Version 2 of

"APPLICATION PROFILE FOR THE GOVERNMENT INFORMATION LOCATOR SERVICE (GILS)"

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STATUS of Version 2

This version has been approved by the Open Systems Environment Implementors Workshop/Special Interest Group on Library Applications (OIW/SIG-LA) as a replacement of the Implementors Agreement approved by the OIW in May, 1994. (Maintenance of the Profile has now been transferred to the Open Systems Environment Implementors Workshop/Special Interest Group on GILS.) The Application Profile is also referenced in Federal Information Processing Standard Publication (FIPS PUB) 192, now being republished as FIPS PUB 192-1.

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1. Introduction

This document describes an application profile for the Government Information Locator Service (GILS). The GILS Profile includes not only the specifications for ANSI/NISO Z39.50, the American National Standard for Information Retrieval Application Service Definition and Protocol Specification for Open Systems Interconnection (National Information Standards Organization, 1995) in the application but also other aspects of a GILS conformant server that are outside the scope of Z39.50. The GILS Profile provides the specifications for the overall GILS application relating to the GILS Core, which is a subset of all GILS Locator Records, and completely specifies the use of Z39.50 in this application.

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2. Background

The GILS is a response to the need for users to identify, locate, and access or acquire publicly available Federal information resources, including electronic information resources. Christian (1994) is the authoritative document providing an overview of GILS, its objectives, service requirements, and core requirements. According to Christian (1994), the GILS is an overall service and includes information and technology components as well as policy, regulation, people, etc. GILS is intended to help the public locate and access information.

The current GILS initiative builds upon a previous study, *Identifying and Describing Federal Information Inventory/Locator Systems: Design for Networked-Based Locators* (McClure, Ryan & Moen, 1992). That study, which was conducted for the Office of Management and Budget, the National Archives and Records Administration, and the General Services Administration, recommended that each agency establish a network-accessible locator that describes its information resources. The study also recommended that agencies use Z39.50 as the appropriate information retrieval protocol to achieve a distributed, standards-based Government Information Locator Service.

The development of the GILS Profile is documented in *Using Z39.50 in an Application for the Government Information Locator Service (GILS)* (McClure & Moen, 1994). The GILS Profile resulted from the work of a group comprising experts in Z39.50 implementations, system implementations, and information organization, and representatives of Federal agencies. The specifications included in the GILS Profile reflect the consensus of this group and input from a range of stakeholders.

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3. Scope

The GILS Profile fully specifies the use of ANSI/NISO Z39.50 by the GILS. In addition, the GILS Profile provides the specifications for the overall GILS application relating to the GILS Core including other aspects of GILS conformant servers that are outside the scope of Z39.50.

This version of the GILS Profile focuses on requirements for a GILS server operating in the Internet environment. GILS clients will be able to interconnect with any GILS server, and these clients will behave in

a manner that allows interoperability with the GILS server. Clients that support Z39.50 but do not implement the GILS Profile will be able to access GILS records with less than full GILS functionality.

The GILS Profile addresses many aspects of the GILS (e.g., intersystem interactions and information interchange) but does not specify user interface requirements, the internal structure of databases that contain GILS Locator Records, or search engine functionality.

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4. Field of Application

The GILS Profile supports search and retrieval of GILS Locator Records contained in GILS servers by users in the Internet environment.

The GILS Profile will be used by developers of GILS servers. It will also be used by client developers to understand expected behaviors of GILS servers. A GILS server accessed using Z39.50 in the Internet environment acts primarily as a pointer to information resources. Some of these information resources pointed to by GILS Locator Records, as well as the GILS server itself, may be available electronically through other communications protocols including the common Internet protocols that facilitate electronic information transfer such as remote login (Telnet), File Transfer Protocol (FTP), and electronic mail (SMTP/MIME). The use of these protocols or other communications paths is outside the scope of the GILS Profile.

Once connected to a GILS server, users supported by appropriate clients that understand the GILS Profile may navigate through single or multiple servers. GILS servers will support searching (i.e., accept a search query and return a result set or diagnostic messages) and may support browsing (i.e., accept a well-known search query and return a list of Locator Records in brief display format). Although the GILS Profile addresses GILS servers only, it is understood that clients have roles in the execution of these activities (e.g., browsing is also a client function in the sense of how it interprets and presents GILS data).

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5. References

The following list contains documents that contain provisions which, through reference in this text, constitute provisions of the GILS Profile. At the time of this publication, the editions indicated were valid. All documents are subject to revision, and parties to agreements based on this Profile are warned against automatically applying any more recent editions of the documents listed below, since the nature of references made by the Profile to such documents, is that they may be specific to a particular edition. In addition, this list contains other documents that can be consulted for further information, background, etc.

[1] American National Standards Institute. (1985). *American National Standard Z39.2-1985 Bibliographic Information Interchange* . New York: American National Standards Institute.

[2] Christian, Eliot. (1994, April 26). *Government Information Locator Service (GILS)* . Available on the Fedworld electronic bulletin board (703-321-8020) or by anonymous FTP (File Transfer Protocol) via the Internet at 130.11.48.107 as /pub/gils.doc (Microsoft Word for Windows format) or /pub/gils.txt (ASCII text format). See also <http://www.usgs.gov/gils>

[3] McClure, Charles R. & Moen, William E. (1994, May 7). *Using Z39.50 in an Application for the Government Information Locator Service (GILS).* Available <ftp://ftp.cni.org/pub/gils/profile/background.doc.txt> or <ftp://ftp.cni.org/pub/gils/profile/background.doc.ps>

[4] McClure, Charles R., Ryan, Joe & Moen, William E. Moen. (1992). *Identifying and Describing Federal Information Inventory/Locator Systems: Design for Networked-Based Locators* . 2 Vols. Bethesda, MD: National Audio Visual Center [Available from ERIC, document no. ED349031].

[5] *ANSI/NISO Z39.50-1995, Information Retrieval (Z39.50): Application Service Definition and Protocol Specification* . [For availability, see http://lcweb.loc.gov/z3950/agency]

[6] National Institute of Standards and Technology. (1992). *FIPS No. 173, Spatial Data Transfer Standard* (August 28, 1992). Gaithersburg, MD: National Institute of Standards and Technology.

[7] Office of Management and Budget. (1993). Circular No. A-130, "Management of Federal Information Resources" (58 *F.R.* 36068, July 2,1993).

[8] RFC 1729, Using Z39.50-1992 Directly over TCP. Available <ftp://ftp.loc.gov/pub/z3950/profiles/tcp.txt>

[9] RFC 1521, MIME (Multipurpose Internet Mail Extensions) Part One: Mechanisms for Specifying and Describing the Format of Internet Message Bodies.

[10] RFC 1522, MIME (Multipurpose Internet Mail Extensions) Part Two: Message Header Extensions for Non-ASCII Text.

[11] Uniform Resource Locators (URL): A Unifying Syntax for the Expression of Names and Addresses of Objects on the Network. (October 1993). [Internet Draft]. The latest URL draft is: <ftp://info.cern.ch/pub/www/doc/url7a.txt>

[12] Uniform Resource Names. (October 1993). [Internet Draft]. The latest URL draft is: <ftp://ds.internic.net/internet-drafts/draft-ietf-uri-resource-names-01.txt>

[13] *USMARC Format for Bibliographic Data* . Washington, DC: Library of Congress, Cataloging Distribution Service.

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6. Definitions

For purposes of this Profile, the following definitions apply.

Client: An initiating application. This application includes the Z39.50 origin.

Electronic Information Resource: Information resources that are maintained in electronic, digital format and may be accessed, searched, or retrieved via electronic networks or other electronic data processing technologies (e.g., CD-ROM).

GILS Core Elements: Certain elements and their usual structure are defined as part of the GILS Application Profile, although guidelines on customary usage may be published separately. In addition to the well-known GILS Core Elements, GILS locator records may contain any number of locally-defined elements or elements that are well-known in the context of other Z39.50 profiles.

Government Information Locator Service (GILS): A decentralized collection of locators and associated information services used by the public either directly or through intermediaries to find information.

Information Resource: Includes both information and information technology.

Interoperability: A condition that exists when the distinctions between information systems are not a barrier to accomplishing a task that spans multiple systems.

Locator Record: A collection of related data elements describing an information resource, the information available in the resource, and how to obtain the information.

Origin: The part of a client application that initiates a Z39.50 association and is the source of requests during the association.

Profile: The statement of a function(s) and the environment within which it is used, in terms of a set of one or more standards, and where applicable, identification of chosen classes, subsets, options, and parameters of those standards. A set of implementor agreements providing guidance in applying a standard interoperably in a specific limited context.

Registered Object: An object that is identified by a name-to-thing relationship in which the name is recorded by a registration authority to ensure that the names can be used unambiguously.

Server: An application that responds to an initiating application (i.e., a client). The application that includes the Z39.50 target.

Target: The part of an server application that accepts a Z39.50 association.

Uniform Resource Identifier (URI): A set of related standards for encoding resource location and identification information for electronic and other objects. Examples include Uniform Resource Locators (URLs) and Uniform Resource Names (URNs).

USMARC: An implementation of ANSI/NISO Z39.2, the American National Standard for Bibliographic Information Interchange. The USMARC format documents contain the definitions and content designators for the fields that are to be carried in records structured according to Z39.2. GILS records in USMARC format contain fields defined in *USMARC Format for Bibliographic Data* . This documentation is published by the Library of Congress.

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7. Z39.50 Specifications for GILS

This section details the required services available from Z39.50, describes an Attribute Set for searching, Element Sets Names by which the server presents some or all the elements (defined in the Schema) of the Locator Records, and prescribes the Record Syntaxes to be supported by GILS servers for the transfer of Locator Records.

7.1. Version

GILS clients and servers support Z39.50 Version 2 as specified in Z39.50-1995. GILS requires support of various objects, listed in 7.2.

7.2. GILS Objects

The following object identifier (OID) is assigned to the Z39.50 standard:

{iso (1) member-body (2) US (840) ANSI-standard-Z39.50 (10003)}

This OID is abbreviated as: ANSI-standard-Z39.50.

Several object classes are assigned at the level immediately subordinate to ANSI-standard-Z39.50, including:

3 = attribute set definitions

4 = diagnostic definitions

5 = record syntax definitions

13 = database schema definitions

14 = tagSet definitions

GILS requires support of the following objects:

GILS attribute set	{ANSI-standard-Z39.50 3 5 }
Bib-1 diagnostic set	{ANSI-standard-Z39.50 4 1}
USMARC record syntax	{ANSI-standard-Z39.50 5 10}
SUTRS record syntax	{ANSI-standard-Z39.50 5 101}
GRS-1 record syntax	{ANSI-standard-Z39.50 5 105}
GILS schema	{ANSI-standard-Z39.50 13 2}
tagSet-M	{ANSI-standard-Z39.50 14 1}
tagSet-G	{ANSI-standard-Z39.50 14 2}

The tagSet OID for the GILS tagSet is 1.2.840.10003.14.4.

7.3. Communication Services

When Transmission Control Protocol (TCP) is used as the transport service, the specification for use of TCP is found in RFC 1729; Using Z39.50-1992 Directly over TCP." The use of other communication services is not yet defined.

7.4. Z39.50 Services

There are three Z39.50 (Version 2) services that are required for conformance: Init, Search, and Present. No additional services are required for conformance to the GILS Profile. Other Z39.50 services, however, may be provided optionally by servers and used by clients.

Standard Z39.50 Init Service negotiation procedures control the use of all services.

7.4.1. Search

The GILS application will support Z39.50 Type 1 queries which are general purpose Boolean query structures.

7.4.1.1. Attribute Set

The GILS Attribute Set is a superset of the Bib-1 Attribute set and consists of all Bib-1 Attributes and additional Use Attributes that are defined for GILS elements (see Annex A). The newly defined GILS Use Attributes are well-known and correspond semantically to GILS Core Elements. The GILS Attribute Set is a registered object.

GILS servers must support a limited number of Use Attributes as follows. (Note: The Use Attribute name is listed followed by the Use Attribute number and the corresponding GILS element.)

- Use Attributes: Title (4, Title); Local Number (12; Local Control Number); Author-name corporate

(1005; Originator); Date/Time Last Modified (1012; Date of Last Modification); Record Source (1019; Record Source); Distributor Name (2001; Distributor Name); Subject Terms Controlled (2002; Subject Terms Controlled); Local Subject Index (29; Subject Terms Uncontrolled); Any (1016), Anywhere (1035)
- Structure Attributes: Word (2), URx (104), Date (5), Word List (6)
- Relation Attributes: Less Than (1), Less Than or Equal (2), Equal (3), Greater Than or Equal (4), Greater Than (5), Not Equal (6)

GILS servers should never return any of these four diagnostic messages: "Unsupported Use Attribute," "Unsupported Structure Attribute," "Unsupported Relation Attribute," or "Unsupported Attribute Type" when a query includes the combinations of required GILS Attributes listed in Annex A.

GILS servers may optionally support a spatial search. For this purpose, the following attributes are available:

- Use Attributes: West Bounding Coordinate (2038); East Bounding Coordinate (2039); North Bounding Coordinate (2040); South Bounding Coordinate (2041)
- Structure Attribute: Coordinate (200)

A server may support many different sets of records, only some of which might include some of the GILS Core Elements. When a query includes a Use Attribute which does not occur in the particular set of records to be searched, the server should not fail the search but should locate no records for that Use Attribute.

7.4.1.2. Well-known Search

To provide support for browsing GILS Locator Records, there is a well-known search consisting of the following GILS Attributes: Use Attribute: Local Number; Structure Attribute: URX; and a term of zero length. GILS servers that support browsing of records will create a result set of one or more GILS Locator Records that provide the necessary information to allow clients to offer menu-like displays of GILS Locator Records or other information and information resources.

The "Browse" in the GILS context involves only the Search and Present Services of Z39.50. "Browse" is used informally in the GILS Profile, and it is not related nor should it be confused with the Browse Facility or Scan Service of Z39.50.

7.4.2. Retrieval

This section describes the components and procedures used by Z39.50 to return records in response to a query.

7.4.2.1. Schema

The GILS Profile specifies a GILS Schema (see Annex D for the Schema). The GILS Schema is a registered object. The schema describes and/or defines tagSets used and an abstract record structure for a Locator Record. A schema in Z39.50 can be modified and may evolve over time, and it is reasonable to expect the GILS Schema will evolve.

The GILS Schema uses elements from tagSet-M, tagSet-G and defines in a GILS tagSet additional elements as necessary. The GILS Profile specifies tagTypes to identify tagSet-M elements (tagType = 1), tagSet-G elements (tagType =2), and the elements defined by the GILS tagSet (tagType = 4). Another tagType (tagType=3) is used to identify arbitrary string tags for locally defined elements.

The GILS tagSet element numbering begins with number 1. Elements can be nested and the tagging notation (i.e., the tag path) will reflect the nesting.

All well-known GILS Schema elements have assigned numeric tags. String-tags (i.e., text) may be used in the GILS Schema to label those elements that are not well-known (i.e., locally defined).

7.4.2.2. Element Sets Names

GILS servers will support Element Sets Names. GILS servers will interpret the use of the Element Set Names required by the GILS Profile to identify the following elements from the GILS Schema:

- The primitive element set name 'G' contains at least Title, Control Identifier, Originator, Local Control Number and Cross Reference
- Support for primitive element set name 'F', is required by the Z39.50 standard, however, its usage is not addressed by this profile, and its use, within this profile, is discouraged.

The server should include in a retrieved record all of the elements specified by the element set name for which there is data available in the database record and which can be encoded in the requested record syntax (e.g., some types of locally defined binary data may not be encodable in a USMARC or SUTRS record).

7.4.2.3. Record Syntaxes

GILS servers are required to support the following three record syntaxes:

- USMARC -- an implementation of ANSI/NISO Z39.2 and maintained by the Library of Congress
- Generic Record Syntax (GRS-1) -- defined in Z39.50
- Simple Unstructured Text Record Syntax (SUTRS) -- defined in Z39.50.

Annex B contains a mapping of Core Elements to USMARC for use in the USMARC record syntax. However, since the data transformation is not fully reversible and requires interpretation, the record source is responsible for encoding the USMARC record(s).

The data in GILS Locator Records do not always map clearly into USMARC records, particularly when agencies add their own locally defined fields to the GILS Locator Record. This means that construction of USMARC records is subject to local interpretation. Therefore, GILS Locator Records in USMARC format obtained from other than the original record source should be considered non-definitive. The original source of the GILS Locator Record can be identified by examining the Original Control Identifier field of the record.

For interchange, GRS-1 records are to be treated as the complete and canonical representation; SUTRS and USMARC should be viewed as derivative records from these canonical representations and as such are not as complete or precise.

7.5. Preferred Display Format for Use with SUTRS

The GILS Profile recommends a preferred display format for SUTRS records (see Annex C for the recommended display format). For the SUTRS records, formatting instructions for a preferred display format is a concern of the server.

When the target transfers a GILS record using the SUTRS record syntax, it will encode the GILS record formatted according to the preferred display format, so that the client may present the record directly, without processing. For SUTRS, however, the client should not expect to be able to parse the record to obtain any individual GILS elements.

When the client presents a GILS record formatted by the server using the USMARC or GRS record syntax, it is recommended that the client consider the SUTRS suggested display layout in formatting the received record for presentation to the human end user.

7.6. Diagnostic Messages

The GILS application will use Diagnostic Set Bib-1.

8. Data Elements in the Locator Records

GILS Locator Records consist of a number of GILS Core Elements that contain information to identify and describe Federal information resources. The GILS Core Elements are defined in Annex E.

Annex A

Attributes

Recognized and Supported Combinations of Attributes

Use Attribute	Structure Attributes	Relation Attributes
Title	Word, Word List	Equal
Local Number	Word, Word List	Equal
Author-name corporate	Word, Word List	Equal
Date/Time Last Modified	Date	Greater Than, Equal
Record Source	Word, Word List	Equal
Distributor Name	Word, Word List	Equal
Index Terms--Controlled	Word, Word List	Equal
Local Subject Index	Word, Word List	Equal
Any	Word, Word List	Equal
Anywhere	Word, Word List	Equal
West Bounding Coordinate	Coordinate	Less Than, Less Than or Equal, Equal, Greater Than or Equal, Greater Than, Not Equal
East Bounding Coordinate	Coordinate	Less Than, Less Than or Equal, Equal, Greater Than or Equal, Greater Than, Not Equal
North Bounding Coordinate	Coordinate	Less Than, Less Than or Equal, Equal, Greater Than or Equal, Greater Than, Not Equal
South Bounding Coordinate	Coordinate	Less Than, Less Than or Equal, Equal, Greater Than or Equal, Greater Than, Not Equal

As stated in 7.3.1.1, GILS servers are required to support a minimal set of Use Attributes. These are listed first. In the cases where a Bib-1 Use Attribute's Name is used, the corresponding GILS Core Element name appears in parentheses.

Required Use Attributes

Use #	Attribute Name
4	Title
12	Local Number (Local Control Number)
29	Local Subject Index (Subject Terms Uncontrolled)
1005	Author-name corporate (Originator)
1012	Date/Time Last Modified (Date of Last Modification)
1016	Any
1019	Record Source
1035	Anywhere
2001	Distributor Name
2002	Index Terms -- Controlled (Subject Terms Controlled)

Available Use Attributes

Use #	Attribute Name
31	Date of Publication
54	Code-language (Language of Resource)
59	Place Publication (Place of Publication)
62	Abstract
1003	Author (Contributor)
1007	Identifier-Standard (Control Identifier)
1031	Material-type (Medium)
2000	Distributor
2003	Purpose
2004	General Access Constraints
2005	Use Constraints
2006	Distributor Organization
2007	Distributor Street Address
2008	Distributor City
2009	Distributor State or Province
2010	Distributor Zip or Postal Code
2011	Distributor Country
2012	Distributor Network Address
2013	Distributor Hours of Service
2014	Distributor Telephone
2015	Distributor Fax
2016	Resource Description
2017	Order Information

2018	Technical Prerequisites
2019	Available Time Structured
2020	Available Time Textual
2021	Linkage
2022	Linkage Type
2023	Contact Name
2024	Contact Organization
2025	Contact Street Address
2026	Contact City
2027	Contact State or Province
2028	Contact Zip or Postal Code
2029	Contact Country
2030	Contact Network Address
2031	Contact Hours of Service
2032	Contact Telephone
2033	Contact Fax
2034	Agency Program
2035	Sources of Data
2036	Subject Thesaurus
2037	Methodology
2038	West Bounding Coordinate
2039	East Bounding Coordinate
2040	North Bounding Coordinate
2041	South Bounding Coordinate
2042	Place Keyword
2043	Place Keyword Thesaurus
2044	Time Period Structured
2045	Time Period Textual
2046	Cross Reference Title
2047	Cross Reference Linkage
2049	Original Control Identifier
2050	Supplemental Information
2051	Record Review Date
2052	Originator Dissemination Control
2053	Security Classification Control
2054	Cost
2055	Cost Information
2056	Schedule Number

2057	Controlled Subject Index
2058	Uncontrolled Term
2059	Spatial Domain
2060	Bounding Coordinates
2061	Place
2062	Time Period
2063	Availability
2064	Order Process
2065	Available Time Period
2066	Access Constraints
2067	Point of Contact
2068	Cross Reference
2069	Available Linkage
2070	Cross Reference Relationship
2071	Language of Record
2072	Beginning Date
2073	Ending Date
2074	Controlled Term

Annex B

GILS Core Element to USMARC Mapping

This Annex provides a mapping from GILS Core Elements to USMARC for use by GILS servers. Some of these data elements consist of two or more subelements, and this relationship is noted by the indentation.

Implementors should consult the authoritative documentation on USMARC found in *USMARC Format for Bibliographic Data* . The document is available from the Cataloging Distribution Service at the Library of Congress. A full description of the USMARC fields and available subfields within each field is in that document.

In addition to the variable length fields listed in the mapping, a USMARC record will also include a Leader and field 008: Fixed-Length Data Elements. Certain character positions in each of these fixed length fields of a USMARC record will need to be coded specifically for GILS, although most will generate default values. The following describes these fixed fields and suggests values for them (or parts of them):

Leader: A fixed field comprising the first 24 character positions (00-23) of each record that provides information for the processing of the record. For GILS records, the following character positions are specifically relevant:

- Character Position 06: Type of record
  - If resource is an electronic information resource, use code "m"
  - If resource is geospatial, use code "e"
  - All others use code "a"
- Character Position 18 -- Descriptive cataloging form
  - Use Value: # [i.e., blank] (Non-ISBD) to indicate when International Standard Bibliographic

Description is not followed.

008 Fixed Length Data Elements: Forty character positions (00-39) containing positionally-defined data elements that provide coded information about the record as a whole or about special bibliographic aspects of the item being cataloged. For GILS records, the following character positions are used:

- Character positions 00-05: Date the USMARC record was created or converted from a GILS record (formatted as YYMMDD)
- Character positions 07-10: Date of Publication (YYYY portion from Date Of Publication Structured)
- Other character positions can default to fill characters (ASCII 7C)

042$a Authentication Code

Value:
gils

GILS Data Elements and Corresponding USMARC Tags

GILS Data Element	USMARC Tag
Title	245$a
Originator	720$a with $e=author
Contributor	720$a
Date of Publication	260$c
Place of Publication	260$a
Language of Resource	041$a
Abstract	520$a
Controlled Subject Index	
Subject Thesaurus	650 1st indicator/ 650$2
Subject Terms Controlled	
Controlled Term	650$a
Subject Terms Uncontrolled	
Uncontrolled Term	653$a
Spatial Domain	
Bounding Coordinates	255$c
West Bounding Coordinate	034$d
East Bounding Coordinate	034$e
North Bounding Coordinate	034$f
South Bounding Coordinate	034$g
Place	
Place Keyword Thesaurus	651$2
Place Keyword	651$a
Time Period	

Time Period Structured	045$b
Time Period Textual	513$b
Availability	
Medium	655$a with $2=local
Distributor	if no subfields 260$b, otherwise 270 1st indicator=1
Distributor Name	270$p
Distributor Organization	270$q
Distributor Street Address	270$a
Distributor City	270$b
Distributor State or Province	270$c
Distributor Zip or Postal Code	270$e
Distributor Country	270$d
Distributor Network Address	270$m
Distributor Hours of Service	270$r
Distributor Telephone	270$k
Distributor Fax	270$l
Resource Description	037$f
Order Process	037$n
Order Information	037$n
Cost	037$c
Cost Information	037$n
Technical Prerequisites	538$a
Available Time Period	
Available Time Structured	045$b
Available Time Textual	513$b
Available Linkage	
Linkage Type	856$q
Linkage	856$u
Sources of Data	786$n
Methodology	567$a
Access Constraints	506$a
General Access Constraints	506$a
Originator Dissemination Control	357$g
Security Classification Control	355$a
Use Constraints	540$a
Point of Contact	if no subfields 270$z, otherwise 270 1st Indicator=2
Contact Name	270$p
Contact Organization	270$q

Contact Street Address	270$a
Contact City	270$b
Contact State or Province	270$c
Contact Zip or Postal Code	270$e
Contact Country	270$d
Contact Network Address	270$m
Contact Hours of Service	270$r
Contact Telephone	270$k
Contact Fax	270$l
Supplemental Information	500$a
Purpose	521$a
Agency Program	545$a
Cross Reference	787$n
Cross Reference Title	787$t
Cross Reference Relationship	787$n 1st indicator =0
Cross Reference Linkage	
Linkage Type	787$h
Linkage	787$o
Schedule Number	583$b
Control Identifier	001
Original Control Identifier	035$a
Record Source	040$a
Language of Record	040$b
Date of Last Modification	005
Record Review Date	583$c

USMARC Tags and Field Names
(from USMARC Format for Bibliographic Data)

Where name for field and subfield are the same, only the subfield name is given.

USMARC Tag, Subfield	Field Name
001	Control Number
005	Date and Time of Latest Transaction
034	Coded Cartographic Mathematical Data
034$d	Coordinates -- westernmost longitude
034$e	Coordinates -- easternmost longitude
034$f	Coordinates -- northernmost latitude

034$g	Coordinates -- southernmost latitude
035$a	System Control Number
037	Source of Acquisition
037$c	Terms of availability
037$f	Form of issue
037$n	Note
040	Cataloging Source
040$a	Original cataloging agency
040$b	Language of cataloging
041$a	Code-language
042$a	Authentication Code
045$b	Time Period--Structured
245	Title Statement
245$a	Title
255	Cartographic Mathematical Data
255$c	Statement of coordinates
260$a	Place of Publication
260$b	Publication, Distribution, Etc.--Name of publisher, distribution, etc.
260$c	Date of Publication
270	Address
270 1st Indicator	Type of address
270$a	Address
270$b	City
270$c	State or province
270$d	Country
270$e	Postal code
270$k	Telephone number
270$l	Fax number
270$m	Electronic mail address
270$p	Contact person
270$q	Title of contact person
270$r	Hours
270$z	Address/Public Note
355$a	Security Classification Control
357	Originator Dissemination Control
357$g	Other restrictions
500$a	General Note
506	Restrictions on Access Note

506$a	Terms governing access
513	Type of Report and Period Covered Note
513$b	Period covered
520$a	Summary, Etc. Note
521$a	Target Audience Note
538$a	System Details Note
540$a	Terms Governing Use and Reproduction Note
545$a	Biographical or Historical Note
567$a	Methodology Note
583	Action Note
583$b	Action identification
583$c	Time of action
650	Subject Added Entry -- Topical Term
650	1st indicator Level of subject
650$2	Source of heading or term
650$a	Topical term or geographic name as entry element
651	Subject Added Entry -- Geographic Name
651$2	Source of heading or term
651$a	Topical term or geographic name as entry element
653	Index Term -- Uncontrolled
653$a	Uncontrolled term
655$a	Index Term -- Genre/Form
710	Added Entry -- Corporate Name
710$a	Name
720	Added Entry -- Uncontrolled Name
720$a	Name
765	Original language (when indicated by value of Cross Reference Relationship)
767	Translation (when indicated by value of Cross Reference Relationship)
770	Supplement/special issue (when indicated by value of Cross Reference Relationship)
772	Parent (when item is a supplement as indicated by value of Cross Reference Relationship)
773	Host item (when item is a part as indicated by value of Cross Reference Relationship)
774	Component item (when indicated by value of Cross Reference Relationship)
775	Other edition (when indicated by value of Cross Reference Relationship)
776	Additional physical form (when indicated by value of Cross Reference Relationship)
777	Issued with (when indicated by value of Cross Reference Relationship)
780	Preceding entry (when indicated by value of Cross Reference Relationship)

785	Succeeding entry (when indicated by value of Cross Reference Relationship)
786	Data Source Entry
786$n	Note
787	Nonspecific Relationship Entry
787$h	Nonspecific Relationship Entry--Physical description
787$n	Nonspecific Relationship Entry--Note
787$o	Nonspecific Relationship Entry--Other identifier
787$t	Title
787$w	Record Control Number
856	Electronic Location and Access
856$q	Electronic Location and Access--File transfer mode
856$u	Uniform Resource Locator
856$z	Public note

Annex C

Preferred Display Format for GILS Records

GILS servers will transfer records in three record syntaxes:

- USMARC
- Generic Record Syntax (GRS)
- Simple Unstructured Text Record Syntax (SUTRS).

In SUTRS, the formatting of the record contents is handled by the server, and the client receives a record devoid of structure. In USMARC and GRS, the record, whose structure is defined by the record syntax, is passed from the target to an orgin, and the client software has more flexibility in processing the record contents for display.

The recommended guidelines in this Annex describe how records should be displayed, whether formatted by the server or the client (but this does not preclude display formats in addition to the Preferred Display Format).

Record Organization:

The record should be organized so that the elements first viewed by the user provide adequate information to either choose or eliminate the record from further consideration. These elements are: Title, Originator, Contributor, Date of Publication, Place of Publication, Language of Resource, Abstract, Controlled Subject Index, and Subject Terms Uncontrolled.

Next in the order of presentation are elements that give detailed information about the information resource being described: Spatial Domain, Time Period, Availability, Sources of Data, Methodology, Access Constraints, Use Constraints, Point of Contact, and Supplemental Information.

The elements describing the reason for the existence of the data are next: Purpose and Agency Program.

Related information resources are listed next in the element: Cross Reference.

The final elements provide bibliographic control information: Schedule Number, Control Identifier, Original Control Identifier, Record Source, Language of Record, Date of Last Modification, and Record Review Date.

General Instructions for Formatting Full Element Set Name Records:

All displayable elements are to be labelled with the full title of the field followed by a colon. Label mnemonics should only be used in situations where the user can ask for an explanation of the mnemonic. Mnemonics should not be used in SUTRS records, since it should be assumed that the client knows nothing about the server and is incapable of interpreting the mnemonics.

The subelements of constructed elements (i.e., locally defined fields, Availability, Spatial Domain, etc.) should be indented to reflect their association and structure within a well-structured element. Labels on subelements can eliminate the redundant leading parts (e.g., the word Available on the Availability subelements).

In the Controlled Subject Index element, the Subject Thesaurus subelement can be presented in parentheses, followed by the Subject Terms. Multiple Subject Terms should be separated by a semi-colon and a space (e.g., Controlled Subject Index (MeSH): Kidney; Kidney Disease). Alternatively, the Subject Thesaurus and Subject Terms can be indented under the Controlled Subject Index label, as is done with the other well-structured fields. Uncontrolled Subject Terms should be separated by a semi-colon and a space.

Display Format for Brief Element Set Name Records:

Brief Records consist of the Title, Control Identifier, Originator, and Local Control Number fields. For display purposes, the Control Identifier and Local Control Number can be omitted. Brief Records may be formatted to fit on a single line. This may require that that one or both of the displayed fields will be truncated. Truncation can be indicated with elipsis (...).

Display Format for G Element Set Name Records:

G Records consist of Brief Record elements and additionally, the Cross Reference element. For display purposes, the guidelines for Full Records should be followed.

Annex D

GILS Schema

The GILS Schema defines a set of numeric tags for use with the Generic Record Syntax (GRS). The GILS Schema defines a GILS tagSet that associates a numeric tag with one or more GILS Core Elements.

Some GILS Core elements correspond to tags already defined in tagSet-M and tagSet-G, and these tags are used to identify GILS Core elements in the Abstract Record Structure. When the tagType is 1, the tag value is from tagSet-M. When the tagType is 2, the tag value is from tagSet-G. When the tagType is 3, the tag value is an arbitrary string tag. When the tagType is 4, the tag value is from the GILS tagSet.

There are two general classes of schema elements in the GILS Schema:

1. Primitive -- these elements cannot have locally defined subelements
2. Constructed -- these elements have one or more subelements any of which may be well-defined or target-defined; in the latter case, these locally defined subelements are identified with string tags

This Annex first presents the GILS tagSet that identifies the element, its unique tag, and a recommended datatype. This is followed by the GILS Abstract Record Structure that shows the full tag path for each element.

GILS tagSet

Tag	Element	Recommended Datatype
1	controlIdentifier	InternationalString
2	streetAddress	InternationalString
3	city	InternationalString
4	stateOrProvince	InternationalString
5	zipOrPostalCode	InternationalString
6	hoursOfService	InternationalString
7	resourceDescription	InternationalString
8	technicalPrerequisites	InternationalString
9	westBoundingCoordinate	intUnit
10	eastBoundingCoordinate	intUnit
11	northBoundingCoordinate	intUnit
12	southBoundingCoordinate	intUnit
13	placeKeyword	InternationalString
14	placeKeywordThesaurus	InternationalString
15	beginningDate	GeneralizedTime
16	timePeriodTextual	InternationalString
17	linkage	InternationalString
18	linkageType	InternationalString
19	recordSource	InternationalString
20	controlledTerm	InternationalString
21	subjectThesaurus	InternationalString
22	uncontrolledTerm	InternationalString
23	originalControlIdentifier	InternationalString
24	recordReviewDate	GeneralizedTime
25	generalAccessConstraints	InternationalString
26	originatorDisseminationControl	InternationalString
27	securityClassificationControl	InternationalString
28	orderInformation	InternationalString
29	cost	Boolean
30	costInformation	InternationalString
31	scheduleNumber	InternationalString
32	languageOfResource	InternationalString
33	medium	InternationalString
34	languageOfRecord	InternationalString

35	relationship	InternationalString
36	endingDate	GeneralizedTime

NOTE: The element "wellKnown" from tagSet-M (1,19) and referred to below has the following definition:

When an element is defined to be "structured into locally defined elements," the target may use this tag (i.e., wellKnown) in lieu of, or along with, locally defined tags. For example, an element named 'title' might be described to be "locally structured." The target might present the element structured into the following subelements: 'wellKnown,' 'spineTitle,' and 'variantTitle,' where the latter two tags are target defined. In this case, 'wellKnown' is assumed to mean 'title.'

51
purpose (Constructed as follows)

This element may include the element wellKnown and may also include locally defined elements.

52
originator (Constructed as follows)

This element may include the element wellKnown and may also include locally defined elements.

53
accessConstraints (Constructed as follows)

This element may include the element wellKnown and any of the following as well as locally defined elements: generalAccessConstraints, orginatorDisseminationControl, securityClassificationControl.

54
useConstraints (Constructed as follows)

This element may include the element wellKnown and may also include locally defined elements.

55
orderProcess (Constructed as follows)

This element may include the element wellKnown and any of the following as well as locally defined elements: orderInformation, cost, costInformation

56
agencyProgram (Constructed as follows)

This element may include the element wellKnown and may also include locally defined elements.

57
sourcesOfData (Constructed as follows)

This element may include the element wellKnown and may also include locally defined elements.

58
methodology (Constructed as follows)

This element may include the element wellKnown and may also include locally defined elements.

59
supplementalInformation (Constructed as follows)

This element may include the element wellKnown and may also include locally defined elements.

70
availability (Constructed as follows)

This element may include any of the following as well as locally defined elements: medium, distributor, resourceDescription, orderProcess, technicalPrerequisites, timePeriod, availableLinkage.

71
spatialDomain (Constructed as follows)

This element may include any of the following as well as locally defined elements: boundingCoordinates, place.

90
distributor (Constructed as follows)

This element may include the element wellKnown and any of the following as well as locally defined elements: name, organization, streetAddress, city, stateOrProvince, zipOrPostalCode, country, networkAddress, hoursOfService, telephone, fax.

91
boundingCoordinates (Constructed as follows)

This element may include any of the following as well as locally defined elements: westBoundingCoordinate, eastBoundingCoordinate, northBoundingCoordinate, southBoundingCoordinate.

92
place (Constructed as follows)

This element may include any of the following as well as locally defined elements: placeKeyword, placeKeywordThesaurus

93
timePeriod (Constructed as follows)

This element may include any of the following as well as locally defined elements: timePeriodTextual, timePeriodStructured.

94
pointOfContact (Constructed as follows)

This element may include the element wellKnown and any of the following as well as locally defined elements: name, organization, streetAddress, city, stateOrProvince, zipOrPostalCode, country, networkAddress, hoursOfService, telephone, fax.

95
controlledSubjectIndex (Constructed as follows)

This element may include any of the following as well as locally defined elements: subjectThesaurus, subjectTermsControlled.

96
subjectTermsControlled (Constructed as follows)

This element may include any of the following as well as locally defined elements: controlledTerm.

97
subjectTermsUncontrolled (Constructed as follows)

This element may include any of the following as well as locally defined elements: uncontrolledTerm.

98
crossReference (Constructed as follows)

This element may include any of the following as well as locally defined elements: title, relationship, crossReferencelinkage.

99
availableLinkage (Constructed as follows)

This element may include any of the following as well as locally defined elements: linkage, linkageType.

100
crossReferenceLinkage (Constructed as follows)

This element may include any of the following as well as locally defined elements: linkage, linkageType.

101
timePeriodStructured (Constructed as follows)

This element may include any of the following elements: beginningDate, endingDate.

102
availableTimeStructured (Constructed as follows)

This element may include any of the following elements: beginningDate, endingDate.

GILS Abstract Record Structure

NOTE: The element "bodyOfDisplay" in tagSet-G (2,9) may be used by the target to combine into this single element (i.e., bodyOfDisplay) one or more of the elements from the following abstract record structure into a display format, for display.

Tag path	Element: Repeatable/Not Repeatable
(1,10)	rank: Not Repeatable
(1,12)	url: Not Repeatable
(1,14)	localControlNumber: Not Repeatable
(2,1)	title: Not Repeatable
(4,52)	originator: Repeatable
(2,2)	contributor: Repeatable
(2,4)	dateOfPublication: Not Repeatable
(2,3)	placeOfPublication: Not Repeatable
(4,32)	languageOfResource: Repeatable

(2,6)	abstract: Not Repeatable
(4,95)	controlledSubjectIndex: Repeatable
(4,95)/(4,21)	subjectThesaurus: Not Repeatable
(4,95)/(4,96)	subjectTermsControlled: Not Repeatable
(4,95)/(4,96)/(4,20)	controlledTerm: Repeatable
(4,97)	subjectTermsUncontrolled: Not Repeatable
(4,97)/(4,22)	uncontrolledTerm: Repeatable
(4,71)	spatialDomain: Not Repeatable
(4,71)/(4,91)	boundingCoordinates: Not Repeatable
(4,71)/(4,91)/(4,9)	westBoundingCoordinate: Not Repeatable
(4,71)/(4,91)/(4,10)	eastBoundingCoordinate: Not Repeatable
(4,71)/(4,91)/(4,11)	northBoundingCoordinate: Not Repeatable
(4,71)/(4,91)/(4,12)	southBoundingCoordinate: Not Repeatable
(4,71)/(4,92)	place: Repeatable
(4,71)/(4,92)/(4,14)	placeKeywordThesaurus: Not Repeatable
(4,71)/(4,92)/(4,13)	placeKeyword: Repeatable
(4,93)	timePeriod: Repeatable
(4,93)/(4,16)	timePeriodTextual: Not Repeatable
(4,93)/(4,101)	timePeriodStructured: Repeatable
(4,93)/(4,101)/(4,15)	beginningDate: Not Repeatable
(4,93)/(4,101)/(4,36)	endingDate: Not Repeatable
(4,70)	availability: Repeatable
(4,70)/(4,33)	medium: Not Repeatable
(4,70)/(4,90)	distributor: Not Repeatable
(4,70)/(4,90)/(2,7)	distributorName: Not Repeatable
(4,70)/(4,90)/(2,10)	distributorOrganization: Not Repeatable
(4,70)/(4,90)/(4,2)	distributorStreetAddress: Not Repeatable
(4,70)/(4,90)/(4,3)	distributorCity: Not Repeatable
(4,70)/(4,90)/(4,4)	distributorStateOrProvince: Not Repeatable
(4,70)/(4,90)/(4,5)	distributorZipOrPostalCode: Not Repeatable
(4,70)/(4,90)/(2,16)	distributorCountry: Not Repeatable
(4,70)/(4,90)/(2,12)	distributorNetworkAddress: Repeatable
(4,70)/(4,90)/(4,6)	distributorHoursofService: Repeatable
(4,70)/(4,90)/(2,14)	distributorTelephone: Repeatable
(4,70)/(4,90)/(2,15)	distributorFax: Repeatable
(4,70)/(4,7)	resourceDescription: Repeatable
(4,70)/(4,55)	orderProcess: Not Repeatable
(4,70)/(4,55)/(4,28)	orderInformation: Not Repeatable

(4,70)/(4,55)/(4,29)	cost: Not Repeatable
(4,70)/(4,55)/(4,30)	costInformation: Not Repeatable
(4,70)/(4,8)	technicalPrerequisites: Not Repeatable
(4,70)/(4,93)	availableTimePeriod: Repeatable
(4,70)/(4,93)/(4,16)	availableTimeTextual: Not Repeatable
(4,70)/(4,93)/(4,102)	availableTimeStructured: Repeatable
(4,70)/(4,93)/(4,102)/(4,15)	beginningDate: Not Repeatable
(4,70)/(4,93)/(4,102)/(4,36)	endingDate: Not Repeatable
(4,70)/(4,99)	availableLinkage: Repeatable
(4,70)/(4,99)/(4,18)	linkageType: Not Repeatable
(4,70)/(4,99)/(4,17)	linkage: Repeatable
(4,57)	sourcesOfData: Not Repeatable
(4,58)	methodology: Not Repeatable
(4,53)	accessConstraints: Not Repeatable
(4,53)/(4,25)	generalAccessConstraints: Not Repeatable
(4,53)/(4,26)	originatorDisseminationControl: Not Repeatable
(4,53)/(4,27)	securityClassificationControl: Not Repeatable
(4,54)	useConstraints: Not Repeatable
(4,94)	pointOfContact: Not Repeatable
(4,94)/(2,7)	contactName: Not Repeatable
(4,94)/(2,10)	contactOrganization: Not Repeatable
(4,94)/(4,2)	contactStreetAddress: Not Repeatable
(4,94)/(4,3)	contactCity: Not Repeatable
(4,94)/(4,4)	contactStateOrProvince: Not Repeatable
(4,94)/(4,5)	contactZipOrPostalCode: Not Repeatable
(4,94)/(2,16)	contactCountry: Not Repeatable
(4,94)/(2,12)	contactNetworkAddress: Repeatable
(4,94)/(4,6)	contactHoursOfService: Repeatable
(4,94)/(2,14)	contactTelephone: Repeatable
(4,94)/(2,15)	contactFax: Repeatable
(4,59)	supplementalInformation: Not Repeatable
(4,51)	purpose: Not Repeatable
(4,56)	agencyProgram: Not Repeatable
(4,98)	crossReference: Repeatable
(4,98)/(2,1)	crossReferenceTitle: Not Repeatable
(4,98)/(4,35)	crossReferenceRelationship: Repeatable
(4,98)/(4,100)	crossReferenceLinkage: Repeatable
(4,98)/(4,100)/(4,18)	linkageType: Not Repeatable

(4,98)/(4,100)/(4,17)	linkage: Repeatable
(4,31)	scheduleNumber: Not Repeatable
(4,1)	controlIdentifier: Not Repeatable
(4,23)	originalControlIdentifier: Not Repeatable
(4,19)	recordSource: Not Repeatable
(4,34)	languageOfRecord: Not Repeatable
(1,16)	dateOfLastModification: Not Repeatable
(4,24)	recordReviewDate: Not Repeatable

Annex E

GILS Core Elements

Definitions of GILS Core Elements and their usual structure are here made part of the GILS Application Profile. Guidelines on customary usage, such as the wording of specific elements and which elements are regarded as mandatory in specific contexts, may be found in separate documents. For example, the U.S. National Archives and Records Administration publishes for U.S. Federal agencies the document "Guidelines for the Preparation of GILS Core Entries", available in HTML format at <http://www.dtic.mil/gils/documents/naradoc/>.

Implementors are reminded that in addition to the well-known GILS Core Elements, GILS locator records may contain any number of locally-defined elements. Some such elements may be well-known in the context of other Z39.50 profiles (e.g., WAIS, GEO) also supported by a particular GILS-compliant server.

Title (Not Repeatable) This element conveys the most significant aspects of the referenced resource and is intended for initial presentation to users independently of other elements. It should provide sufficient information to allow users to make an initial decision on likely relevance. It should convey the most significant information available, including the general topic area, as well as a specific reference to the subject.

Originator (Repeatable) This element identifies the information resource originator.

Contributor (Repeatable) This element is used if there are names associated with the resource in addition to the Orginator, such as personal author, corporate author, co-author, or a conference or meeting name.

Date Of Publication (Not Repeatable) The discrete creation date in which the described resource was published or updated, though not for use on resources that are published continuously such as dynamic databases. Date of Publication Textual may also provide additional information such as when the resource was originally published. This element may be expressed in one of two forms:

- **Date Of Publication Structured** Date described using the ISO 8601 prescribed structure (fixed 8 characters, YYYYMMDD).
- **Date Of Publication Textual** Date described textually.

Place of Publication (Not Repeatable) The city or town where the described resource was published. May also include country if location of city is not well known.

Language of Resource (Repeatable) This element indicates the language(s) of the described resource as represented by the MARC three character alpha code. If a resource is multilingual, repeat this element for each applicable language."

Abstract (Not Repeatable) This element presents a narrative description of the information resource. This

narrative should provide enough general information to allow the user to determine if the information resource has sufficient potential to warrant contacting the provider for further information.

Controlled Subject Index (Repeatable) This element is a grouping of subelements that together provide any controlled vocabulary used to describe the resource and the source of that controlled vocabulary:

- **Subject Thesaurus** (Not Repeatable) This subelement provides the reference to a formally registered thesaurus or similar authoritative source of the controlled index terms. Notes on how to obtain electronic access to (e.g., a URI) or copies of the referenced source should be provided, possibly through a Cross Reference to another locator record that more fully describes the referenced resource and its potential application to locating GILS information.
- **Subject Terms Controlled** (Not Repeatable) This subelement is a grouping of descriptive terms drawn from a controlled vocabulary source to aid users in locating entries of potential interest. Each term is provided in the subordinate repeating field:
    - **Controlled Term**

Subject Terms Uncontrolled (Not Repeatable) This element is a grouping of descriptive terms to aid users in locating resources of potential interest, but the terms are not drawn from a formally registered controlled vocabulary source. Each term is provided in the repeating subelement:

- **Uncontrolled Term**

Spatial Domain (Not Repeatable) This element is a grouping of subelements that together provide the geographic areal domain of the data set or information resource. Geographic names and coordinates can be used to define the bounds of coverage. Although described here informally, the spatial object constructs should be as defined in FIPS 173, "Spatial Data Transfer Standard."

- **Bounding Coordinates** (Not Repeatable) This subelement limits the coverage of a data set expressed by latitude and longitude values in the order western-most, eastern-most, northern-most, and southern-most. For data sets that include a complete band of latitude around the earth, the West Bounding Coordinate shall be assigned the value: -180.0, and the East Bounding Coordinate shall be assigned the value: 180.0. The following subelements comprise the Bounding Coordinates:
    - **West Bounding Coordinate** Western-most coordinate of the limit of the coverage expressed in longitude.
      Domain: -180.0 <= West Bounding Coordinate <= 180.0
    - **East Bounding Coordinate** Eastern-most coordinate of the limit of coverage expresses in longitude.
      Domain: -180.0 <= East Bounding Coordinate <= 180.0
    - **North Bounding Coordinate** Northern-most coordinate of the limit of coverage expressed in latitude.
      Domain: -90.0 <= North Bounding Coordinate <= 90.0;
      North Bounding Coordinate >= South Bounding Coordinate
    - **South Bounding Coordinate** Southern-most coordinate of the limit of coverage expressed in latitude.
      Domain: -90.0 <= South Bounding Coordinate <= 90.0;
      South Bounding Coordinate <= North Bounding Coordinate
- **Place** (Repeatable) This subelement identifies geographic locations characterized by the data set or information resource through two associate constructs:
    - **Place Keyword Thesaurus** (Not Repeatable) The name of a formally registered thesaurus or similar authoritative source of Place Keywords. Each keyword is provided in the subordinate repeating field:
    - **Place Keyword** (Repeatable) The geographic name of a location covered by a data set or information resource.

Time Period (Repeatable) This element provides time frames associated with the information resource. One or both of the following forms may be used:

- **Time Period Textual** (Not Repeatable) Time described textually.
- **Time Period Structured** (Repeatable) This form is a grouping of date subelements which are used together to indicate a range.
    - **Beginning Date** (Not Repeatable)
    - **Ending Date** (Not Repeatable)

Availability (Repeatable) This element is a grouping of subelements that together describe how the information resource is made available.

- **Medium** (Not Repeatable) A description of the material type of the resource, e.g. cassette, kit, computer database, computer file. It implies the use of a well-known list of medium types.
- **Distributor** (Not Repeatable) This subelement consists of the following subordinate fields that provide information about the distributor:
    - **Distributor Name**
    - **Distributor Organization**
    - **Distributor Street Address**
    - **Distributor City**
    - **Distributor State or Province**
    - **Distributor Zip or Postal Code**
    - **Distributor Country**
    - **Distributor Network Address**
    - **Distributor Hours of Service**
    - **Distributor Telephone**
    - **Distributor Fax**
- **Resource Description** (Repeatable) This subelement identifies the resource as it is known to the distributor.
- **Order Process** (Not Repeatable) This subelement is a grouping of the following subordinate fields that provide information on how to obtain the information resource from this distributor.
    - **Order Information** (Not Repeatable) This subelement provides information on how to obtain the information resource from this distributor.
    - **Cost** (Not Repeatable) This subelement indicates whether or not there is a cost associated with this resource.
    - **Cost Information** (Not Repeatable) This subelement contains textual information about the cost associated with this resource.
- **Technical Prerequisites** (Not Repeatable) This subelement describes any technical prerequisites for use of the information resource as made available by this distributor.
- **Available Time Period** (Repeatable) This subelement provides the time period reference for the information resource as made available by this distributor. One or both of the following forms may be used:
    - **Available Time Textual** (Not Repeatable) Time described textually.
    - **Available Time Structured** (Repeatable) This form is a grouping of date subelements which are used together to indicate a range.
        - **Beginning Date** (Not Repeatable)
        - **Ending Date** (Not Repeatable)
- **Available Linkage** (Repeatable) This subelement provides the information needed to contact an automated system made available by this distributor. Available linkages are appropriate to reference other locators, facilitate electronic delivery of off-the-shelf information products, or guide the user to data systems that support analysis and synthesis of information. This subelement consists of the subordinate elements Linkage Type and Linkage. It must be repeated for every new instance of Linkage Type.
    - **Linkage Type** (Not Repeatable) This subelement occurs if there is a Linkage. It provides the data content type (i.e., MIME) of the object identified in the referenced URI to give the user an indication of what is being connected to (e.g., document, image).
    - **Linkage** (Repeatable) This subelement provides the machine readable information needed to perform the access (i.e., URI).

Sources of Data (Not Repeatable) This element identifies the primary sources or providers of data to the system, whether within or outside the agency.

Methodology (Not Repeatable) This element identifies any specialized tools, techniques, or methodology used to produce this information resource. The validity, degree of reliability, and any known possibility of errors should also be described.

Access Constraints (Not Repeatable) This element is a grouping of subelements that together describe any constraints or legal prerequisites for accessing the information resource or its component products or services.

- **General Access Constraints** (Not Repeatable) This subelement includes any access constraints or legal prerequisites applied to assure the protection of privacy, and any other special restrictions or limitations on obtaining the information resource.
- **Originator Dissemination Control** (Not Repeatable) This subelement contains specifics determined by the originator of the information resource pertaining to the control of access to or dissemination of this resource.
- **Security Classification Control** (Not Repeatable) This subelement contains specifics pertaining to the security classification associated with the information resource.

Use Constraints (Not Repeatable) This element describes any constraints or legal prerequisites for using the information resource or its component products or services. This includes any use constraints applied to assure the protection of privacy or intellectual property and any other special restrictions or limitations on using the information resource.

Point of Contact (Not Repeatable) This element identifies an organization, and a person where appropriate, serving as the point of contact plus methods that may be used to make contact. This element consists of the following subelements:

- **Contact Name**
- **Contact Organization**
- **Contact Street Address**
- **Contact City**
- **Contact State or Province**
- **Contact Zip or Postal Code**
- **Contact Country**
- **Contact Network Address**
- **Contact Hours of Service**
- **Contact Telephone**
- **Contact Fax**

Supplemental Information (Not Repeatable) Through this element, the record source may associate other descriptive information with the GILS Core locator record.

Purpose (Not Repeatable) This element describes why the information resource is offered and identifies other programs, projects, and legislative actions wholly or partially responsible for the establishment or continued delivery of this information resource. It may include the origin and lineage of the information resource, and related information resources.

Agency Program (Not Repeatable) This element identifies the major agency program or mission supported by the system and should include a citation for any specific legislative authorities associated with this information resource.

Cross Reference (Repeatable) This element is a grouping of subelements that together identify another locator record or related information resources likely to be of interest.

- **Cross Reference Title** (Not Repeatable) This subelement provides a human readable textual description of the cross reference.
- **Cross Reference Relationship** (Repeatable) This subelement may be drawn from a controlled list of terms describing the relationship of the cross referenced object to this locator record. Values useful in the USMARC context include: original language, translation, supplement/special issue, parent, host item, component item, other edition, additional physical form, issued with, preceding entry, succeeding entry, and data source entry.
- **Cross Reference Linkage** (Repeatable) This subelement is a grouping of subelements that together provide information needed to access the referenced object. It is composed of the subordinate elements Linkage Type and Linkage. Cross Reference Linkage is repeated for each new instance of Linkage Type.
    - **Linkage Type** (Not Repeatable) This subelement occurs if there is a Linkage. It provides the data content type (i.e., MIME) of the object identified in the referenced URI to give the user an indication of what is being connected to (e.g., document, image).
    - **Linkage** (Repeatable) This subelement provides the machine readable information needed to perform the access (i.e., URI).

Schedule Number (Not Repeatable) This element is used to record the identifier associated with the information resource for records management purposes.

Control Identifier (Not Repeatable) This element is defined by the information provider and is used to distinguish this locator record from all other GILS Core locator records.

Original Control Identifier (Not Repeatable) This element is used by the record source to refer to another GILS locator record from which this locator record was derived.

Record source (Not Repeatable) This element identifies the organization that created or last modified this locator record.

Language of Record (Not Repeatable) This element indicates the language of the locator record as represented by the MARC three character alpha code.

Date of Last Modification (Not Repeatable) This element identifies the latest date on which this locator record was created or modified.

Record Review Date (Not Repeatable) This element identifies a date assigned by the Record Source for review of this GILS Record.

Other Links

Global Information Locator Service

- Government Information Locator Service (GILS)
    - What is GILS?
    - Contacts
    - A Demonstration Sampler
    - Technical Topics and Other Information
