area of work or community needs.

Other extensions to AGLS metadata are permissible and easily supported. If an organization has a need for more specific metadata, then extending AGLS is the preferred mechanism (see Clause 1.8).

2.10 AGLS METADATA DEPLOYMENT: CHECKLIST

2.10.1 General

Currently, the most common mechanism to deploy AGLS metadata is embedding the metadata record in the <head> section of the HTML/XHTML code for the web resource. Alternative mechanisms such as metadata repositories and separate metadata files can be used (see Clause 3.5.4). An organization can use any of the tools listed in clause 3.6 to generate the <meta> tags associated with a resource. The <meta> tags would then need to be inserted into the document, or the separate metadata files created and placed on the web server. With one of these mechanisms in place, metadata enabled search engines will locate the AGLS metadata and enter it into a repository. If an organization wishes its resource(s) to be discovered and accessible by specific community audiences (e.g. business, health, education), it is important that the metadata also conform to the metadata standards (which are based on AGLS) of these sector-specific groups.

2.10.2 Manual metadata

Below is a checklist for embedding manual AGLS metadata, encoded in HTML/XHTML <meta> tags, into web documents.

STEP 1—Select a metadata creation tool that best meets your needs. Familiarize yourself with this tool. (See the list referred to in Clause 3.6.)

STEP 2—Using the tool, enter the mandatory and any conditional AGLS metadata properties about the resource. This will provide the minimum information required. (See the AGLS metadata summary in Appendix A.)

STEP 3—Using the tools, enter any recommended and optional AGLS metadata properties about the resource based on the business purpose of the resource and the requirements of the clients. While many properties are optional, there are occasions when the more information you provide the most useful the description will be.

STEP 4—Using the tool, export the AGLS metadata into the <meta> tag format.

STEP 5—Using your preferred editor or word processor, open the HTML/XHTML document and insert the <meta> tag text at the beginning of the document. This is usually right after the <head> tag.

STEP 6—Validate the document using a validation tool such as Xerces or Saxon.

STEP 7—Submit the HTML/XHTML document to the web server.

STEP 8—Ensure that search engines can harvest and process the metadata.

2.10.3 Metadata using a metadata registry

Below is a checklist for creating AGLS metadata through a shared metadata database or registry. This approach can be useful in the context of a portal linking to resources provided by others, linking data to metadata and vice versa. The database or registry system needs to be configured to accept AGLS metadata and users will need tools that will create valid metadata records. A metadata registry can be implemented as part of an enterprise architecture system.

STEP 1—Familiarize yourself with the metadata management tools in the repository or database.

STEP 2—Using the tool, enter the values of mandatory and any conditional AGLS metadata properties about the resource. This will provide the minimum information required. (See the AGLS metadata summary in Appendix A.)

STEP 3—Using the tool, enter any recommended and optional AGLS metadata properties about the resource based on the business purpose of the resource and the requirements of the clients. While many properties are optional, there are occasions when the more information you provide the more useful the description will be.

STEP 4—Submit the metadata for inclusion in the repository or database according to your usual submission procedures

STEP 5—Ensure that access is provided to the AGLS metadata records to relevant users and systems.

STEP 6—Ensure that search engines or shared databases/registries can harvest and process the metadata.

2.10.4 Metadata using a resource management or enterprise architecture system

Below is a checklist for creating AGLS metadata through a resource management or enterprise architecture system. The resource management system needs to be configured to accept AGLS metadata and resource creators/providers will need tools that will create valid metadata records. When implementing a resource management system, content management system or enterprise architecture, support for AGLS metadata should be included in the design stage.

STEP 1—Familiarize yourself with the metadata management tools in the resource management system.

STEP 2—Using the tool, enter the values of mandatory and any conditional AGLS metadata properties about the resource. This will provide the minimum information required. (See the AGLS metadata summary in Appendix A.)

STEP 3—Using the tool, enter any recommended and optional AGLS metadata properties about the resource based on the nature and business purpose of the resource and the requirements of the clients. While many properties are optional, there are occasions when the more information you provide the better the description will be.

STEP 4—Submit the document for publication according to your usual publication procedures.

STEP 5—Ensure that search engines can harvest and process the metadata.

SECTION 3 AGLS METADATA TECHNICAL ISSUES

3.1 TECHNOLOGY OPTIONS

There are several technology options for creating, storing and accessing AGLS metadata. These will evolve over time as new products and services become available and as new features are added. This Section details some of the current options for creating and managing AGLS metadata. This area is rapidly changing as the marketplace articulates organizational metadata needs.

Deploying metadata within an enterprise architecture framework should be an integrated part of such a project. Management of metadata within an enterprise architecture framework will assist in the internal management of network-retrievable resources as well as improving resource discovery.

3.2 CREATING AND STORING METADATA

The linkage between a metadata record and the resource(s) it describes may take one of two forms:—

- (a) Properties may be contained in a record separate from the item (e.g. a library catalogue); or
- (b) The metadata may be embedded in the resource itself (e.g. Cataloguing In Publication (CIP) data printed on the verso of a book's title page).

Many metadata standards, including the Dublin Core standard, do not prescribe either type of linkage, leaving the decision to each particular implementation.

Ideally, metadata should be created using a purpose-built tool, so metadata creators need not be concerned with the syntax. Metadata creation tools can be—

- (i) part of a resource creation system, such as a word processor;
- (ii) part of a resource management system, such as an electronic record keeping system, a web-based registration system (e.g. Business Entry Point), or a content management system; or
- (iii) stand-alone tools.

Metadata can be stored in two main ways:

- (A) In a database or registry separately from the resource; or
- (B) Embedded within the resource being described.

A database or registry storing metadata can be implemented using many technologies. It may be a relational database management system or just a file system containing metadata records. Specific business needs and resource types will determine metadata storage choices.

Some resources can contain their own metadata. For example, it is possible to embed metadata within web pages using the HyperText Markup Language (HTML) and eXtensible HyperText Markup Language (XHTML) <meta> tag. It is also possible to encode metadata in XML (eXtensible Markup Language) and RDF (Resource Description Framework) syntax.

3.3 COLLECTION-LEVEL DESCRIPTION

In the case of a collection-level AGLS metadata record, it is essential to provide a full description of the set of resources in the collection, as this metadata record would cover multiple resources. To help users find items within collections which might be relevant to their enquiry, the modified property should be updated to reflect changes to items contained in the collection. For example, the modified property should be updated when existing items are modified or when new items are added to the collection level resource. This is especially necessary when describing collections of electronic resources not individually described by their own metadata.

Organizations might choose to create collection-level AGLS records linked to high-level entry pages on their website. This would be an appropriate strategy when taking a business decision not to create metadata for every item on the website. It is important that the collection-level AGLS records describe all the resources in the collection, not just the high-level entry page.

3.4 DESCRIBING SERVICES USING AGLS METADATA

Services offered to the public are resources, as are any other online or offline information sources. Services are, however, a much more active resource than documents containing information. For resource discovery purposes, resource description needs a different approach when the described resource is a service.

The *AGLS Metadata Standard: Australian Government Implementation Manual* explains in detail how to use the AGLS Metadata Standard for describing services. Although this manual was developed for government agencies, the principles set out in the document may be used as the basis for describing services offered by non-government organizations. The Manual defines a service in this way:

‘a service exists where a relationship is established between a business function of a government agency and a person’s identified needs. Examples of government services are providing family allowance assistance and delivering water supply.’

3.5 METADATA ACCESS STANDARDS

3.5.1 General

Metadata must be accessible in a standard way so that search engines can easily find the resource descriptions and provide this information to the user. There are three main mechanisms for accessing metadata. Each has advantages and disadvantages. The information systems used by an organization or that harvest an organization’s metadata reflect these capabilities.

3.5.2 Embedded metadata

This mechanism uses current technologies supported by the web and HTML/XHTML. Metadata records are included within HTML/XHTML files using the <meta> tag. If the resource being described is itself an HTML/XHTML file, the metadata becomes an integral part of the resource being described and is written to conform to the syntax of the HTML/XHTML version being used.

However, one drawback of this mechanism is that non-HTML/XHTML resources (e.g. offline resources and services) must have HTML/XHTML descriptions if they are to be described using metadata. This requires creation of ‘front-end’ HTML/XHTML pages to contain metadata for such things as PDF documents, Microsoft Word documents or image files. This is one of the simplest methods of creating resource discovery metadata. However a potential drawback is that, when parts of the metadata change, for instance following administrative change, some of the metadata embedded in each HTML/XHTML file will need to be updated or changed.

Metadata can be embedded in Portable Document Format (PDF) files and graphics formats such as JPEG, JPEG 2000, GIF, PNG, HTML, TIFF, Adobe Illustrator, PSD and PostScript using the Extensible Metadata Platform (XMP). XMP metadata can describe a file as a whole but can also describe parts of a file such as individual pages or embedded images. It also permits documents to be created from components and retain the original metadata associated with the components.

XML and the Resource Description Framework (RDF) encodings of AGLS metadata will allow more structure within embedded AGLS metadata records.

3.5.3 Stand-alone metadata

It is possible to create separate metadata records using XML and RDF. These can be linked from individual pages or collection level pages. Where it is not possible to provide a direct link from a resource (e.g. PDF, Word or image files) to its associated metadata, a link to the metadata file can be provided from an index or collection level page linking to those resources.

3.5.4 Metadata repositories

This mechanism involves using databases to store and manage metadata descriptions. Metadata databases, also called metadata repositories, are queried for metadata records using standard information retrieval protocols.

The method of storing metadata in a database provides more flexibility, as there are no static records. The metadata can be made available in various arrangements or syntaxes that can easily be modified over time. An added advantage of storing AGLS metadata in a database is the ease with which global changes and amendments can be made after initial creation. On the other hand, setting up the metadata repository in the first place is more difficult than simply embedding metadata in HTML pages, and does have implications for retrieval of the metadata by search engines.

Initially, metadata records from databases should support their native syntaxes, but move towards standards such as XML and RDF over time.

3.5.5 Resource management systems

This mechanism involves exploiting an organization's resource management system. These systems provide significant amounts of metadata describing resources (e.g. databases, documents and records) and services. The metadata managed by resource management systems is often sophisticated and may support recordkeeping activities, resource management and resource archiving as well as resource discovery. However, such metadata can often be translated to the standards required by a resource discovery system. Examples of resource management systems include recordkeeping systems, electronic document management systems, web content management systems, records management systems and collection management systems.

Some resource management systems can provide automatic facilities to support—

- (a) export of selected metadata records into either of the mechanisms above; and/or
- (b) public access to selected records within the resource management system.

If an organization has a resource management system, this mechanism may not require significant new investment and could help consolidate metadata management. The National Archives of Australia has published a recordkeeping metadata standard which designers and developers of recordkeeping and other resource management systems can use to meet organization recordkeeping metadata needs. The standard is an extension of the AGLS Metadata Standard. Systems that create and capture metadata described by the recordkeeping metadata standard can create AGLS metadata for export to a web environment as needed.

Where selected resources in a management system are made available to the public, care must be taken to maintain access restrictions when exporting resources or providing direct access. Use the `accessRights` property in all cases where there are restrictions on access or use.

3.6 AGLS METADATA TOOLS

Tools or systems are available for creating and managing general metadata. In addition, it is expected that systems will be developed that specifically support AGLS in free and commercial products.

A list of general metadata tools is available at <http://metadata.net/tools.html> and <http://dublincore.org/tools/>

There are a range of eXtensible Metadata Platform (XMP) tools for embedding metadata in PDF documents and image files.

Most, if not all currently available database products can be configured to accept AGLS metadata properties. However they should be properly configured to generate metadata conforming to the current Standard.

SECTION 4 USING THE AGLS METADATA PROPERTIES

4.1 OBLIGATION

4.1.1 Obligation categories

The AGLS Metadata Standard consists of properties based on the Dublin Core standard. AGLS metadata properties fall into four obligation categories:

- (a) **Mandatory**—these properties must be present in all metadata records.
- (b) **Conditional**—these properties must be present under certain circumstances.
- (c) **Recommended**—there may be valid reasons in particular circumstances not to include these properties, but the full implications must be understood and carefully weighed.
- (d) **Optional**—these properties are truly optional.

Implementations that use recommended or optional properties must be fully interoperable with those that do not.

4.1.2 Mandatory properties

Three AGLS properties must be present in a metadata record for compliance with this Standard. The mandatory properties are:

- (a) **Creator.**
- (b) **Title.**
- (c) **Date (or a related property).**

In the case of date, this Standard specifies that the date property or at least one of the related available, created, dateCopyrighted, dateLicensed, issued, modified or valid properties must appear in a metadata description to be a valid instance of date.

4.1.3 Conditional properties

Three AGLS properties are conditional and must be present under certain circumstances. The Conditional properties are:

- (a) **Availability (mandatory for offline resources).**
- (b) **Identifier (mandatory for online resources).**
- (c) **Publisher (mandatory for information resources).**

In the case of identifier and availability, at least one of those two properties must appear in a metadata description depending on the nature of the resource. If the resource is only available online, the identifier property must be used. If the resource is only available offline, the availability property must be used. If the resource is available both online and offline, both properties may be used.

The publisher property must be used for descriptions of information resources (it is optional for descriptions of services).

4.1.4 Recommended properties

Five AGLS properties are recommended in certain circumstances. There may be valid reasons in particular circumstances not to include these properties, but the full implications must be understood and carefully weighed. The recommended properties are—

- (a) **description;**
- (b) **function (if subject is not used);**

- (c) language (where the language of the resource is not English);
- (d) subject (if function is not used); and
- (e) type.

In the case of function and subject, this Standard recommends that at least one of those two properties should appear in a metadata description.

The language property should be used where the language of the described resource is not English.

The use of recommended properties should be consistent when describing collections of similar or related resources.

4.1.5 Optional properties

All other properties are optional.

4.2 GENERAL CHARACTERISTICS

Every property has several common characteristics, including—

- (a) the property may be repeated;
- (b) the value of the property may contain any number of words or numbers and there is generally no fixed limit to the length of the property value. Use discretion as too much metadata will defeat the purpose of succinct descriptions; and
- (c) the value of the property may be in any (written) language. (This is not to be confused with the language property, which defines the language in which the resource itself is expressed.) For most Australian purposes, Australian English (en-AU) is recommended. See Appendix H for a guide to encoding language values.

Section 6 includes detailed information about each property and examples of how they are used.

4.3 ENCODING SCHEMES

Encoding schemes add meaning to a property by indicating how to interpret the value. There are two types of encoding schemes—Vocabulary Encoding Schemes and Syntax Encoding Schemes.

Vocabulary Encoding Schemes indicate that the value is a term from an existing controlled vocabulary (thesaurus). Examples of Vocabulary Encoding Schemes include DCMIType, LCSH, MESH, AGIFT, APAIS, AglsJuri and agls-audience.

Syntax Encoding Schemes indicate that the value is formatted in accordance with a formal notation or an externally defined standard. Values encoded with Syntax Encoding Schemes are primarily machine-processible. Examples of Syntax Encoding Schemes include URI, ISBN, ISO8601, AglsAgent and GOLD.

Examples of schemes that may be used with AGLS properties are listed in the property descriptions in Section 6. These lists are not exhaustive. Organizations may use whatever schemes are appropriate to their functions and activities but should provide clear references to whatever scheme is used.

As AGLS Maintenance Agency, the National Archives of Australia is interested in encoding schemes being used with the AGLS Metadata Standard. Organizations are encouraged to contact the AGLS Maintenance Agency (see Section 9) with details about schemes they are using in the deployment of AGLS metadata for their resources. The National Archives also requests information about Vocabulary Encoding Schemes and Syntax Encoding Schemes so it can ensure that schemas for AGLS are up to date. The National Archives maintains a list of different Vocabulary Encoding Schemes and Syntax Encoding Schemes and their application on the AGLS website (<http://www.agls.gov.au>).

4.4 AGLS METADATA EVOLUTION

As metadata standards evolve over time, it is essential that search engines and metadata repositories are able to interpret metadata records using—

- (a) the current version of this Standard, including recognizing new properties and current preferred formatting; and
- (b) earlier versions of the Standard to cater for legacy metadata.

New properties, Vocabulary Encoding Schemes and Syntax Encoding Schemes may be added to future editions of this Standard as the use of AGLS metadata increases and new services are created to provide advanced search services. AS 5045.1 will evolve over time to meet this need, and to take into account changes to Dublin Core. Implementers of AGLS are encouraged to make suggestions to the AGLS Maintenance Agency (see Section 9).

4.5 SYNTAX OPTIONS

Data must be written in a standard syntax for it to be exchanged and understood by networked computers. Syntax is the mechanism for ‘delivering’ metadata records, and can be quite independent of the storage option chosen, although storage options can influence the syntax chosen for delivery. Consideration should be given to supporting a common syntax for communicating and delivering metadata, independently of how it is stored and accessed.

HTML/XHTML is the most commonly used form of standardised syntax over the World Wide Web. The Resource Description Framework (RDF) is a standard for resource description and discovery using XML and offers the promise of reducing syntax problems. AGLS metadata may be expressed in any syntax appropriate to an organization’s business needs and technical requirements. The most important consideration is to use a syntax that will support the harvesting of metadata by suitable metadata-enabled search engines.

Clauses 4.6 and 4.7 describe AGLS metadata written in HTML 4.01 and XHTML 1.0 respectively. Use of metadata tools for creating either form of encoded metadata is recommended, as described in clause 3.6. HTML and XHTML syntaxes may be checked for conformity using the free World Wide Web Consortium Markup Validation Service (<http://validator.w3.org/>).

NOTE: The validation service only verifies that the HTML/XHTML syntax is valid, not that the metadata is valid or useful.

4.6 HTML SYNTAX

4.6.1 General

HTML is syntactically limited and no longer recommended by W3C, but is still widely used in legacy systems. XHTML 1.0 (a reformulation of HTML conforming to XML syntax) replaced HTML in January 2000. New implementations should use XHTML. Suitable conventions regarding the content of attributes of <meta> tags permit recording of most aspects of AGLS.

The conventions for encoding AGLS in HTML in legacy systems are based on a note for the Dublin Core Metadata Initiative, titled Expressing Dublin Core in HTML/XHTML meta and link elements. A full version of this is available on the DCMI website (<http://dublincore.org/documents/2008/08/04/dc-html/>).

4.6.2 Namespace

A namespace is a machine-readable file that provides definitions of the metadata scheme. Identifying the namespace of a metadata term is required for metadata to be machine-processible. Namespace prefixes are used in the property names to indicate the logical grouping and unique identification of a set of metadata terms from which the property is taken: DCTERMS for Dublin Core and AGLSTERMS for AGLS. The identities of the relevant namespaces, using the HTML <link> tag, have the following pattern:

```
<link rel="schema.PREFIX" href="namespaceURI">
```

The namespace encoding for the current versions of Dublin Core and AGLS are:

```
<link rel="schema.DCTERMS" href="http://purl.org/dc/terms/">
<link rel="schema.AGLSTERMS"
href="http://www.agls.gov.au/agls/terms/">
```

Legacy implementations using DC and AGLS elements must reference the legacy namespaces:

```
<link rel="schema.DC" href="http://purl.org/dc/elements/1.1/">
<link rel="schema.AGLS" href="http://www.agls.gov.au/agls/1.2/">
```

4.6.3 Properties

Properties are encoded using the name and content attributes of the HTML <meta> tag. Use the following forms are recommended:

```
<meta name="DCTERMS.property" content="Value">
<meta name="AGLSTERMS.property" content="Value">
```

For example:

```
<meta name="DCTERMS.date" content="2007-07-18">
<meta name="AGLSTERMS.function" content="School education">
```

Special characters in the value may be encoded as an HTML character entity reference. For example, an accented letter E:

```
<meta name="DCTERMS.creator" content="Da Costa, Jos&eacute;">
```

4.6.4 Encoding schemes

Where a scheme is specified, the namespace (the logical grouping and unique identification of a set of metadata terms) of the Vocabulary Encoding Scheme or Syntax Encoding Scheme must also be specified, e.g. "DCTERMS.URI" or "AGLSTERMS.AGIFT". Where a scheme is specified, the value must be encoded in the content according to that scheme, including use of any punctuation characters.

Encoding schemes are encoded using the scheme attribute of the HTML <meta> tag. Use the following forms:

```
<meta name="DCTERMS.property" scheme="DCTERMS.Scheme"
content="Value">
<meta name="AGLSTERMS.property" scheme="AGLSTERMS.Scheme"
content="Value">
```

For example—

```
<meta name="DCTERMS.date" scheme="DCTERMS.ISO8601" content="2007-07-18">
<meta name="DCTERMS.audience" scheme="AGLSTERMS.agls-audience"
content="people with disabilities">
<meta name="AGLSTERMS.function" scheme="AGLSTERMS.AGIFT"
content="School education">
```

4.6.5 Language of the value

Where the language of the value is indicated, it is be encoded using the lang attribute of the HTML <meta> tag. For example:

```
<meta name="DCTERMS.title" lang="en-AU" content="Directory of
organizations">
```

4.6.6 Example page in HTML

The following example is in HTML 4.01 Strict syntax.

NOTE: The example contains more than the minimum number of properties required.

```
<!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01//EN"
"http://www.w3.org/TR/html4/strict.dtd">
<html>
<head>
<title>Services to Government</title>
<link rel="schema.DCTERMS" href="http://purl.org/dc/terms/">
<link rel="schema.AGLSTERMS"
href="http://www.agls.gov.au/agls/terms/">

<meta name="DCTERMS.identifier" scheme="DCTERMS.URI"
content="http://www.naa.gov.au/recordkeeping/default.html">
<meta name="DCTERMS.creator" scheme="AGLSTERMS.AglsAgent"
content="corporateName=National Archives of Australia; address=Queen
Victoria Terrace, Parkes, ACT; contact=+61 2 6212 3600">
<meta name="DCTERMS.publisher" scheme="AGLSTERMS.AglsAgent"
content=" corporateName=National Archives of Australia;
address=Queen Victoria Terrace, Parkes, ACT; contact=+61 2 6212
3600">
<meta name="DCTERMS.rights" scheme="DCTERMS.URI"
content="http://www.naa.gov.au/html/copyright.html">7
<meta name="DCTERMS.title" content="Services to Government">
<meta name="DCTERMS.subject" scheme="AGLSTERMS.APAIS"
content="archives; information management; public administration">
<meta name="DCTERMS.description" lang="en-AU" content="This page
provides access to information about records and recordkeeping in
the Commonwealth, including references to standards, guidelines and
advice.">
<meta name="DCTERMS.language" scheme="DCTERMS.RFC4646" content="en-
AU">
<meta name="AGLSTERMS.jurisdiction" scheme="AGLSTERMS.AglsJuri"
content="Commonwealth of Australia">
<meta name="AGLSTERMS.function" scheme="AGLSTERMS.AGIFT"
content="recordkeeping standards">
<meta name="DCTERMS.created" scheme="DCTERMS.ISO8601" content="1998-
08-27">
<meta name="DCTERMS.modified" scheme="DCTERMS.ISO8601"
content="2008-01-29">
<meta name="AGLSTERMS.aggregationLevel" content="collection">
<meta name="AGLSTERMS.category" content="service">
<meta name="AGLSTERMS.documentType" scheme="AGLSTERMS.agls-document"
content="guidelines">
<meta name="DCTERMS.format" scheme="DCTERMS.IMT"
content="text/html">

<!-- Any other header information -->
</head>
<body>
<p><!-- Page content --></p>
</body>
```

</html>

4.7 XHTML SYNTAX

4.7.1 General

XHTML 1.0 is reformulation of HTML 4 conforming to XML syntax. The conventions for encoding AGLS in XHTML are based on a note for the Dublin Core Metadata Initiative, titled Expressing Dublin Core in HTML/XHTML meta and link elements. A full version of this is on the DCMI website (<http://dublincore.org/documents/2008/08/04/dc-html/>).

The syntax of XHTML is slightly different from HTML because XHTML is case sensitive and requires a trailing '/' before the closing '>' in the <link> and <meta> tags.

4.7.2 Namespace

A namespace is a machine-readable file that provides definitions of the metadata scheme. Identifying the namespace is required for metadata to be machine-processible. Use namespace prefixes in the property names to indicate the logical grouping and unique identification of a set of metadata terms from which the property is taken: DCTERMS for Dublin Core and AGLSTERMS for AGLS. Encode the namespace using the HTML <link> tag using the following pattern:

```
<link rel="schema.PREFIX" href="namespaceURI" />
```

The namespace encoding for the current versions of Dublin Core and AGLS are:

```
<link rel="schema.DCTERMS" href="http://purl.org/dc/terms/" />
```

```
<link rel="schema.AGLSTERMS"
href="http://www.agls.gov.au/agls/terms/" />
```

Legacy implementations using DC and AGLS elements must reference the legacy namespaces:

```
<link rel="schema.DC" href="http://purl.org/dc/elements/1.1/" />
```

```
<link rel="schema.AGLS" href="http://www.agls.gov.au/agls/1.2/" />
```

4.7.3 Properties

Properties are encoded using the name and content attributes of the XHTML <meta> tag. Use the following forms:

```
<meta name="DCTERMS.property" content="Value" />
```

```
<meta name="AGLSTERMS.property" content="Value" />
```

For example:

```
<meta name="DCTERMS.date" content="2007-07-18" />
```

```
<meta name="AGLSTERMS.function" content="School education" />
```

Special characters in the value may be encoded as an HTML character entity reference. For example, an accented letter E:

```
<meta name="DCTERMS.creator" content="Da Costa, Jos&eacute;" />
```

4.7.4 Encoding schemes

Where a scheme is specified, the namespace of the Vocabulary Encoding Scheme or Syntax Encoding Scheme must also be specified, e.g. "DCTERMS.URI" or "AGLSTERMS.AGIFT". The value must be encoded in the content according to the specified scheme, including the use of any punctuation characters.

Encoding schemes are encoded using the scheme attribute of the XHTML <meta> tag. Use the following forms:

```
<meta name="DCTERMS.property" scheme="DCTERMS.Scheme"
content="Value" />
```

```
<meta name="AGLSTERMS.property" scheme="AGLSTERMS.Scheme"
content="Value" />
```

For example:

```
<meta name="DCTERMS.date" scheme="DCTERMS.ISO8601" content="2007-07-18" />
<meta name="DCTERMS.audience" scheme="AGLSTERMS.agls-audience"
content="people with disabilities" />
<meta name="AGLSTERMS.function" scheme="AGLSTERMS.AGIFT"
content="School education" />
```

4.7.5 Language of the value

Where the language of the value is indicated, it is encoded using the `xml:lang` attribute of the XHTML `<meta>` tag. For example:

```
<meta name="DCTERMS.title" xml:lang="en-AU" content="Directory of
organizations" />
```

For metadata records encoded in XHTML 1.0 Transitional syntax (XHTML designed to be compatible with HTML 4) both `lang` and `xml:lang` attributes may be used, however the value of the `xml:lang` attribute takes precedence.

4.7.6 Example page in XHTML

The following example is in XHTML 1.0 Strict syntax.

NOTE: The example contains more than the minimum number of properties required.

```
<?xml version="1.0"?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
"http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en-AU">
<head>
<title>Services to Government</title>
<link rel="schema.DCTERMS" href="http://purl.org/dc/terms/" />
<link rel="schema.AGLSTERMS"
href="http://www.agls.gov.au/agls/terms/" />

<meta name="DCTERMS.identifier" scheme="DCTERMS.URI"
content="http://www.naa.gov.au/recordkeeping/default.html" />
<meta name="DCTERMS.creator" scheme="AGLSTERMS.AglsAgent"
content="corporateName=National Archives of Australia; address=Queen
Victoria Terrace, Parkes, ACT; contact=+61 2 6212 3600" />
<meta name="DCTERMS.publisher" scheme="AGLSTERMS.AglsAgent"
content=" corporateName=National Archives of Australia;
address=Queen Victoria Terrace, Parkes, ACT; contact=+61 2 6212
3600" />
<meta name="DCTERMS.rights" scheme="DCTERMS.URI"
content="http://www.naa.gov.au/html/copyright.html" />
<meta name="DCTERMS.title" content="Services to Government" />
<meta name="DCTERMS.subject" scheme="AGLSTERMS.APAIS"
content="archives; information management; public administration" />
<meta name="DCTERMS.description" xml:lang="en-AU" content="This page
provides access to information about records and recordkeeping in
the Commonwealth, including references to standards, guidelines and
advice." />
<meta name="DCTERMS.language" scheme="DCTERMS.RFC4646" content="en-
AU" />
<meta name="AGLSTERMS.jurisdiction" scheme="AGLSTERMS.AglsJuri"
content="Commonwealth of Australia" />
<meta name="AGLSTERMS.function" scheme="AGLSTERMS.AGIFT"
content="recordkeeping standards" />
```

```

<meta name="DCTERMS.created" scheme="DCTERMS.ISO8601" content="1998-
08-27" />
<meta name="DCTERMS.modified" scheme="DCTERMS.ISO8601"
content="2008-01-29" />
<meta name="AGLSTERMS.aggregationLevel" content="collection" />
<meta name="AGLSTERMS.category" content="service" />
<meta name="AGLSTERMS.documentType" scheme="AGLSTERMS.agls-document"
content="guidelines" />
<meta name="DCTERMS.format" scheme="DCTERMS.IMT"
content="application/xhtml+xml" />

<!-- Any other header information -->
</head>
<body>
  <!-- Page content -->
</body>
</html>

```

4.7.7 Further information

Further information about encoding Dublin Core metadata in XHTML is available from the DCMI website (<http://dublincore.org/documents/2008/08/04/dc-html/>). The conventions described there also apply to AGLS properties and encoding schemes.

4.8 PREFERRED FORMATTING IN HTML/XHTML

The previous edition of this Standard (and other DCMI and W3C standards) made different recommendations for the formatting of properties. These differences relate to the different namespaces being used. For example previous recommendations—

- (a) specified using an uppercase first letter for the names of DCMES elements, for example ‘Title’ rather than ‘title’;
- (b) specified prefixing element refinements by the element being refined, for example ‘DC.Date.modified’ rather than ‘DCTERMS.modified’; and
- (c) did not specify using a namespace prefix for encoding scheme names, for example ‘URI’ rather than ‘DCTERMS.URI’.

These forms of encoding are acceptable, as are legacy metadata records created using previously recommended formatting, but are no longer the preferred form. In general, DCMI recommends that any software applications that consume DC/AGLS records embedded into HTML/XHTML should ignore the case of namespace prefixes and property names. This means that all the following forms should be treated as being equivalent:

```

<meta name="DCTERMS.date" content="2007-07-18" />
<meta name="dcterms.Date" content="2007-07-08" />
<meta name="DCTERMS.date" content="2007-07-18" />

```

Likewise, the following forms should be treated as being equivalent:

```

<meta name="DCTERMS.Date" scheme="ISO8601" content="2007-07-18" />
<meta name="dcterms.Date" scheme="dcterms.ISO8601" content="2007-07-
18" />
<meta name="DCTERMS.date" scheme="DCTERMS.ISO8601" content="2007-07-
18" />

```

In each of the examples above, the last line is the preferred form that should be used. Metadata generation applications must generate new metadata in the preferred form.

Legacy applications may use properties with sub-property relations (previously called ‘element refinements’) in their legacy form. The following forms should be treated as being equivalent, however all DC and AGLS properties are free standing and the last line is the preferred form.

```
<meta name="DC.Date.modified" content="2007-07-18" />
<meta name="DC.date.modified" content="2007-07-18" />
<meta name="DCTERMS.modified" content="2007-07-18" />

<meta name="DC.Rights.righgsHolder" content="National Archives of
Australia" />
<meta name="DC.rights.righgsholder" content="National Archives of
Australia" />
<meta name="DCTERMS.rightsHolder" content="National Archives of
Australia" />

<meta name="DC.Type.aggregationLevel" content="collection" />
<meta name="DC.type.aggregationlevel" content="collection" />
<meta name="AGLSTERMS.aggregationLevel" content="collection" />
```

Over time, it is recommended that implementers use the semantically more precise DCTERMS and AGLSTERMS properties, as they more closely follow emerging notions of best practice for machine-processible metadata.

Search engines and metadata repositories must be able to interpret metadata records in older forms to cater for legacy metadata as well as the current preferred form.

4.9 OTHER SYNTAXES

4.9.1 General

Other syntaxes may be used to express AGLS metadata, such as XML and RDF. XML and RDF syntaxes are case sensitive and the formatting rules are stricter than HTML. The National Archives of Australia has produced guides to expressing AGLS metadata in XML and RDF which includes examples of encoding AGLS metadata records. These guides are available from the AGLS website (<http://www.agls.gov.au>).

4.9.2 XML syntax

XML is a more sophisticated markup language than HTML and it is possible to express quite complex metadata structures using XML. The National Archives of Australia has produced a guide to expressing AGLS metadata in XML which includes examples of encoding AGLS metadata records. This guide is available from the AGLS website (<http://www.agls.gov.au>).

Further information about encoding Dublin Core metadata in XML is available from the DCMI website (<http://dublincore.org/documents/dc-xml/>). The conventions described there also apply to AGLS properties and encoding schemes.

4.9.3 RDF Syntax

The Resource Description Framework (RDF) is a general purpose language for representing information in a minimally constraining, flexible way. Each metadata property is repeatable in HTML/XHTML but there is no defined order of properties. RDF supports ordering whereas HTML/XHTML does not. The ordering of multiple occurrences of the same property (e.g. creator) may have a significance intended by the provider, such as in academic publishing where the ordering of authors is significant.

The National Archives of Australia has produced a guide to expressing AGLS metadata in RDF which includes examples of encoding AGLS metadata records. This guide is available from the AGLS website (<http://www.agls.gov.au>).

Further information about encoding Dublin Core metadata in RDF is available from the DCMI website (<http://dublincore.org/documents/dc-rdf/>). The conventions described there also apply to AGLS properties and encoding schemes.

4.9.4 RDFa in XHTML

Web browsers can provide only minimal assistance to humans in parsing and processing web data. RDFa is a thin layer of Resource Description Framework metadata which can be added to web content to make it machine readable as well as human readable.

Further information about encoding RDFa in XHTML is available from the World Wide Web Consortium, website (<http://www.w3.org/TR/xhtml-rdfa-primer/>). Many formalized metadata properties, including Dublin Core and AGLS Terms, can be used.

RDFa is only formally specified for XHTML 1.1. While most known RDFa parsers will recognize RDFa in any version of HTML, and no known browser will fail after adding RDFa markup, RDFa will not validate in HTML at present.

Example

```
<div xmlns:dcterms="http://purl.org/dc/terms/">
  <span property="dcterms:title" xml:lang="en-AU">An approach to the
  preservation of digital records</span> was first published in <span
  property="dcterms:created" content="2002-10">October 2002</span> by
  the <span property="dcterms:creator">National Archives of
  Australia</span> and revised in <span
  property="dcterms:modified">2007</span>.
</div>
```

SECTION 5 AGLS METADATA PROPERTIES AND EXAMPLES

5.1 PROPERTIES AND DESCRIPTIONS

Table 5.1 contains a summary of AGLS properties and properties with ‘sub-property of’ relations.

TABLE 5.1
AGLS PROPERTY SUMMARY

AGLS property	Obligation	Related properties
audience	Optional	
availability	Conditional	
contributor	Optional	
coverage	Optional	jurisdiction temporal spatial
creator	Mandatory	
date	Mandatory	available created dateCopyrighted dateLicensed issued modified valid
description	Recommended	
format	Optional	extent medium
function	Recommended	
identifier	Conditional	bibliographicCitation
language	Recommended	
mandate	Optional	act regulation case
publisher	Conditional	

(continued)

TABLE 5.1 (continued)

AGLS property	Obligation	Related properties
relation	Optional	conformsTo hasFormat hasPart hasVersion isBasedOn isBasisFor isFormatOf isPartOf isReferencedBy isRequiredBy isVersionOf replaces isReplacedBy references requires
rights	Optional	accessRights license protectiveMarking rightsHolder
source	Optional	
subject	Recommended	
title	Mandatory	alternative
type	Recommended	aggregationLevel category documentType serviceType

5.2 OVERVIEW

In the property descriptions in Table 6.2, a formal single-word term name is assigned. Although some environments, such as HTML, are not case-sensitive, recommended best practice is to adhere to the case conventions in the property names given below. This will avoid conflicts if converting the metadata to a case-sensitive syntax.

This Standard shows examples in HTML 4.01 Strict and XHTML 1.0 Strict. The National Archives of Australia has produced guides to expressing AGLS metadata in XML and RDF, including examples of encoding AGLS metadata records. These guides are available from the AGLS website (<http://www.agls.gov.au>).

Examples in the current preferred form are normative. Examples in legacy form are informative.

The Mandatory properties (and their related properties) are listed first, then Conditional properties, then Recommended properties and finally all Optional properties are listed alphabetically. The properties are grouped around the 19 property names previously known as elements under old DC and AGLS standards.

Related properties (properties with sub-property of relations) are grouped with the major properties.

The description of each property in the following pages uses the structure shown in Table 5.2. Encoding schemes and the default values are only shown where applicable.

TABLE 5.2
METADATA PROPERTY DESCRIPTION

Term name	A token assigned to the term, unique within the term's namespace.
Label	The human-readable label assigned to the term.
HTML/XHTML syntax	The HTML/XHTML syntax label for the term.
XML/RDF syntax	The XML/RDF syntax label for the term.
Definition	A statement that represents the concept and essential nature of the term.
Obligation	The obligation status of the term.
Encoding scheme(s)	Valid Vocabulary Encoding Schemes and/or Syntax Encoding Schemes indicating how the value is to be interpreted. The list of valid encoding schemes given for each property may not be exhaustive.
Enumerated values	An exact listing of all acceptable values. No values other than those shown may be used.
Default value	The assumed value if none is specified.

5.3 CREATOR PROPERTY

5.3.1 Attributes

Table 5.3 sets out the attributes for the creator property.

TABLE 5.3
CREATOR PROPERTY

Term name	creator
Label	Creator
HTML/XHTML syntax	DCTERMS.creator
XML/RDF syntax	dcterms:creator
Definition	An entity primarily responsible for making the resource.
Obligation	Mandatory
Syntax encoding schemes	AglsAgent, GOLD, URI

5.3.2 Guidelines for use of creator

The creator will usually be the name of the person or organization responsible for creating the content of the resource. If the creator is not known, set the value as "unknown".

When expressing personal names, the name should be in the form of the last name followed by a comma, then the first name (e.g. "Smith, Mary"). In the case of organizations where there is a need to express a hierarchy for the creator, express the full hierarchy from largest to smallest (e.g. "Ajax Service Consulting Pty Ltd, IT Services Division, Web Consulting Team").

Where agents are described in detail as a related description (see Section 7), the agent description may be referenced as a URI.

NOTE: Metadata creators must be mindful of privacy issues when including personal information in metadata.

5.3.3 HTML examples for creator

```
<meta name="DCTERMS.creator" content="Smith, Peter">
```

```
<meta name="DCTERMS.creator" content="Ajax Service Consulting Pty  
Ltd, IT Services Division, Web Consulting Team">
```

```
<meta name="DCTERMS.creator" scheme="DCTERMS.URI"  
content="http://example.org/agents/id1234">
```

```
<meta name="DCTERMS.creator" scheme="AGLSTERMS.GOLD" content="c=AU;  
o=Commonwealth of Australia; ou=Department of Prime Minister and  
Cabinet; ou=National Archives of Australia">
```

```
<meta name="DCTERMS.creator" scheme="AGLSTERMS.AglsAgent"  
content="corporateName=BHP Corporate Library; contact=+61 3 9999  
9999; address=5th floor, 1111 Smith Street, Flemington, Victoria">
```

Legacy form

```
<meta name="DC.creator" content="Smith, Peter">
```

5.3.4 XHTML examples for creator

```
<meta name="DCTERMS.creator" content="Jones, Sally" />
```

```
<meta name="DCTERMS.creator" content="Acme Widget Holding Limited"  
/>
```

```
<meta name="DCTERMS.creator" scheme="DCTERMS.URI"  
content="http://example.org/agents/id1234" />
```

```
<meta name="DCTERMS.creator" scheme="AGLSTERMS.GOLD" content="c=AU;  
o=Commonwealth of Australia; ou=Department of Prime Minister and  
Cabinet; ou=National Archives of Australia" />
```

```
<meta name="DCTERMS.creator" scheme="AGLSTERMS.AglsAgent"  
content="corporateName=BHP Corporate Library; contact=+61 3 9999  
9999; address=5th floor, 1111 Smith Street, Flemington, Victoria" />
```

Legacy form

```
<meta name="DC.creator" content="Jones, Sally" />
```

5.4 DATE PROPERTY AND RELATED PROPERTIES

5.4.1 Attributes

Table 5.4 sets out the attributes for the date property and related properties.

TABLE 5.4
DATE AND RELATED PROPERTIES

Term name	Date
Label	date
HTML/XHTML syntax	DCTERMS.date
XML/RDF syntax	dcterms:date
Definition	A point or period of time associated with an event in the life of the resource.
Obligation	Mandatory unless a related property is used.
Syntax encoding schemes	ISO8601, XSD.date, XSD.dateTime
Term name	available
Label	Date Available
HTML/XHTML syntax	DCTERMS.available
XML/RDF syntax	dcterms:available
Definition	Date (often a range) that the resource became or will be available.
Obligation	Optional
Syntax encoding schemes	ISO8601, Period
Term name	created
Label	Date Created
HTML/XHTML syntax	DCTERMS.created
XML/RDF syntax	dcterms:created
Definition	Date of creation of the resource.
Obligation	Optional—may be used in place of date.
Syntax encoding schemes	ISO8601, XSD.date, XSD.dateTime
Term name	dateCopyrighted
Label	Date Copyrighted
HTML/XHTML syntax	DCTERMS.dateCopyrighted
XML/RDF syntax	dcterms:dateCopyrighted
Definition	Date of creation of the resource.
Obligation	Optional
Syntax encoding schemes	ISO8601, XSD.date, XSD.dateTime
Default value	N/A

(continued)

TABLE 5.4 (continued)

Term name	Date
Term name	dateLicensed
Label	Date Licensed
HTML/XHTML syntax	AGLSTERMS.dateLicensed
XML/RDF syntax	aglstterms:dateLicensed
Definition	Date a license was applied or became effective.
Obligation	Optional
Syntax encoding schemes	ISO8601, XSD.date, XSD.dateTime
Default value	N/A
Term name	issued
Label	Date Issued
HTML/XHTML syntax	DCTERMS.issued
XML/RDF syntax	dcterms:issued
Definition	Date of formal issuance (e.g. publication) of the resource.
Obligation	Optional—may be used in place of date.
Syntax encoding schemes	ISO8601, XSD.date, XSD.dateTime
Term name	modified
Label	Date Modified
HTML/XHTML syntax	DCTERMS.modified
XML/RDF syntax	dcterms:modified
Definition	Date on which the resource was changed.
Obligation	Optional—may be used in place of date.
Syntax encoding schemes	ISO8601, XSD.date, XSD.dateTime
Term name	valid
Label	Date Valid
HTML/XHTML syntax	DCTERMS.valid
XML/RDF syntax	dcterms:valid
Definition	Date (often a range) of validity of a resource.
Obligation	Optional—may be used in place of date.
Syntax encoding schemes	ISO8601, Period

5.4.2 Guidelines for use of date and related properties

The available, created, dateCopyrighted, dateLicensed, issued, modified and valid properties have a sub-property relationship to the date property. These related properties may be used in place of the date property to meet the mandatory obligation requirement for date.

Where the date property is used alone, the date in the value is taken to be the creation date. Use narrower terms such as created and modified to specify multiple dates in the lifecycle of the resource.

Dates must be formatted according to ISO 8601 Extended Format. This specifies dates in the form YYYY-MM-DD, and can accommodate times (e.g. 2001-04-30T13:23:31+10:00). The full syntax for date and time encoding is in Appendix I.

Use the valid property with ISO 8601 or the DCMI Period Syntax Encoding Schemes for specifying a range of dates when the information is valid.

5.4.3 XSD Date and Time Data Types

The W3C XML Schema Definition (XSD) Date and Time Data Types may be used as a Syntax Encoding Scheme for the date, created, dateCopyrighted, dateLicensed, issued and modified properties. In such cases the XSD namespace must be linked.

HTML

```
<link rel="schema.XSD" href="http://www.w3.org/2001/XMLSchema#">
```

XHTML

```
<link rel="schema.XSD" href="http://www.w3.org/2001/XMLSchema#" />
```

Dates alone (e.g. 2008-01-22) must use XSD.date as the encoding scheme. Dates with times (e.g. 2008-01-22T15:35:00+11:00) must use XSD.dateTime as the encoding scheme.

5.4.4 Describing services

Use the available property with the ISO 8601 or DCMI Period Syntax Encoding Schemes for periodic or seasonal service availability.

5.4.5 HTML examples for date and related properties

```
<meta name="DCTERMS.date" content="2002-03-17">
```

```
<meta name="DCTERMS.created" scheme="DCTERMS.ISO8601" content="2002-03-17">
```

```
<meta name="DCTERMS.created" scheme="XSD.date" content="2002-03-17">
```

```
<meta name="DCTERMS.created" content="1980">
```

```
<meta name="DCTERMS.valid" scheme="DCTERMS.Period"
content="start=2001-05-01; end=2001-09-30">
```

```
<meta name="DCTERMS.valid" scheme="DCTERMS.ISO8601" content="2007/-"
">
```

```
<meta name="DCTERMS.available" scheme="DCTERMS.Period"
content="start=2008-07-01; end=2007-09-30">
```

```
<meta name="DCTERMS.available" scheme="DCTERMS.ISO8601"
content="2008-07-01T09:00:00+10:00/2008-10-30T16:00:00+11:00">
```

```
<meta name="DCTERMS.modified" scheme="DCTERMS.ISO8601"
content="2008-01-16T14:34:51+11:00">
```

```
<meta name="DCTERMS.modified" scheme="XSD.dateTime" content="2008-01-16T14:34:51+11:00">
```

```
<meta name="DCTERMS.dateCopyrighted" scheme="DCTERMS.ISO8601"
content="2004-06-08">
```

```
<meta name="AGLSTERMS.dateLicensed" scheme="DCTERMS.ISO8601"
content="2007-06-18">
```

Legacy form

```
<meta name="DC.date" content="2002-03-17">
```

```
<meta name="DC.date.modified" content="2002-03-17">
```