

The Australian Government Locator Service: Enabling Seamless Online Access to Government

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ORIGINS

The Australian Government Locator Service (AGLS) had its origins in the work of the Information Management Steering Committee (IMSC), an interdepartmental committee established by the Commonwealth Office of Government Information Technology. The IMSC was established in 1996 at the request of the then Chief Government Information Officer, Andy McDonald. Chaired by the then Deputy National Librarian Eric Wainwright, the Committee released its report, entitled "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.¹ One of the recommendations of the report called for the establishment of an Internet-based Australian Government Information Locator System.

At the time of the IMSC it was thought that an Australian Government Locator Service would be a variant of the U.S. Government Information Locator Service (GILS). Consequently, for much of its gestation period what is now known as AGLS was referred to as AUSGILS. However, in late 1997 when a workshop of experts convened to develop the AUSGILS standard it was decided to abandon the GILS framework and instead base the online locator service on the Dublin Core metadata standard.

From the outset it was recognised that any Australian government online locator service should be cross-jurisdictional in nature. In other words, it was recognised that users will often not know which level of government provides the resource they require. Because of our federal system of government, Australia needs to take advantage of the Internet to create a single seamless and integrated regime for the location of the information and services of all our governments, Federal, State and Local. With this in mind the AGLS standard was developed under the auspices of the Government Technology and Telecommunications Committee, a cross-jurisdictional committee of officials which reported to the Online Council of Ministers. The ongoing development of the AGLS relies upon continued cooperation between: the National Archives of Australia as lead agency for the initiative; the Office for Government Online (formerly the Office of Government Information Technology); Online Council Officials; and, most importantly, all of those experts inside and outside of government who have an interest in promoting online resource discovery.

¹ *Management of Government Information as a National Strategic Resource: Report of the Information Management Steering Committee on Information Management in the Commonwealth Government*, Canberra, Office of Government Information Technology, 1997. (www.ogit.gov.au/publications/imsc/imsc rept.htm)

OBJECTIVES

The objective of AGLS is to improve the visibility, accessibility and interoperability of government information and services through the provision of structured, standardised Web-based resource descriptions which enable users to locate the information or service that they require. Deployment of AGLS metadata will enable Web-based search engines to do their job more efficiently. This in turn will help ensure that those who conduct Web searches are presented with meaningful and relevant results sets. The development of the AGLS signifies a recognition by governments that, while the World Wide Web is a major means of communication and interaction with citizens, it is nevertheless a huge and chaotic information space which requires improved means of organisation and user assistance. As such, AGLS will be a key enabler that will encourage individuals and organisations to transact business electronically with government agencies at all three levels of government.

Related projects which are similarly aimed at making government resources accessible online include: the development of a cross-jurisdictional Internet gateway to the services and information of Australian governments (Commonwealth, State and Local) to be located at www.gov.au; and the articulation of a set of functional requirements for search engines which, when satisfied, will facilitate the efficient exploitation of AGLS metadata.²

AGLS AND DUBLIN CORE

The decision to base AGLS on Dublin Core rather than GILS was made in view of deployment difficulties that have been experienced by GILS, most of which relate to the overly complicated structure of GILS and the associated expense of GILS metadata creation.³ Dublin Core, on the other hand, has simplicity of metadata creation and deployment as a primary objective. It is intended that most Dublin Core metadata can be created at the time of document creation either manually by the document author or automatically by the software platform used to create or publish the document.⁴

Another reason for basing AGLS on the Dublin Core is that Dublin Core is building up an international momentum that will probably be unstoppable. It was considered vital for any Australian Government metadata standard to be compliant with the world's most commonly accepted and deployed generic resource discovery metadata standard. In essence, the game plan of AGLS has been to customise the Dublin Core in order to fulfill the vision of GILS. This is not a particularly inventive strategy, as Dublin Core and GILS are not all that dissimilar to begin with, notwithstanding the fact that Dublin Core is much simpler than GILS.

The Dublin Core set is what it says it is – a core. It has always been envisaged that particular communities would develop more detailed metadata sets that fulfil their particular requirements and which are based on the Dublin Core. With this in mind the

² *Functional Requirements for a Whole-of-Australian-Government Search Architecture: a Report by the Search Engine Working Group (SEWG), January 1998.* (www.nla.gov.au/oz/gov/sewg/)

³ Moen, W E. and C R. McClure, "An Evaluation of the Federal Government's Implementation of the Government Information Locator Service (GILS) Final Report, June 30 1997" (www.unt.edu/slis/research/gilseval/titpag.htm)

⁴ See the OCLC site for more information on the Dublin Core and Warwick framework: purl.oclc.org/dc/

so-called Warwick Framework was developed. The Warwick Framework is a container architecture that facilitates interoperability between different sector-specific metadata sets.⁵ Because it is based upon the Dublin Core, the AGLS fits very comfortably within the Warwick Framework. AGLS is itself a core metadata set which is intended to be extended by more detailed sector-specific metadata standards such as that used by the Business Entry Point.⁶

The AGLS set adopted the fifteen Dublin Core elements and has added four additional elements: Function, Audience, Mandate and Availability.

AGLS Elements (Dublin Core plus 4*)		
Title	Contributor	Source
Creator	Date	Language
Subject	Type	Relation
Description	Format	Coverage
Publisher	Identifier	Rights
Function*	Mandate*	Availability*
Audience*		

The **availability** element was added as a reflection of the fact that AGLS is a locator scheme. That is, the purposes of AGLS stretch beyond resource discovery (the primary focus of the Dublin Core) to encompass resource delivery. In other words, users do not just want to know that a resource exists, they need to know how it may be obtained or located. The existence of this element permits the creation of AGLS locator records for the non-web based resources of government. For example, the availability of a resource may be via a street or postal address or by a telephone number.

The **function** descriptor was considered an essential element in a government metadata set. Government agencies perform functions. Any resource made available by an agency should relate to one or more of the functions performed by that agency. While government activities can encroach upon an infinite variety of subject areas, there is a finite set of defined and agreed functions that are performed by governments. The concept of function therefore has the potential to provide a powerful means of access to government resources. The existence of the AGLS function element also strengthens the linkages between government online resource provision and government recordkeeping regimes which, since the release of the *Australian Standard for Records Management (AS4390)*⁷, are making increasing use of functions-based records classification methodologies.

The **mandate** element allows for government resources to be linked to, and thus searchable by, their legal mandate, which is very often a specific legislative instrument. The **audience** element indicates the target audience or audiences for the resource in question, eg: university students, farmers, small businesses, importers, etc.

⁵ Lagoze, C. 'The Warwick Framework: a container architecture for diverse sets of metadata' *D-Lib Magazine*, July/August 1996 (www.dlib.org/dlib/july96/lagoze/07/lagoze.html)

⁶ Business Entry Point at www.business.gov.au/

⁷ Standards Australia, *Australian Standard: Records Management AS4390*, Homebush NSW, 1996.

THESAURI

The *Keyword AAA Thesaurus*⁸ (a whole-of-governments thesaurus of general administrative functions, developed by the State Records Authority of NSW) and individual agency functions thesauri (which are mostly extended versions of *Keyword AAA*) can be sources for descriptor terms for the AGLS function element.

A related initiative which has been proposed with the intention of taking maximum advantage of the AGLS function element, is a National Archives project to develop an Australian Governments Interactive Functions Thesaurus (AGIFT) with user-friendly natural language searching capabilities. Such a thesaurus is, I believe, necessary to ensure that end-users can be connected with the unfamiliar bureaucratic terminology that is used in functions thesauri. It is intended that this interactive thesaurus will be made available for incorporation into government Web access facilities such as jurisdictional and topic specific entry points⁹

While separate functions thesauri will be developed for in-house record keeping and resource description purposes by individual agencies, those agencies will have the choice of either adopting a suitable commercially-available subject thesaurus for selecting AGLS subject descriptor terms or, alternatively, compiling their own in-house subject thesaurus

AGLS IS SIMPLE, FLEXIBLE AND DYNAMIC

An overriding objective of AGLS is to institute a government resource discovery metadata regime that is simple, flexible and dynamic. Although AGLS consists of 19 elements, only 6 of these are mandatory. Utilisation of the other 13 optional elements will be a business decision of individual agencies that will be made on the basis of a cost-benefit analysis of the resources being described. We envisage that more effort will be invested in metadata creation for those resources which are considered to be of particular significance.

AGLS metadata is designed to be created at the point of document creation. Importantly, however, it can also be added to and improved as documents evolve or become more significant. Another example of the flexibility of AGLS metadata is that it can be linked to single items or to aggregations of resources.

AGLS metadata can be created automatically, either by customising the self-documenting capabilities of software applications such as records management systems or Web publishing packages or by specially designed metadata generating tools such as the Distributed Systems Technology Centre's 'Reggie'¹⁰. AGLS metadata can also, of course, be created by human beings such as document authors, Web masters or, for really high quality 'value-added' metadata, by professional knowledge representation experts such as librarians

⁸ *Keyword AAA A Thesaurus of General Terms*, Rev. Ed., Sydney, The Archives Authority of New South Wales, 1998

⁹ Hoy, M. *Understanding Official Government Terminology: Natural Language Searching and Government Thesauri* (www.naa.gov.au/govserv/agls/papers/agift_3_september.htm)

¹⁰ metadata.net

The Australian metadata community is actively exploring how the metadata specified in standardised sets such as AGLS can be cost-effectively created, stored, interrogated by search facilities and persistently linked to the resources described. Associating metadata with information objects can occur by: embedding the metadata within an HTML document by means of 'metatagging'; by linking objects to separate metadata stores/repositories/databases; or by encapsulating the object with metadata. The Brisbane-based Cooperative Research Centre, the Distributed Systems Technology Centre (DSTC Pty Ltd), is especially prominent in a range of metadata-related research and development initiatives.¹¹ For example, through the National Library's MetaWeb project¹² and other initiatives, DSTC has been experimenting with techniques for deploying distributed metadata repositories using protocols such as Z39.50 and X 500 to facilitate metadata interrogation by Web-based search engines.

A significant recent development is the release of the eXtensible Markup Language (XML) standard for Web-based resource sharing. It is anticipated that XML, which combines the power and functionality of SGML with the simplicity of HTML, will become the dominant Web markup language in the next few years. The Dublin Core Community has been quick to recognise the significance and potential of XML, with DSTC again playing a leading role in the development of the Resource Description Framework (RDF), an XML-based framework for the deployment of resource description metadata over the Web.¹³

One vexed issue that RDF should help settle is that of syntax. While the Dublin Core standard defines the semantics (ie. meaning) of each of its 15 elements, the syntax with which the metadata can be expressed or written is not stipulated. Initially it was felt that AGLS should be similarly non-specific in the area of syntax. More recently, however, it has been decided that AGLS users and search engines need specific guidance on questions of syntax. As a result, Version 1.1 of the AGLS User Manual gives examples of syntax for qualified AGLS in both HTML and XML/RDF languages. It is very possible that, before long, RDF will define and supply the syntax for most Dublin Core and AGLS metadata records. The fact that AGLS is interoperable with the Dublin Core enables it to take advantage of such RDF-related innovations.

I must emphasise here that individual agencies will need to determine their own deployment policies and procedures for AGLS. AGLS is not a straightjacket. It has been intentionally designed to give agencies maximum freedom of choice in areas where their business needs will vary from case to case. Some of the business choices that agencies will need to make when deploying AGLS include:

- which resources to metadata?
- how much retro-fitting needs to be done?
- how much metadata will be created and at what level: item or aggregate or both?
- who will be responsible for metadata creation?
- when will the metadata be created?

¹¹ See the DSTC site (www.dstc.edu.au) for details of these projects, e.g. next generation middleware, flexible configurable workflow prototypes, and global information access.

¹² See the MetaWeb Project home page at www.dstc.edu.au/Research/Projects/metaweb/

¹³ Miller, E. 'An Introduction to the Resource Description Framework', *D-Lib Magazine*, May 1998 (www.dlib.org/dlib/may98/miller/05miller.html)

- what metadata tools will be used?
- where will the metadata be stored?
- how will the metadata be interrogated by external search facilities?
- how structured will the metadata records be? Will they have a simple, minimalist structure or will they make use of a number of qualifiers and registered schemes?
- what syntax (eg HTML or RDF) will be used for writing the metadata?
- which subject thesaurus will be used?

Is it Worth it?

So, is AGLS really worth the effort?

Our answer would be, if it is worth publishing something on the Web, then it is worth linking it to some metadata to ensure people can find it. Of course the level of effort and investment that an agency invests in AGLS metadata creation and deployment will be a business decision of that agency. These decisions will be informed by considerations such as the priority an agency places on making its services and information visible and accessible to the community.

An issue which has the potential to make or break AGLS is the cost of metadata creation. It is self-evident that as long as metadata has to be created manually by human beings, not much of it will ever be created. A major challenge therefore is the development and deployment of automated metadata generating capabilities in Web publishing software, record keeping systems and other document management systems. As much metadata as possible needs to be generated by self-documenting systems rather than by human beings.

It is envisaged that most AGLS metadata will be deployed in a decentralised manner and that government agencies will assign AGLS metadata at aggregate and item/object level, manage that metadata, and make it available to Web based search engines for retrieval. An AGLS User Manual has been released and is available via the National Archives home page ¹⁴

AGLS MAINTENANCE AGENCY

The National Archives of Australia has undertaken to act as AGLS Maintenance Agency. This commitment involves guiding the further development, promotion and promulgation of the AGLS standard. The Archives convenes a cross-jurisdictional AGLS Working Group consisting of selected Commonwealth, State and Territory government experts and officials who have an interest in promoting online government resource discovery. This Working Group provides the National Archives with expert advice on ways in which the AGLS standard can be developed and improved. Such improvements will be reflected in the AGLS User Manual, which will continue to evolve for as long as AGLS is in use.

As AGLS Maintenance Agency the National Archives maintains an AGLS web site, pursues liaison and cooperation with the international Dublin Core and GILS communities and administers the registration of approved extensions to the AGLS standard.

¹⁴ Roberts, D. and M. Hoy, *Understanding Government Bureauspeak: Natural Language Searching and Government Thesauri* (www.naa.gov.au)