Enterprise Metadata IT System Requirements Ratings

Ratings: 1 - Highest Priority; **5** - Lowest Priority; **0** - No Entry

NCDC Team Initials: JDA - Jeff Arnfield; **RB** - Rich Baldwin; **PRJ** - Phil Jones; **KR** - Ken Roberts

FUNCTIONAL REQUIREMENT	PRIORITY RATIN			COMMENTS		
	JDA	PRJ	MEAN	JDA	PRJ	KR
IMPORT - The system must have the ability to import external metadata information into the enterprise system						
Import multiple standards/profiles	1	1	1	Next item, conversion		
Support multiple ingest formats (Text, HTML, XML)	2	3	2.5			
Support Batch Import	1	1	1			
Support multiple languages/character sets	5	0	2.5			
Additional…	0	0	0			Add support of multiple import protocols (http,
CONVERT - The system must be capable of converting metadata between different representations				Or support external tools to		
Convert between standards and profiles	1	1	1			
Convert between formats (text, XML, etc.)	1	1	1			
Convert in as "lossless" a way as possible	1	1	1		Conversion may require human	
Additional…	0	0	0			
EXPORT - The system must be capable of exporting metadata to various representations				The "convert between		
Exporting must support ISO 19139 XML standards	1	1	1			
Exporting must support FGDC standards	1	1	1			
Exporting must support MARC XML standards	0	4	2	?		
Exporting must support preconfigured XML (non-19139) view	1	1	1			
Exporting must support preconfigured Text view	1	2	1.5			

Exporting must support preconfigured FAQ view	1	3	2			
Exporting must support preconfigured HTML view	1	2	1.5			
Exporting must support User-defined custom output such as style sheets, selectable fields, etc	1	1	1			
Additional…	0	0	0			
VALIDATE - The system must be capable of validating metadata information						
Must validate against specific standards/profiles/user needs	1	1	1			
Spell-checking must be possible	1	2	1.5	Vague		
Must validate against vocabularies	1	1	1			
Must support Batch Validate	2	1	1.5			
Validate Incomplete Record, and those without components	1	1	1			
Easy to understand validation error messages	2	1	1.5			
Validation must be integrated into system (real-time, inline)	3	0	1.5	Unclear		
Fuzzy and custom validation	2	0	1	Unclear	What is fuzzy	
Must support validation of heavily nested record sets (to user defined levels)	1	1	1			
Must validate URLs, positions (points and bounding boxes), domains, ranges, dates	1	1	1		This req should be specific on what kind of	
Additional…	0	0	0			
PUBLISH - The system must be capable of publishing metadata information to						
Must support Z39.50 / ISO 23950	2	1	1.5			
Must be able to publish to Web Accessible Folder	1	1	1			
Must support Open Archive Initiative Metadata Service	2	0	1			
Must support ArcIMS Metadata Service	2	0	1			
Must be easy to add publishing destinations	2	1	1.5			
Must have ability to select publish destination on a per data set	2	2	2			
Must be able to publish in multiple formats (including custom and	2	0	1			
Must be able to un-publish/request retraction from external catalog (if external system can do it)	2	1	1.5			
Must be able to automatically re-publish based on change detection (could be complicated by components)	3	2	2.5			

Support DOIs (Durable, or Digital Object Identifiers) for publishing datasets	1	1	1			
Additional…	0	0	0			
EDIT - The system must provide interfaces for manual creation and editing of metadata information into the enterprise system						
Supports Reuse / Access Values in Other Records	1	1	1			
Edits In Multiple Languages	4	5	4.5	Wmo says English works…		
Saves Incomplete Record	1	1	1			
Auto-populates some Metadata Elements	2	2	2			
Multiple authors can edit	1	1	1			
Supports Web-based user interface including WebDAV clients	0	3	1.5	?		
Supports a range of users (beginner to expert)	1	1	1			
Has ability to Batch edit/create	1	1	1			
Includes both human and machine interfaces	1	0	0.5		What is meant	
Additional…	0	0	0			
MANAGE VOCABULARIES - The system must be able to manage controlled						
Must have ability to use controlled vocabulary lists	1	1	1			
Supports thesauri	1	1	1			
Vocabularies are integrated across the system (e.g., drop down	1	1	1			
Supports controlled vocabulary terms as complex objects with	1	1	1			
Additional…	0	0	0			
MANAGE COMPOPNENTS - The system must be able to manage (CRUD) and link						
Maintains unique identifiers	1	1	1			
Resolve complete records from components	1	1	1			
Search components - return composites	1	1	1			
Validate components	1	1	1		This req is	
Support REST interface to components	1	1	1	Assuming REST is the major player now, but		
Lots of administrative details, orphans/dups	1	0	0.5	Devil's in details		
Additional…	0	0	0			
SUPPORT QUERIES - The system must be capable of responding to search queries						

Supports both internal and external searches (clearinghouse	1	1	1			
Must support Catalog Service for the Web (CSW)	2	1	1.5			
Must support SRU (Search-Retrieval via URL)	0	0	0	?		
Enables free-text searches	1	1	1			
Enables searching by fields (spatial/temporal searches)	1	1	1			
Supports logical searches (AND/OR, etc)	1	1	1			
Supports both human and machine interfaces (RSS, CSW, …)	1	1	1			
Includes admin "who did what when" info	1	1	1		Wouldn't this req be covered	
Provides Google-style "did you mean?" searches precise/fuzzy (could be expensive)	2	3	2.5			
Leverages ontologies	1	1	1			
Support result ranking…	2	0	1			
Save searches	2	3	2.5			
RSS Feeds	2	2	2			
Additional…	1	0	0.5	Support		
MANAGE DM DATA - The system must be able to manage OAIS "Data Management Data" (OAIS RM page 1-9)						
Must support ability to track where records are published	2	1	1.5			
Every component within the catalog must have a unique identifier	1	1	1	This shows up		
System must handle preservation process history data, system stats,	1	1	1			
Additional…	0	0	0			
GENERATE REPORTS - The system must be able to generate reports						
Both routine, regularly-scheduled and custom ad-hoc reports must be possible	1	2	1.5			
Supports reports on descriptive metadata, administrative reports (DM Data) and summaries	3	2	2.5			
Supports client- and server-side configurable outputs	1	2	1.5	?		
Additional…	0	0	0			
CONTROL ACCESS - The system must be capable of controlling access to the system and the metadata it contains						
Supports users external to NOAA	2	1	1.5	We need that		

Automated password reset/recovery	1	1	1			
Provides variable levels of access, from viewing only up to editing for records and components	1		1	Ability to shield PII, etc		
Could integrate with NOAA "single sign on"	3	4	3.5		Would this conflict with	
Filtered views on publication	1	1	1	Exclude some		
Additional…	0	0	0			
MANAGE WORKFLOW - The system must be aware of and able to manage						
Supports customized workflows	2	0	1			
Support archive approval process	3	0	1.5		How would this support work?	
Includes validation steps and gates	2	0	1			
Linkable to NOAA Records Appraisal Process	0	0	0	?	Isn't this the same as "support archive approval process"?	
Linked to gov.noaa.nodc:publish/unpublish of approved accessions/datasets	0	0	0	?		
Additional…	0	0	0			
LINK TO ARCHIVAL STORAGE - The system must be capable of linking metadata records to AIPs in Archival Storage						
Maintains unique identifiers	1	1	1	Again with this!		
Supports many-to-many relationships	1	1	1			
Works in a bi-directional fashion	1	1	1			
Maintains authoritative relationship between metadata and filesystem	3	0	1.5			
Additional…	0	0	0			
HANDLE VERSIONS - The system must be capable of handling multiple versions of						
Earlier versions must be viewable and time-stamped	1	1	1			
Accounting records maintained for every version	2	3	2.5			

Linked to import ("Accession Compare", replace, update, compare, merge)	3	2	2.5			
Recorded on publish	2	1	1.5			
Impact on components?	0	0	0	?	This is a	
Additional…	0	0	0			
MINIMIZE DUPLICATION - The system must be capable of detecting and reducing the presence of duplicate and near-duplicate information					Replace "reducing" with	
Must be capable of detecting duplicates across all components (e.g., within vocabularies, across metadata records, etc.)	1	1	1			
Can communicate with external systems	1	1	1			
Compares constituents of components AND unique identifiers	1	1	1			
Launches into merge/compare	0	3	1.5	?		
May require human input / validation	1	2	1.5		Is this a req?	
Additional…	0	0	0			
SUPPORT GUI & API - The system must consist of both human interfaces (GUI) and machine-to-machine interfaces (API)						
Must span the system	2	1	1.5			
Supports event-based actions	2	3	2.5			
Supports RESTful interfaces	2	2	2			
System functions can be treated as externally available services	1	1	1			
System can use external services	1	1	1			
Additional…	0	0	0			
SUPPORT STANDARDS - The ability across the enterprise to support various					"support really	
ISO 19115 Geospatial Metadata including NAP and other profiles	1	1	1			
ISO 19110: Feature Catalog	1	1	1			
ISO 19115 Part 2: Extensions for imagery and gridded data	1	1	1			
ISO 19119 Geographic Information - Services	1	1	1			
Extensions for Remote Sensing (RSE)	1	1	1			
FGDC CSDGM (FGDC-STD-001-1998)	1	1	1			
Biological Data Profile of the CSDGM	0	1	0.5			
Metadata Profile for Shoreline Data of the CSDGM	0	1	0.5			
Ecological Metadata Language (EML)	0	1	0.5			
GCMD DIF	2	1	1.5			

MARC XML	0	1	0.5			
Dublin Core	0	1	0.5			
Easily add additional standards (may require xsd development)	1	1	1		Wouldn't this one req cover	
Additional…	0	0	0			
SUPPORT COLLECTIONS AND GRANULES - Ability of the system to link collections and granules, including products and their constituent originals						
Maintains relationships between components	1	1	1			
Link to a Rich Inventory system	1	1	1			
Maintain links between products and archival objects	2	1	1.5		Very beneficial	
Additional…	0	0	0			Add support for file-level provenance for
Additional…	0	0	0			Add support for linking

ArcGIS Server Geoportal (GPT) Extension Comparison

The feedback given below is in context to existing functionality in ESRI's Geoportal. We use metadata to solve interoperability problems in accessing data. Metadata needs to validate to a standard profile and be customized to drive the presentation of services for a collection of data. A 15 minute presentation is planned for the feasibility discussion schedule for August. -Rich Baldwin

Comparison Codes:

***** - Function available in Geoportal; **X** - Function not available in Geoportal; **?** - Specific requirement description is unclear; **NA** - Not Applicable; **DK** - Don't know

FUNCTIONAL REQUIREMENT	Comparison Code	COMMENTS RB
IMPORT - The system must have the ability to import external metadata information into the enterprise system		
Import multiple standards/profiles	*	
Support multiple ingest formats (Text, HTML, XML)	*	
Support Batch Import	*	
Support multiple languages/character sets	*	
Additional Support	*	Multiple CSW profiles accepted, Z39.50, OMI-PMH, WAF, ESRI MS
CONVERT - The system must be capable of converting metadata between different representations		
Convert between standards and profiles	X	
Convert between formats (text, XML, etc.)	*	In UI presentation
Convert in as "lossless" a way as possible	NA	

EXPORT - The system must be capable of exporting metadata to various representations		
Exporting must support ISO 19139 XML standards	*	
Exporting must support FGDC standards	*	
Exporting must support MARC XML standards	*	
Exporting must support preconfigured XML (non-19139) view	?	
Exporting must support preconfigured Text view	*	
Exporting must support preconfigured FAQ view	?	
Exporting must support preconfigured HTML view	*	
Exporting must support User-defined custom output such as style sheets, selectable fields, etc	*	Users can apply XSLT to XML output
Additional Support	*	Geoportal provides CSW protocol support for any profile ingested
VALIDATE - The system must be capable of validating metadata information		
Must validate against specific standards/profiles/user needs	*	
Spell-checking must be possible	?	To what extent
Must validate against vocabularies	*	
Must support Batch Validate	*	
Validate Incomplete Record, and those without components	?	
Easy to understand validation error messages	*	
Validation must be integrated into system (real-time, inline)	*	
Fuzzy and custom validation	?	
Must support validation of heavily nested record sets (to user defined levels)	*	
Must validate URLs, positions (points and bounding boxes), domains, ranges, dates	X	
PUBLISH - The system must be capable of publishing metadata information to		
Must support Z39.50 / ISO 23950	*	Supported at 9.3.1 SP1
Must be able to publish to Web Accessible Folder	X	Not a supported feature, but a function which could be configured externally
Must support Open Archive Initiative Metadata Service	X	
Must support ArcIMS Metadata Service	*	

Must be easy to add publishing destinations	?	
Must have ability to select publish destination on a per data set basis	?	
Must be able to publish in multiple formats (including custom and	*?	
Must be able to un-publish/request retraction from external catalog (if external system can do it)	?	Updated record is immediately Available from service
Must be able to automatically re-publish based on change detection (could be complicated by components)	?	Updated record is immediately Available from service
Support DOIs (Durable, or Digital Object Identifiers) for publishing datasets	X?	Is there an authority? The framework is present to support this implemenation
Additional Support	*	Records available through CSW, REST API, configurable HTML UI
EDIT - The system must provide interfaces for manual creation and editing of metadata information into the enterprise system		
Supports Reuse / Access Values in Other Records	*	
Edits In Multiple Languages	*	
Saves Incomplete Record	*	
Auto-populates some Metadata Elements	*	
Multiple authors can edit	*	
Supports Web-based user interface including WebDAV clients	*	
Supports a range of users (beginner to expert)	*	
Has ability to Batch edit/create	*	
Includes both human and machine interfaces	*	
MANAGE VOCABULARIES - The system must be able to manage controlled		
Must have ability to use controlled vocabulary lists	*	
Supports thesauri	*	GPT 3.1
Vocabularies are integrated across the system (e.g., drop down lists)	?	
Supports controlled vocabulary terms as complex objects with	?	
MANAGE COMPOPNENTS - The system must be able to manage (CRUD) and link		
Maintains unique identifiers	*	
Resolve complete records from components	?	
Search components - return composites	?	
Validate components	*	

Support REST interface to components	*	
Lots of administrative details, orphans/dups	?	
Additional Support	*	JSON, GEORSS, ATOM, HTML, FRAGMENT
SUPPORT QUERIES - The system must be capable of responding to search queries		
Supports both internal and external searches (clearinghouse	*	
Must support Catalog Service for the Web (CSW)	*	9.3.1 SP1
Must support SRU (Search-Retrieval via URL)	*	
Enables free-text searches	*	
Enables searching by fields (spatial/temporal searches)	*	
Supports logical searches (AND/OR, etc)	*	partially
Supports both human and machine interfaces (RSS, CSW, …)	*	
Includes admin "who did what when" info	*	
Provides Google-style "did you mean?" searches precise/fuzzy (could be expensive)	X	
Leverages ontologies	*	
Support result ranking…	*	
Save searches	*	
RSS Feeds	*	
MANAGE DM DATA - The system must be able to manage OAIS "Data Management Data" (OAIS RM page 1-9)		
Must support ability to track where records are published	X	In metadata?
Every component within the catalog must have a unique identifier	*?	
System must handle preservation process history data, system stats,	X	
GENERATE REPORTS - The system must be able to generate reports		
Both routine, regularly-scheduled and custom ad-hoc reports must be possible	?	
Supports reports on descriptive metadata, administrative reports (DM Data) and summaries	?	

Supports client- and server-side configurable outputs	*?	Options exist for standard reporting
CONTROL ACCESS - The system must be capable of controlling access to the system and the metadata it contains		
Supports users external to NOAA	*	Depends on NOAA security
Automated password reset/recovery	X	
Provides variable levels of access, from viewing only up to editing for records and components	*	
Could integrate with NOAA "single sign on"	*	Integrates w/ LDAP
Filtered views on publication	*	
MANAGE WORKFLOW - The system must be aware of and able to manage		OGC GDW?
Supports customized workflows	X	
Support archive approval process	?	
Includes validation steps and gates	?	
Linkable to NOAA Records Appraisal Process	?	
Linked to gov.noaa.nodc:publish/unpublish of approved accessions/datasets	?	
LINK TO ARCHIVAL STORAGE - The system must be capable of linking metadata records to AIPs in Archival Storage		
Maintains unique identifiers	*	
Supports many-to-many relationships	?	
Works in a bi-directional fashion	?	
Maintains authoritative relationship between metadata and	?	
Additional Support	*	Uses RDBMS to store XML or binary objects (Oracle,SQLServer,…)
HANDLE VERSIONS - The system must be capable of handling multiple versions of metadata information		Not currently being used operationally in this manner
Earlier versions must be viewable and time-stamped	*	
Accounting records maintained for every version	*	
Linked to import ("Accession Compare", replace, update, compare, merge)	X	
Recorded on publish	*	
Impact on components?	?	

MINIMIZE DUPLICATION - The system must be capable of detecting and reducing the presence of duplicate and near-duplicate information		
Must be capable of detecting duplicates across all components (e.g., within vocabularies, across metadata records, etc.)	*	Configured so that duplicates are not possible; uses unique id
Can communicate with external systems	*	
Compares constituents of components AND unique identifiers	?	
Launches into merge/compare	X	
May require human input / validation	?	
SUPPORT GUI & API - The system must consist of both human interfaces (GUI) and machine-to-machine interfaces (API)		
Must span the system	*	
Supports event-based actions	*	
Supports RESTful interfaces	*	
System functions can be treated as externally available services	*	
System can use external services	*	
SUPPORT STANDARDS - The ability across the enterprise to support various		
ISO 19115 Geospatial Metadata including NAP and other profiles	*	
ISO 19110: Feature Catalog	DK	
ISO 19115 Part 2: Extensions for imagery and gridded data	*	
ISO 19119 Geographic Information - Services	*	
Extensions for Remote Sensing (RSE)	*	
FGDC CSDGM (FGDC-STD-001-1998)	*	
Biological Data Profile of the CSDGM	DK	
Metadata Profile for Shoreline Data of the CSDGM	DK	
Ecological Metadata Language (EML)	DK	
GCMD DIF	*	
MARC XML	*	
Dublin Core	*	
Easily add additional standards (may require xsd development)	X?	
Additional Support	*	INSPIRE

SUPPORT COLLECTIONS AND GRANULES - Ability of the system to link collections and granules, including products and their constituent originals		
Maintains relationships between components	?	
Link to a Rich Inventory system	*	
Maintain links between products and archival objects	*	