

**Annex A**  
**Statement of Requirements (SOR)**  
**for the Canada Revenue Agency (CRA)**  
**Metadata Management Solution**

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## **Background**

The Canada Revenue Agency (CRA) is proposing to purchase a Commercial-Off-The-Shelf (COTS) solution that best addresses the Agency's metadata management needs. This solution would manage and capture both the business and the technical metadata on structured information within a centralized repository and enable users to access consistent metadata through a bilingual and user-friendly interface. There is growing demand to improve support of the activities underway in both the Agency's data stewardship and Business Intelligence programs, through an accurate and understandable robust metadata management solution.

This solution will support the CRA's objective to collect, centralize, validate, govern and expand the business use of CRA metadata and link with CRA current and legacy tools and systems.

Attached is a comprehensive set of mandatory and rated business and technical requirements for the solution.

CRA's metadata management vocabulary used throughout this Statement of Requirements (SOR) is defined in the Glossary.

**Mandatory Requirements**

ID	Mandatory Requirement Description	Comply Yes/No	Bidder Response/ Document Reference
<b>General Requirements</b>			
M1.	Metadata items must be uniquely identifiable within the proposed solution.		
M2.	The proposed solution must include all end-user interfaces in both English and French.		
M3.	The proposed solution must include all system administrator interfaces in English.		
M4.	<p>The proposed solution must accommodate for the design and implementation of a multi-step governance process that provides feedback and revision capabilities to support the business process similar to the one referenced in <i>Appendix B, Metadata Approval Process</i>, for, at minimum the following metadata item types and metadata item attributes.</p> <p><b>Metadata item types:</b></p> <ul style="list-style-type: none"> <li>• Term</li> <li>• Legislative Reference</li> <li>• Form Release</li> <li>• Form Section</li> <li>• Form Field</li> <li>• Logical Data Model Entity Attribute</li> </ul> <p><b>Metadata item attributes:</b></p> <ul style="list-style-type: none"> <li>• English Name</li> <li>• French Name</li> <li>• English Definition/Description</li> <li>• French Definition/Description</li> <li>• Category</li> <li>• Business Rule</li> <li>• Minimum Value</li> <li>• Maximum Value</li> </ul>		
M5.	The proposed solution must govern and regulate the lifecycle of the metadata items, utilizing comparable statuses to support the status workflow referenced in <i>Appendix C, Status Flow Process</i> .		
M6.	<p>The proposed solution must support and enable collaboration between users within the solution.</p> <p>Describe how the proposed solution supports and enables collaboration between all users.</p>		

**Mandatory Requirements**

ID	Mandatory Requirement Description	Comply Yes/No	Bidder Response/ Document Reference
M7.	The proposed solution must include the ability to reconcile time zones when capturing and importing end-user actions (i.e. user action performed in Atlantic Standard Time or Pacific Standard Time are indicated in Eastern Standard Time).		
<b>Capture and Maintenance of Metadata</b>			
M8.	The proposed solution must allow authorized users to create, read, update, and delete self-defined <u>metadata item types</u> from within the user interface.		
M9.	The proposed solution must allow authorized users to create, read, update, and delete self-defined <u>metadata item attributes</u> for all metadata item types from within the user interface.		
M10.	The proposed solution must be able to <u>automatically collect</u> metadata from a variety of sources and create, update, and delete metadata items for <u>metadata item types</u> within the repository.		
M11.	The proposed solution must be able to <u>automatically collect</u> metadata from a variety of sources and create, update, and delete metadata for <u>metadata item attributes</u> for metadata item types within the repository.		
M12.	The proposed solution must allow authorized users to create, read, update, and delete <u>metadata</u> for pre-defined and self-defined metadata item types from within the user interface.		
M13.	The proposed solution must allow authorized users to create, read, update, and delete <u>metadata</u> for pre-defined and self-defined metadata item attributes for metadata item types from within the user interface.		

**Mandatory Requirements**

<b>ID</b>	<b>Mandatory Requirement Description</b>	<b>Comply Yes/No</b>	<b>Bidder Response/ Document Reference</b>
M14.	<p>The proposed solution must include the ability to directly import metadata from data models, created using <i>CA ERwin v9.5</i> and newer versions, and integrate the imported metadata by relating it to the other metadata within the solution. Importing includes creating, updating, and deleting metadata as required.</p> <p>The following metadata must be importable:</p> <ul style="list-style-type: none"><li>• Model Names</li><li>• Entity Names and definitions</li><li>• Attribute Names and definitions</li><li>• Table Names and definitions</li><li>• Column Names and definitions</li><li>• User Defined Properties</li><li>• Data Types</li><li>• Null Option</li><li>• Relationships between Entities and Attributes</li><li>• Relationships between Tables and Columns</li></ul>		

**Mandatory Requirements**

<b>ID</b>	<b>Mandatory Requirement Description</b>	<b>Comply Yes/No</b>	<b>Bidder Response/ Document Reference</b>
M15.	<p>The proposed solution must include the ability to directly import metadata from <i>IBM DataStage v8.5</i> and newer versions, and integrate the imported metadata by relating it to the other metadata within the solution. Importing includes creating, updating, and deleting metadata as required.</p> <p>The following metadata must be importable:</p> <ul style="list-style-type: none"><li>• DataStage file names</li><li>• Job Names</li><li>• Stage Names</li><li>• Stage Constraints</li><li>• Stage Columns, Stage Variables</li><li>• Stage Descriptions</li><li>• Column/Stage Variable Names</li><li>• Column/Stage Variable Expressions, Derivations, Initial Values</li><li>• Column/Stage Variable Data Type</li><li>• Column/Stage Variable Length</li><li>• Column/Stage Variable Scale</li><li>• Column/Stage Variable Nullable Value</li><li>• Column/Stage Variable Key Value</li><li>• Relationships between stages</li></ul>		

**Mandatory Requirements**

ID	Mandatory Requirement Description	Comply Yes/No	Bidder Response/ Document Reference
M16.	<p>The proposed solution must include the ability to directly import metadata from the Database Management Systems below, and integrate the imported metadata by relating it to the other metadata within the solution. Importing includes creating, updating, and deleting metadata as required.</p> <p><u>Database Management Systems:</u></p> <ul style="list-style-type: none"> <li>• IBM DB2 z/OS v10 and newer</li> <li>• IBM DB2/LUW v9.7, v10.5 and newer</li> <li>• PostgreSQLv9.3, v9.4 and newer</li> <li>• IBM Netezza v7.2 and newer</li> </ul> <p>The following metadata must be importable:</p> <ul style="list-style-type: none"> <li>• Database Names</li> <li>• Schema Names</li> <li>• Table Names</li> <li>• Column Names</li> <li>• Data Types</li> <li>• Length</li> <li>• Precision/Scale</li> <li>• Null Indicator</li> <li>• Relationships between databases and schemas</li> <li>• Relationships between schemas and tables</li> <li>• Relationships between tables and columns</li> </ul>		
M17.	<p>The proposed solution must include the ability to directly import metadata from <i>IBM Cognos BI v10.2.1 FixPack 5</i> and newer (including <i>IBM Framework Manager, IBM Cognos Report Studio, IBM Cognos Query Studio</i>), and integrate the imported metadata by relating it to the other metadata within the solution. Importing includes creating, updating, and deleting metadata as required.</p>		



**Mandatory Requirements**

ID	Mandatory Requirement Description	Comply Yes/No	Bidder Response/ Document Reference
M18.	<p>The proposed solution must include a self-defined load capability to design and build customized processes to load metadata into the solution. Specifically, the following metadata must be capable of being imported into the solution:</p> <ul style="list-style-type: none"> <li>• Names (e.g., Business Name)</li> <li>• Codified names</li> <li>• Relationships between names and codified names</li> <li>• Definitions</li> <li>• Comments</li> <li>• Location information (e.g., models, databases)</li> <li>• Relationships between the metadata items and locations (usages)</li> <li>• Contact information (e.g., name, organization unit)</li> </ul>		
M19.	<p>The proposed solution must include the ability to <u>automatically and manually</u> create, read, update and delete data lineage relationships between metadata item usages</p>		
M20.	<p>The proposed solution must include the ability to import metadata into, and export metadata from the solution using CSV format.</p>		
M21.	<p>The proposed solution must include the ability to assign a Business Data Steward to a metadata item.</p>		
M22.	<p>The proposed solution must include change control features that track any changes made to the solution's contents.</p> <p>Describe how change control is managed within the solution.</p>		
<b>Searching, Reporting, and Analysis of Metadata</b>			
M23.	<p>The proposed solution must support search functionality and allow users to search metadata within the solution, by word or phrase.</p>		
M24.	<p>The proposed solution must allow authorized users to execute and print pre-defined reports.</p>		
M25.	<p>The proposed solution must allow authorized users to build, execute and print ad-hoc reports.</p>		
M26.	<p>The proposed solution must allow authorized users to create and view reports in:</p> <ul style="list-style-type: none"> <li>• Unilingual English; and</li> <li>• Unilingual French</li> </ul>		
M27.	<p>The proposed solution must provide a graphical representation of relationships between metadata items.</p>		

### Mandatory Requirements

ID	Mandatory Requirement Description	Comply Yes/No	Bidder Response/ Document Reference
<b>User, Role and Access Management (Refer to APPENDIX A – User Groups/Roles Matrix for context)</b>			
M28.	The proposed solution must support the use of Lightweight Directory Access Protocol (LDAP) for user authentication.		
M29.	The proposed solution must facilitate authorized users, through LDAP, to perform, at minimum, the following user management functions: <ul style="list-style-type: none"> <li>• Create, read, update, and delete users, and;</li> <li>• Create, read, update, and delete user groups, and;</li> <li>• Allow all authorized users to have a default user group</li> </ul>		
M30.	The proposed solution must provide authorized users the ability to perform, at minimum, the following user management functions: <ul style="list-style-type: none"> <li>• Create, read, update, and delete roles, and;</li> <li>• Assign specific features and functions to specific user roles, and;</li> <li>• Assign, revoke, and update a user group to one or more roles, and;</li> <li>• Allow all users to have a default role</li> </ul>		
M31.	The proposed solution must allow for the authentication of users.		
M32.	The proposed solution must include an access management interface that controls user access to specific features and functions based on their role. Specifically: <ul style="list-style-type: none"> <li>• metadata item types</li> <li>• metadata items</li> <li>• metadata attributes</li> </ul>		
M33.	The proposed solution must prevent unauthorized users from making modifications to the metadata.		
<b>Performance, Usability, and Maintainability</b>			
M34.	Any browser based interfaces of the proposed solution must display properly in <i>Internet Explorer version 11</i> and newer.		
M35.	The proposed solution must provide CRA administrators the ability to create scheduled and manual backups.		
M36.	The proposed solution must provide CRA administrators the ability to restore from a backup.  Describe how the proposed solution can be recovered from a backup.		
M37.	The proposed solution must be able to accommodate 3,000 active users at a concurrent peak.		
M38.	The proposed solution must be able to accommodate 40,000 registered users.		

**Mandatory Requirements**

ID	Mandatory Requirement Description	Comply Yes/No	Bidder Response/ Document Reference
M39.	The proposed solution must have the ability to trace updates to metadata to the user who made the change and the date/time the change was made.		
M40.	The proposed solution must support monitoring of performance and usage.		
M41.	The proposed solution must support multiple time zones based on user desktop preferences.		
<b>Installation, Scaling, licensing and configuration</b>			
M42.	The proposed solution must permit CRA/SSC IT administrators to install and configure the solution.		
M43.	The proposed solution must support installations with configurations adapted to different environments. For example: development, testing and production environments.  Describe how the proposed solution can be implemented to support at least 1 Production state and 5 lower state environments.		
M44.	The proposed solution must be scalable in response to increased usage or data requirements. Describe how this is done.		
M45.	The proposed solution must support at least 1 Production state and 5 lower state environments.		
<b>General Technical Requirements</b>			
M46.	The proposed solution manuals must define all functions and include complete instructions for the operation of the product and include software installation and configuration instructions.		
M47.	The proposed solution must support the following character sets/encodings through import, export, user interfaces, reports, and manual input: <ul style="list-style-type: none"> <li>• UTF-8</li> <li>• ISO 8859</li> </ul>		
M48.	The proposed solution must include all software components required to make the solution operational in CRA.		
M49.	The proposed solution must not require any form of external connection to activate any component of the product. Requiring a serial number or other form of license is acceptable, but the solution must not require any form of on-going electronic or internet-enabled validation or check for license compliance.		
M50.	The proposed solution must be entirely contained within the CRA/SSC environment and not depend on or require data of any kind to be sent outside the CRA/SSC environment for processing. No “service” or “service bureau” based solutions will be acceptable.		

**Mandatory Requirements**

ID	Mandatory Requirement Description	Comply Yes/No	Bidder Response/ Document Reference
M51.	The proposed solution must not require CRA to make any changes to the standard web browser configuration.		
M52.	The proposed solution must be deployable (hosted) and be fully functional from inside a corporate firewall with no access to the Internet or to third party providers.		
M53.	The proposed solution must allow users to create, modify, and execute reports/queries within the tool, without knowledge of query languages, for example SQL.		
<b>Platform Requirements</b>			
M54.	The proposed solution must be fully compatible with 32 and 64 bit binaries on computer systems based on x86-64 architecture.		
M55.	<p>The proposed solution must operate in a Microsoft Windows client based distributed operating system environment and must operate on each of the following products:</p> <ul style="list-style-type: none"> <li>• Windows 7 – Enterprise for x86 microprocessor architecture</li> <li>• Windows 10 – Enterprise for x64 microprocessor architecture</li> </ul>		
M56.	<p>The proposed solution must run on a desktop personal computer (PC) fitted with the following components:</p> <ul style="list-style-type: none"> <li>• Dual core processor</li> <li>• 4GB RAM (4GB x1)</li> <li>• 320 GB HD</li> <li>• Optical mouse</li> <li>• Keyboard</li> </ul>		
M57.	<p>The proposed solution, if server infrastructure is required, must operate in <b><u>at least one</u></b> of the following two operating system environments:</p> <p>Windows Server 2008 R2 – all versions for x64 microprocessor architectures, and any subsequent releases of Windows Server,</p> <p align="center"><b>OR</b></p> <p>Red Hat Enterprise Linux (RHEL) v6.5 server for x64 microprocessor architectures, and any subsequent releases of RHEL</p> <p>Describe the optimal operating system and DBMS combination for the proposed solution.</p>		
M58.	The proposed solution, if server infrastructure is required, must support running in the VMWare virtualized environment.		

**Mandatory Requirements**

ID	Mandatory Requirement Description	Comply Yes/No	Bidder Response/ Document Reference
M59.	<p>The proposed solution will be installed on a server infrastructure with the following characteristics:</p> <ul style="list-style-type: none"> <li>• Two-socket Blade servers with multiple cores.</li> <li>• CPU's are the latest XEON E7 family and have from 8 to 12 cores per socket.</li> <li>• This hardware is used for both Windows and LINUX servers.</li> </ul> <p>Bidders are asked to specify the number of cores and the amount of random access memory (RAM) necessary for the proposed solution to deliver the maximum allowable software response times below; given a peak of 3,000 concurrent users actively connected to the solution:</p> <ol style="list-style-type: none"> <li>1. Navigation, measured from time solution is prompted until selected destination is successfully displayed to the user: <ul style="list-style-type: none"> <li>• <i>Less than 5 seconds.</i></li> </ul> </li> <li>2. Report production, per 1000 rows returned: <ul style="list-style-type: none"> <li>• <i>Less than 30 seconds.</i></li> </ul> </li> <li>3. Data Entry of a Metadata Item, from time solution is prompted until user is notified of successful completion: <ul style="list-style-type: none"> <li>• <i>Less than 10 seconds.</i></li> </ul> </li> <li>4. Import function, per 100 MB of data imported: <ul style="list-style-type: none"> <li>• <i>Less than 5 minutes.</i></li> </ul> </li> <li>5. Export function, per 100 MB of data exported: <ul style="list-style-type: none"> <li>• <i>Less than 5 minutes.</i></li> </ul> </li> <li>6. Keyword search using search functionality, measured from time solution is prompted until result list is successfully displayed to the user: <ul style="list-style-type: none"> <li>• <i>Less than 5 seconds.</i></li> </ul> </li> <li>7. Keyword search using five keywords, as well as filtering results to include only one Metadata Item Type, and one Governance Status, measured from time solution is prompted until result list is successfully displayed to the user: <ul style="list-style-type: none"> <li>• <i>Less than 10 seconds.</i></li> </ul> </li> <li>8. Start-up time for the end-user solution (not including system administrator or server-side solution if applicable): <ul style="list-style-type: none"> <li>• <i>Less than 10 seconds.</i></li> </ul> </li> <li>9. Shut-down time for the end-user solution (not including system administrator or server-side solution if applicable):</li> </ol>		

**Mandatory Requirements**

ID	Mandatory Requirement Description	Comply Yes/No	Bidder Response/ Document Reference
	<ul style="list-style-type: none"> <li>• <i>Less than 10 seconds.</i></li> </ul> 10. Start-up time for the system administrator solution (not including server-side solution if applicable): <ul style="list-style-type: none"> <li>• <i>Less than 1 minute.</i></li> </ul> 11. Shut-down time for the system administrator solution (not including server-side solution if applicable): <ul style="list-style-type: none"> <li>• <i>Less than 1 minute.</i></li> </ul> 12. Start-up time for the server-side solution, if applicable: <ul style="list-style-type: none"> <li>• <i>Less than 30 minutes.</i></li> </ul> 13. Shut-down time for the server-side solution, if applicable: <ul style="list-style-type: none"> <li>• <i>Less than 30 minutes</i></li> </ul>		
<b>Information Technology Security Requirements</b>			
M60.	Does your company agree to supply documentation and evidence to support a Threat and Risk Assessment (TRA), if requested to do so by the CRA?		
M61.	Does your company agree to supply documentation and evidence to validate that the security requirements defined herein have been met by the proposed solution implementation at CRA, if requested to do so by the CRA?		
M62.	The proposed solution web console (if equipped) must be accessible to multiple users via a secure web (i.e. HyperText Transfer Protocol Secure (HTTPS)) based interface.		
M63.	The proposed solution user credentials for web console access (if equipped) must be encrypted in transit using the Transport Layer Security (TLS) v1.2 and newer.		
M64.	The proposed solution must be able to have automatic solution update features (if equipped) disabled.		
M65.	The proposed solution must not interfere with the operation of any Anti-Virus, Anti-Malware or Host Intrusion Detection systems operating on a host computer.		
M66.	The proposed solution must operate on networks running IPv4.		
M67.	The proposed solution must be able to have Internet / Online storage features (if equipped) disabled.		
M68.	The proposed solution must enforce approved authorizations for logical access to information and system resources in accordance with the user roles and access privileges defined in the system.		

**Mandatory Requirements**

ID	Mandatory Requirement Description	Comply Yes/No	Bidder Response/ Document Reference
M69.	The proposed solution must support the enforcement of a role-based access control policy over defined subjects and objects. In addition, the proposed solution must control access based upon organization-defined roles such as administrators, auditors, users with read/write/create permissions and users with read only permissions.		
M70.	The proposed solution must support the ability for the establishment and administration of privileged user accounts in accordance with a role-based access scheme that organizes allowed information system access and privileges into roles.		
M71.	The proposed solution must support the ability for monitoring of privileged role assignments.		
M72.	The proposed solution must support the ability for CRA administrators to suspend and/or delete privileged role assignments when privileged role assignments are no longer appropriate.		
M73.	The proposed solution must separate user functionality (including user interface services) from information system management functionality, in either a logical or physical manner.		
M74.	The proposed solution must prevent the presentation of information system management-related functionality at an interface for non-privileged users.		
M75.	The proposed solution must support audit record generation capability for auditable events (including system administrator and general user access to applications, database maintenance activities and system configuration changes) for information system components including but not limited to web servers and databases.		
M76.	The proposed solution must support the allowance for designated CRA personnel in an auditor role to select which auditable events are to be audited by specific components of the information system.		
M77.	The proposed solution must obscure feedback of authentication information during the authentication process to protect the information from possible exploitation/use by unauthorized individuals.		
M78.	The proposed solution must prohibit the use of cached authenticators after user log-out or session lock-out, whichever comes first.		
M79.	The proposed solution must, at managed interfaces, deny network communications traffic by default and allow network communications traffic by exception. For example: deny all, permit by exception.		

**Mandatory Requirements**

ID	Mandatory Requirement Description	Comply Yes/No	Bidder Response/ Document Reference
M80.	The proposed solution must fail securely by not entering into an unsecure state where intended security properties no longer hold, in the event of an operational failure of a boundary protection device.		
M81.	The proposed solution must generate error messages that provide information necessary for corrective actions without revealing information that could be exploited by adversaries.		
M82.	The proposed solution must support unique identification and authentication of organizational users (or processes acting on behalf of organizational users).		
M83.	The vendor must agree to share relevant incident and vulnerability information in the form of Security Awareness Guidance or Security Bulletins to enable CRA's goal of a strong security posture.		
M84.	The proposed solution must support the enforcement of approved authorizations for controlling the flow of information within the system and between interconnected systems.		
M85.	The proposed solution must check the validity of user input data to prohibit system compromises or exploits such as code injection.		
M86.	The proposed solution must include the ability to audit the execution of privileged functions.		
M87.	The proposed solution must prevent non-privileged users from executing privileged functions to include disabling, circumventing, or altering implemented security safeguards/countermeasures.		
M88.	The proposed solution must protect audit information and audit tools from unauthorized access, modification, and deletion.		
M89.	The proposed solution must use internal system clocks to generate time stamps for audit records.		
M90.	The proposed solution must record time stamps for audit records that can be mapped to Coordinated Universal Time (UTC) or Greenwich Mean Time (GMT).		
M91.	The proposed solution must support the use of authenticated connections to Exchange Server 2013 or newer for any system generated emails.		
<b>Training and Professional Services Requirements</b>			
M92.	Systems Administration training must be: <ul style="list-style-type: none"> <li>• Available in English and French</li> <li>• Delivered by an in person instructor</li> <li>• Delivered in the National Capital Region</li> <li>• Supplemented by electronic format training materials in English and</li> </ul>		



**Mandatory Requirements**

<b>ID</b>	<b>Mandatory Requirement Description</b>	<b>Comply Yes/No</b>	<b>Bidder Response/ Document Reference</b>
	French		
M93.	Operational training must be: <ul style="list-style-type: none"><li>• Available in English and French</li><li>• Delivered by an in person instructor</li><li>• Delivered using a 'train the trainer' approach</li><li>• Delivered in the National Capital Region</li><li>• Supplemented by electronic format training materials in English and French</li></ul>		
M94.	Training for technical support staff on the technical use, configuration and troubleshooting of the proposed solution must be: <ul style="list-style-type: none"><li>• Available in English and French</li><li>• Delivered by an in person instructor</li><li>• Delivered using a 'train the trainer' approach</li><li>• Delivered in the National Capital Region</li><li>• Supplemented by electronic format training materials in English and French</li></ul>		

**Mandatory Requirements**

ID	Mandatory Requirement Description	Comply Yes/No	Bidder Response/ Document Reference
M95.	<p>Bidders must be able to supply the following technical specialists:</p> <ul style="list-style-type: none"> <li>• A Business Analyst (BA) that possesses the following knowledge and experience:               <ul style="list-style-type: none"> <li>○ Minimum 5 years' experience (intermediate level) performing Business Analysis.</li> <li>○ Minimum 1 year experience working with the vendor's proposed COTS metadata management product.</li> </ul> </li> <li>• A Technical Architect (TA) that possesses the following knowledge and experience:               <ul style="list-style-type: none"> <li>○ Minimum 10 years' experience (senior level) performing Technical Architecture.</li> <li>○ At least 1 year experience working with the vendor's proposed COTS metadata management product.</li> </ul> </li> <li>• A Data Architect (DA) that possesses the following knowledge and experience:               <ul style="list-style-type: none"> <li>○ Minimum 10 years' experience (senior level) performing Data Architecture.</li> <li>○ Minimum 1 year experience working with the vendor's proposed COTS metadata management product.</li> </ul> </li> <li>• A Systems Analyst (SA)/developer.               <ul style="list-style-type: none"> <li>○ Minimum 5 years' experience (intermediate level) performing Systems Analysis/software development.</li> <li>○ Minimum 1 year experience working with the vendor's proposed COTS metadata management product.</li> </ul> </li> </ul>		

<b>Rated Requirements</b>			
<b>ID</b>	<b>Rated Requirement Description</b>	<b>Rating Criteria</b>	<b>Bidder Response</b>
<b>General Requirements</b>			
R1.	The proposed solution provides a complete and consolidated view of the metadata within the repository, accessible to all users.	20 points	
R2.	The proposed solution should allow users to easily toggle between English and French language user interfaces.	<b>Maximum 20 points</b>  20 points: being able to toggle between languages, displaying the same page.  10 points: being able to toggle between languages, but landing on a splash or home page.	
R3.	The proposed solution allows a user to browse metadata item types via a hierarchical structure. For example, categories and sub-categories of metadata item types.	15 points	
R4.	The highest ranked vendor agrees to provide the metamodel(s) for the solution at the time of Proof of Proposal (PoP).	<b>Maximum 10 points for both</b>  7 points: the physical metamodel will be provided  3 points: the logical metamodel will be provided	
R5.	The proposed solution provides relevant and timely messages including error and information messages. Messages should be provided in business terms in the language of the user interface.	10 points	
R6.	The proposed solution provides forward and backward navigation controls within all multi-step processes.	15 points	
R7.	The proposed solution allows actions to be reversed with an undo feature.	15 points	
R8.	The proposed solution supports multiple, independent sessions per user. For example, a user should be able to have multiple tabs of the solution open in their browser.	10 points	

**Rated Requirements**

<b>ID</b>	<b>Rated Requirement Description</b>	<b>Rating Criteria</b>	<b>Bidder Response</b>
R9.	The proposed solution should include the ability to apply spelling and grammar check functionality in English and French.	<p><b>Maximum 12 points for all</b></p> <p>3 points: for spell check in English</p> <p>3 points: for spell check in French</p> <p>3 points: for grammar check in English</p> <p>3 points: for grammar check in French</p>	
R10.	The proposed solution should present all interfaces in a consistent format and style.	<p><b>Maximum 7 points</b></p> <p>7 points: the proposed solution uses one style for all interfaces.</p> <p>4 points: the proposed solution uses two styles.</p>	
R11.	The proposed solution has navigation controls which are relevant to the current area of the solution.	8 points	
R12.	The proposed solution should include shortcuts as follows: <ul style="list-style-type: none"> <li>• Home</li> <li>• Help</li> <li>• Search</li> <li>• Metadata Glossary</li> </ul>	<p><b>Maximum 8 points</b></p> <p>2 points per bullet</p>	
R13.	The proposed solution should proactively prevent errors by: <ul style="list-style-type: none"> <li>• Making it difficult to take incorrect actions (for example design links and buttons to be distinctive); and</li> <li>• Making it difficult to take invalid actions (for example limit user choices, and provide examples for data entry)</li> </ul>	<p><b>Maximum 6 points</b></p> <p>3 points per bullet</p>	

<b><u>Rated Requirements</u></b>			
<b>ID</b>	<b>Rated Requirement Description</b>	<b>Rating Criteria</b>	<b>Bidder Response</b>
R14.	The proposed solution should facilitate both copy/paste and cut/paste functionality.	<p><b>Maximum 10 points</b></p> <p>10 points: both Copy/paste and Cut/paste functionality is included</p> <p>7 points: only Copy/paste functionality is included</p> <p>4 points: only Cut/paste functionality is included</p>	
R15.	<p>The proposed solution should allow authorized users to select multiple metadata item types, metadata items or metadata item attributes for a common action.</p> <p>Common actions requested:</p> <ul style="list-style-type: none"> <li>• Assign metadata item types, metadata items, and metadata item attributes to a user or user group</li> <li>• Update contact information</li> <li>• Delete metadata items, metadata item attributes, and metadata item types</li> <li>• Assign categories to metadata items, metadata item attributes and metadata item types</li> <li>• Update metadata item attribute information</li> </ul>	<p><b>Maximum 10 points</b></p> <p>2 points per bullet</p>	
R16.	The proposed solution displays an indication to users to notify when the solution is executing tasks.	7 points	
R17.	The proposed solution should include a help function in English.	<p><b>Maximum 8 points</b></p> <p>8 points: for English context sensitive and general help functions</p> <p>5 points: for an English general help only function</p>	

<b>Rated Requirements</b>			
<b>ID</b>	<b>Rated Requirement Description</b>	<b>Rating Criteria</b>	<b>Bidder Response</b>
R18.	The proposed solution should include a help function in French.	<b>Maximum 8 points</b>  8 points: for French context sensitive and general help functions  5 points: for a French general help only function	
R19.	The proposed solution automatically uses the language preference defined in the user's computer or web browser settings.	8 points	
R20.	The proposed solution allows the user to define a preferred language that controls the language of the solution and is remembered for subsequent logins.	7 points	
R21.	The proposed solution should allow a user the ability to tailor the interface to select which metadata item types and metadata item attributes are displayed.	<b>Maximum 4 points</b>  4 points: for user defined tailoring  2 points: for system administration defined tailoring	
R22.	The proposed solution includes the ability to define a set of self-defined values for metadata item attributes and self-defined metadata item attributes. For example: the ability to create a dropdown list with self-defined values.	4 points	
R23.	The proposed solution includes all system administrator interfaces in French.	3 points	
<b>Capture and Maintenance of Metadata</b>			

**Rated Requirements**

ID	Rated Requirement Description	Rating Criteria	Bidder Response
R24.	<p>The proposed solution should include the ability to <u>automatically</u> collect from various sources, <u>the following relationships</u>, defined between metadata items and usages; and to create, read, update and delete these relationships within the repository.</p> <ul style="list-style-type: none"> <li>• Data Development Lifecycle Lineage</li> <li>• Hierarchical lineage</li> <li>• Foreign Key</li> <li>• Other Metadata item relationships               <ul style="list-style-type: none"> <li>▪ Term to Abbreviation</li> <li>▪ Synonym</li> <li>▪ Classification Scheme to Metadata Item</li> <li>▪ Domain to metadata item</li> <li>▪ Deprecation Relationships (reference to a superseded Item)</li> <li>▪ Logical data model attribute to suggested physical name</li> </ul> </li> </ul> <p>(Refer to <i>APPENDIX E – Metadata Item Attributes</i> for description.)</p>	<p><b>Maximum 24 points for all</b></p> <p>6 points each, to a maximum of 12</p> <ul style="list-style-type: none"> <li>• Data Development Lifecycle Lineage</li> <li>• Hierarchical lineage</li> </ul> <p>2 points each, to a maximum of 10</p> <ul style="list-style-type: none"> <li>• Foreign Key</li> <li>• Term to Abbreviation</li> <li>• Synonym</li> <li>• Classification Scheme to Metadata Item</li> <li>• Domain to metadata item</li> </ul> <p>1 point each to a maximum of 2</p> <ul style="list-style-type: none"> <li>• Deprecation Relationships (reference to a superseded Item)</li> <li>• Logical data model attribute to suggested physical names</li> </ul>	

**Rated Requirements**

ID	Rated Requirement Description	Rating Criteria	Bidder Response
R25.	<p>The proposed solution should include the ability for authorized <u>users</u> to create, read, update, and delete <u>the following relationships</u> between metadata items and usages:</p> <ul style="list-style-type: none"> <li>• Data Development Lifecycle Lineage</li> <li>• Hierarchical lineage</li> <li>• Foreign Key</li> <li>• Other Metadata item relationships                             <ul style="list-style-type: none"> <li>▪ Term to Abbreviation</li> <li>▪ Synonym</li> <li>▪ Classification Scheme to Metadata Item</li> <li>▪ Domain to metadata item</li> <li>▪ Deprecation Relationships (reference to a superseded Item)</li> <li>▪ Logical data model attribute to suggested physical names</li> </ul> </li> </ul> <p>(For more information refer to description column of <i>APPENDIX E – Metadata Item Attributes</i>)</p>	<p><b>Maximum 22 points for all</b></p> <p>5 points each, to a maximum 10</p> <ul style="list-style-type: none"> <li>• Data Development Lifecycle Lineage</li> <li>• Hierarchical lineage</li> </ul> <p>2 points each, to a maximum of 10</p> <ul style="list-style-type: none"> <li>• Foreign Key</li> <li>• Term to Abbreviation</li> <li>• Synonym</li> <li>• Classification Scheme to Metadata Item</li> <li>• Domain to metadata item</li> </ul> <p>1 point each, to a maximum of 2</p> <ul style="list-style-type: none"> <li>• Deprecation Relationships (reference to a superseded Item)</li> <li>• Logical data model attribute to suggested physical names</li> </ul>	
R26.	<p>The proposed solution should include programmatic access, for example, via an Application Programming Interface (API), to the metadata managed by the solution.</p>	<p><b>Maximum of 20 points</b></p> <p>20 points: for read and write access</p> <p>15 points: for read only access</p>	



**Rated Requirements**

ID	Rated Requirement Description	Rating Criteria	Bidder Response
R27.	<p>The proposed solution should include the ability for the software/tools listed below to directly read the metadata within the solution:</p> <p><u>Data Modelling:</u></p> <ul style="list-style-type: none"> <li>• CA ERwin v9.5 and newer</li> </ul> <p><u>Extract, Transform, and Load (ETL):</u></p> <ul style="list-style-type: none"> <li>• IBM DataStage v8.5 and newer</li> </ul> <p><u>Other:</u></p> <ul style="list-style-type: none"> <li>• IBM Cognos BI v10.2.1 FixPack 5 and newer (including Cognos Framework Manager, Cognos Report Studio, IBM Cognos Query Studio)</li> <li>• IBM SPSS Modeller v14.2 FixPack 3 and newer</li> <li>• IBM Transformer 10.2.1</li> <li>• SAS v7.3, v9.2 and newer</li> <li>• Microsoft Excel</li> <li>• Support for ODBC and JDBC connections</li> </ul>	<p><b>Maximum of 20 points for all</b></p> <p>4 points each, to a maximum of 12</p> <ul style="list-style-type: none"> <li>• CA ERwin v9.5 and newer</li> <li>• IBM DataStage v8.5 and newer</li> <li>• IBM Cognos BI v10.2.1 FixPack 5 and newer (including Cognos Framework Manager, Cognos Report Studio, IBM Cognos Query Studio)</li> </ul> <p>2 points each, to a maximum of 8</p> <ul style="list-style-type: none"> <li>• IBM SPSS Modeller v14.2 FixPack 3 and newer</li> <li>• IBM Transformer 10.2.1</li> <li>• SAS v7.3, v9.2 and newer</li> <li>• Microsoft Excel</li> <li>• Support for ODBC and JDBC connections</li> </ul>	
R28.	<p>The proposed solution includes the ability for a Business Data Steward (BDS) to automatically be notified of any changes made to metadata items assigned to them.</p>	<p>20 points</p>	
R29.	<p>The proposed solution should allow authorized users to create, read, update, and delete usages of a metadata item within the user interface.</p>	<p><b>Maximum of 12 points</b></p> <p>12 points: for create, read, update, and delete</p> <p>8 points: for create, read, update only</p>	

**Rated Requirements**

ID	Rated Requirement Description	Rating Criteria	Bidder Response
R30.	The proposed solution should allow authorized users to create, read, update, and delete self-defined metadata item attributes for metadata item usages within the user interface.	<p><b>Maximum of 12 points</b></p> <p>12 points: for create, read, update, and delete</p> <p>8 points: for create, read, update only</p>	
R31.	The proposed solution should allow authorized users to create, read, update, and delete metadata for pre-defined and self-defined metadata item attributes for metadata item usages within the user interface.	<p><b>Maximum of 12 points</b></p> <p>12 points: for create, read, update, and delete</p> <p>8 points: for create, read, update only</p>	
R32.	The proposed solution should be able to automatically collect usages of a metadata item, which includes be able to create, update, and delete as required.	<p><b>Maximum of 12 points</b></p> <p>12 points: for create, update, and delete</p> <p>8 points: for create, update only</p>	
R33.	The proposed solution should be able to automatically collect metadata for attributes of metadata item usages, which includes be able to create, update, and delete as required.	<p><b>Maximum of 12 points</b></p> <p>12 points: for create, update, and delete</p> <p>8 points: for create, update only</p>	
R34.	The proposed solution should be able to <u>automatically collect</u> metadata from a variety of sources and create, update, and delete metadata items for <u>self-defined metadata item types</u> within the repository.	<p><b>Maximum of 12 points</b></p> <p>12 points: for create, update, and delete</p> <p>8 points: for create, update only</p>	
R35.	The proposed solution should be able to <u>automatically collect</u> metadata from a variety of sources and create, update, and delete metadata for <u>self-defined metadata item attributes</u> for metadata item types within the repository.	<p><b>Maximum of 12 points</b></p> <p>12 points: for create, update, and delete</p> <p>8 points: for create, update only</p>	

**Rated Requirements**

ID	Rated Requirement Description	Rating Criteria	Bidder Response
R36.	<p>The proposed solution should include a “self-defined load” capability to design and build customized processes to load metadata into the solution.</p> <p>Specifically, the following should be able to be imported into the solution:</p> <ul style="list-style-type: none"> <li>• Form Release</li> <li>• Form Section</li> <li>• Form Field</li> <li>• Domain values/lists</li> <li>• The assigned BDS</li> <li>• Organizational unit</li> <li>• Terms and abbreviations</li> <li>• Source to target mappings with their transformation rules, and the ability to link the mapping to the business and physical names</li> <li>• Current statuses</li> <li>• Classification schemes</li> <li>• Relationship between metadata items and classification schemes</li> <li>• Relationships between metadata items and domains</li> </ul>	<p><b>Maximum 14 points</b></p> <p>2 points per bullet</p>	
R37.	<p>The proposed solution should include the ability to export the metadata from the solution directly into the following formats:</p> <ul style="list-style-type: none"> <li>• XML</li> <li>• XLSX</li> <li>• PDF</li> <li>• Cobol Copybook and/or Cobol File definition</li> <li>• JSON</li> <li>• Parsable Plain Text (.txt)</li> <li>• DOCX</li> </ul>	<p><b>Maximum 10 points</b></p> <p>2 points per bullet</p>	

**Rated Requirements**

ID	Rated Requirement Description	Rating Criteria	Bidder Response
R38.	<p>The proposed solution should include the ability to directly import metadata from the tools below, and integrate the imported metadata by relating it to the other metadata within the solution. Importing includes creating, updating, and deleting metadata as required.</p> <ul style="list-style-type: none"> <li>• IBM Transformer 10.2.1 and newer</li> <li>• IBM Cognos Impromptu User 7.5</li> <li>• Pentaho</li> <li>• LDAP (Active Directory)</li> <li>• IBM SPSS Modeller v14.2 and newer</li> <li>• SAS v7.3 and newer</li> <li>• XML Schema</li> </ul>	<p><b>Maximum 14 points</b></p> <p>2 points per bullet to import a minimum of three metadata elements from the tool.</p>	
R39.	<p>The proposed solution should include the ability to directly import metadata from the formats below, and integrate the imported metadata by relating it to the other metadata within the solution. Importing includes creating, updating, and deleting metadata as required.</p> <ul style="list-style-type: none"> <li>• XML</li> <li>• XLSX</li> <li>• Parsable Plain Text (.txt)</li> <li>• JSON</li> </ul>	<p><b>Maximum 8 points</b></p> <p>2 points per bullet to import a minimum of three metadata elements from the format.</p>	

**Rated Requirements**

ID	Rated Requirement Description	Rating Criteria	Bidder Response
R40.	<p>The proposed solution should include the ability to directly import metadata from the Database Management Systems below, and integrate the imported metadata by relating it to the other metadata within the solution. Importing includes creating, updating, and deleting metadata as required.</p> <p><u>Database Management Systems:</u></p> <ul style="list-style-type: none"> <li>• Sybase</li> <li>• Oracle Database v11g and newer</li> <li>• MS SQL (SQL SERVER) 2008 R2 and newer</li> <li>• MySQL v5.6 and newer</li> <li>• JavaDB v10.10 and newer</li> </ul> <p>For each source, the following metadata elements should be importable if the Database Management System contains this information:</p> <ul style="list-style-type: none"> <li>• Database Names</li> <li>• Schema Names</li> <li>• Table Names</li> <li>• Column Names</li> <li>• Data Types</li> <li>• Length</li> <li>• Precision/Scale</li> <li>• Null Indicator</li> <li>• Relationships between databases and schemas</li> <li>• Relationships between schemas and tables</li> <li>• Relationships between tables and columns</li> </ul>	<p><b>Maximum 10 points</b></p> <p>2 points per bullet</p> <p>All listed metadata elements should be importable, if the Database Management System contains this information.</p>	
R41.	<p>The proposed solution should include the ability to directly import metadata from the sources below, and integrate the imported metadata by relating it to the other metadata within the solution. Importing includes creating, updating, and deleting metadata as required.</p> <ul style="list-style-type: none"> <li>• SAP ERP v6.0 (modules FI, HR and Travel)</li> <li>• Cobol Copybook and/or Cobol File definition</li> <li>• Microsoft Access 2010 and newer</li> </ul>	<p><b>Maximum of 4 points</b></p> <p>2 points per bullet to import a minimum of three metadata elements from the sources.</p>	

<b>Rated Requirements</b>			
<b>ID</b>	<b>Rated Requirement Description</b>	<b>Rating Criteria</b>	<b>Bidder Response</b>
R42.	<p>The proposed solution should include the ability to directly import metadata from the sources below, and integrate the imported metadata by relating it to the other metadata within the solution. Importing includes creating, updating, and deleting metadata as required.</p> <ul style="list-style-type: none"> <li>• IBM Transformer 10.2.1 and newer</li> <li>• IBM Cognos Impromptu User 7.5</li> <li>• Pentaho</li> <li>• LDAP (Active Directory)</li> <li>• IBM SPSS Modeller v14.2 and newer</li> <li>• SAS v7.3 and newer</li> <li>• XML Schema</li> <li>• XML</li> <li>• CSV file format</li> <li>• XLSX</li> <li>• Parsable Plain Text (.txt)</li> <li>• JSON</li> </ul> <p>For example, the ability to import metadata and relate it to metadata from data models, Extract Transform and Load (ETL) tools, and BI reporting tools via name matching or description/definition matching</p>	<p><b>Maximum 8 points</b></p> <p>1 point per bullet</p>	
R43.	<p>The proposed solution includes the ability for users to review the imported metadata including any relationships created during the import process.</p>	<p>10 points</p>	
R44.	<p>The proposed solution should include the metadata item types listed in <i>APPENDIX D – Metadata Item Types</i> with the attributes specified in <i>APPENDIX E – Metadata Item Attributes</i> according to the <i>APPENDIX F – Pre-defined Metadata Requirements Matrix</i> provided as pre-defined metadata item types within the proposed solution.</p> <p>Refer to the <i>APPENDIX F – Pre-defined Metadata Requirements Matrix</i> which outlines the metadata item types and respective attributes for further context.</p>	<p><b>Maximum 30 points</b></p> <p>1 point per pre-defined metadata item type with the correctly associated metadata item attributes as outlined in the <i>APPENDIX F - Pre-defined Metadata Requirements Matrix</i>.</p>	

<b><u>Rated Requirements</u></b>			
<b>ID</b>	<b>Rated Requirement Description</b>	<b>Rating Criteria</b>	<b>Bidder Response</b>
R45.	The proposed solution should allow authorized users to update and hide pre-defined <u>metadata item types</u> from within the user interface.	<b>Maximum of 10 points for both</b>  5 points: for update 5 points: for hide	
R46.	The proposed solution should allow authorized users to update and hide pre-defined <u>metadata item attributes</u> from within the user interface.	<b>Maximum of 12 points for both</b>  6 points: for update 6 points: for hide	
R47.	The proposed solution allows users to track the changes made to metadata items through versioning functionality.	15 points	
R48.	The proposed solution should provide the version history of metadata items. Specifically, the solution should include a version number, the date and time, the identity of the user or the source that made the change, and highlight the changes between versions.  Describe how the proposed solution effectively manages versions of metadata items, including how versioning impacts, and is impacted by the governance process.	<b>Maximum 15 points for all</b>  4 points: for highlighting the changes between versions  4 points: for providing the date and time  4 points: for identifying the user or source  3 points: for providing a version number	
R49.	The proposed solution interface is configurable to allow users to filter their view of metadata based on its status within the governance process.	12 points	
R50.	The proposed solution provides notification to selected user groups when a metadata item has been updated for one language but not for the other.	7 points	
R51.	The proposed solution includes the ability to cancel/rollback any imported metadata.	8 points	

<b><u>Rated Requirements</u></b>			
<b>ID</b>	<b>Rated Requirement Description</b>	<b>Rating Criteria</b>	<b>Bidder Response</b>
R52.	<p>The proposed solution includes the ability to run scheduled metadata extraction jobs from <b>all</b> sources listed below:</p> <ul style="list-style-type: none"> <li>• CA Erwin v9.5</li> <li>• IBM DataStage v8.5</li> <li>• IBM DB2 z/OS v10 and newer</li> <li>• IBM DB2/LUW v9.7, v10.5 and newer</li> <li>• PostgreSQLv9.3, v9.4 and newer</li> <li>• IBM Netezza v7.2 and newer</li> <li>• IBM Cognos BI v10.2.1 FixPack 5 and newer (including IBM Framework Manager, IBM Cognos Report Studio, IBM Cognos Query Studio)</li> </ul>	7 points	
R53.	The proposed solution allows users to track the changes within a version (sub-versioning).	10 points	
R54.	The proposed solution should provide the history of sub-versions, specifically it should include a sub-version number, the date and time, the identity of the user or the source that made the change, and highlight the changes between sub-versions.	<p><b>Maximum 8 points for all</b></p> <p>3 points: for highlighting the changes between sub-versions</p> <p>2 points: for providing the date and time</p> <p>2 points: for identifying the user or source</p> <p>1 point: for providing version number</p>	
R55.	The proposed solution interface allows users to control their view based on the values of the metadata item attributes.	7 points	
R56.	The proposed solution allows authorized users to perform read-only queries on the repository using third-party tools.	3 points	
<b>Governance</b>			



<b>Rated Requirements</b>			
<b>ID</b>	<b>Rated Requirement Description</b>	<b>Rating Criteria</b>	<b>Bidder Response</b>
R57.	The proposed solution should support collaboration between users within the tool, such as: <ul style="list-style-type: none"> <li>• Sharing direct access links</li> <li>• Sharing comments</li> <li>• Other (please describe)</li> </ul>	<b>Maximum 12 points</b>  4 points per bullet	
R58.	The proposed solution should allow users to propose a change to a metadata item to the responsible BDS/delegate for review.	<b>Maximum 15 points</b>  15 points: functionality exists within the proposed solution without the use of an external application  10 points: functionality facilitated through the proposed solution with use of an external application. For example, an email application	
R59.	The proposed solution permits authorized administrators to configure the solution to circumvent the governance process for any metadata item types and metadata item attributes.	12 points	
R60.	The proposed solution allows authorized users to dispose of obsolete or withdrawn metadata items, metadata item attributes, and metadata item types.	10 points	
R61.	The proposed solution should allow users to subscribe to updates on selected metadata items.	<b>Maximum 10 points</b>  10 points: functionality exists within the proposed solution  4 points: functionality requires the use of an external application. For example, email.	

**Rated Requirements**

ID	Rated Requirement Description	Rating Criteria	Bidder Response
R62.	<p>The proposed solution should allow authorized users to input multiple contacts for metadata items. For each contact the solution should allow for the input of:</p> <ul style="list-style-type: none"> <li>• Name</li> <li>• CRA User Identifier</li> <li>• Email</li> <li>• Role</li> <li>• Org unit</li> <li>• Phone number</li> <li>• CRA Position</li> </ul>	<p><b>Maximum 6 points for all</b></p> <p>1 point each for:</p> <ul style="list-style-type: none"> <li>• Name</li> <li>• CRA User Identifier</li> <li>• Email</li> <li>• Role</li> <li>• Org unit</li> </ul> <p>1/2 point each for:</p> <ul style="list-style-type: none"> <li>• Phone number</li> <li>• CRA Position</li> </ul>	
R63.	<p>The proposed solution should notify the appropriate user(s) when they have a task to perform.</p>	<p><b>Maximum 4 points for both</b></p> <p>3 points: notified within the proposed solution</p> <p>1 point: user is notified via email</p>	
R64.	<p>The proposed solution is able to constrain data entry to fields, based on business rules.</p>	<p>4 points</p>	
<b>Searching, Analysis and Reporting</b>			
R65.	<p>The proposed solution should include impact analysis reports functionality. For example, reports showing the impacts of changing a metadata item name.</p>	<p><b>Maximum 20 points for both</b></p> <p>14 points: the proposed solution provides the report in a graphical format</p> <p>6 points: the proposed solution provides the report in another format</p>	

**Rated Requirements**

ID	Rated Requirement Description	Rating Criteria	Bidder Response
R66.	<p>The proposed solution should include the ability for a search to be performed when initiated from the applications listed below, on the selected word(s) with “2 or fewer mouse button clicks”, or “2 or fewer keyboard keystrokes” or “one mouse button click and one keyboard keystroke” without accessing the main solution interface. (<i>Typing, or cut/paste mouse button clicks or keyboard keystrokes are not factored in to the limits above.</i>) The results should be displayed to the user as quick reference information that can be further investigated if desired.</p> <ul style="list-style-type: none"> <li>• Microsoft Office Word</li> <li>• Microsoft Office Excel</li> <li>• Microsoft Office Outlook</li> <li>• Microsoft Office PowerPoint</li> <li>• Notepad</li> <li>• CA ERWin</li> <li>• IBM DataStage</li> <li>• IBM Cognos BI</li> <li>• IBM Transformer</li> <li>• Attachmate Reflection</li> <li>• SAS</li> <li>• SAP</li> <li>• SPSS</li> </ul>	<p><b>Maximum of 36 points for all</b></p> <p>3 points per bullet</p>	

<b>Rated Requirements</b>			
<b>ID</b>	<b>Rated Requirement Description</b>	<b>Rating Criteria</b>	<b>Bidder Response</b>
R67.	<p>The proposed solution should allow for graphical representation of the following relationships, referenced in <i>APPENDIX E – Metadata Item Attributes</i>.</p> <ul style="list-style-type: none"> <li>• Data lineage</li> <li>• Data Development Lifecycle Lineage</li> <li>• Hierarchical lineage</li> <li>• Foreign Key</li> </ul> <p>Other Metadata item relationships</p> <ul style="list-style-type: none"> <li>• Term to Abbreviation</li> <li>• Synonym</li> <li>• Classification Scheme to Metadata Item</li> <li>• Domain to metadata item</li> <li>• Deprecation Relationships (reference to a superseded Item)</li> <li>• Logical data model attribute to suggested physical names</li> </ul> <p>(See more information in the description column of <i>APPENDIX E – Metadata Item Attributes</i>.)</p>	<p><b>Maximum 20 points for all</b></p> <p>4 points each:</p> <ul style="list-style-type: none"> <li>• Data lineage</li> <li>• Data Development Lifecycle Lineage</li> <li>• Hierarchical lineage</li> <li>• Foreign Key</li> </ul> <p>1 point each:</p> <ul style="list-style-type: none"> <li>• Term to Abbreviation</li> <li>• Synonym</li> <li>• Classification Scheme to Metadata Item</li> <li>• Domain to metadata item</li> <li>• Deprecation Relationships (reference to a superseded Item)</li> <li>• Logical data model attribute to suggested physical names</li> </ul>	
R68.	<p>The proposed solution should allow for graphical representations of relationships to be exported in the following formats:</p> <ul style="list-style-type: none"> <li>• PDF</li> <li>• Microsoft Visio (.vsd)</li> <li>• HTML</li> <li>• Common Graphic formats (e.g., JPG, PNG) where applicable</li> </ul>	<p><b>Maximum 4 points</b></p> <p>1 point per bullet</p>	
R69.	<p>The proposed solution should allow for tabular representations of relationships to be exported in the following formats:</p> <ul style="list-style-type: none"> <li>• CSV</li> <li>• PDF</li> <li>• HTML</li> </ul>	<p><b>Maximum 3 points</b></p> <p>1 point per bullet</p>	

<b>Rated Requirements</b>			
<b>ID</b>	<b>Rated Requirement Description</b>	<b>Rating Criteria</b>	<b>Bidder Response</b>
R70.	<p>The proposed solution should allow authorized users to create, modify, and execute the following types of reports:</p> <ul style="list-style-type: none"> <li>• Pre-defined reports – contents are pre-defined</li> <li>• Parameterized reports – pre-packaged report of the results generated within the parameters set;</li> <li>• Ad-hoc reports – build a report from scratch</li> </ul>	<p><b>Maximum 18 points</b></p> <p>6 points per bullet to be able to create, modify, and execute</p>	
R71.	<p>The proposed solution should include the following search features and options:</p> <ol style="list-style-type: none"> <li>1. “Match all”, “Match any”, and “Exact Match”.</li> <li>2. Use of Boolean operators (e.g., &amp;,  , - )</li> <li>3. Wildcard searching (e.g., Search: Tax* Find: Tax, Taxes, Tax-Free, Taxpayer)</li> <li>4. Filter by one or more metadata item types</li> <li>5. Search by date (show metadata items that have been modified or added since XX date)</li> <li>6. Sort search results based on the relevance of the search (closest match), by alphabetical order, by last modified date, by status level or by customized attributes.</li> <li>7. Share search results with other users</li> <li>8. Provide recent search history of words or phrases searched by a user</li> <li>9. Use of Proximity operators</li> <li>10. Group search words or phrases together (e.g., (“Exact Match”) &amp; (Benefits -Returns))</li> <li>11. Return user selected metadata item attributes</li> <li>12. Sort search results by one or more metadata item attributes</li> <li>13. Provide highlighted text for matched text in results</li> <li>14. Sort search results by user selected requirements</li> <li>15. Search prediction capability (auto-complete search)</li> <li>16. Search results that can be exported to various formats such as XLSX, CSV, XML</li> <li>17. Provide a series of probing questions to assist the user in searching metadata (e.g., an interactive wizard that would assist the user in refining their search).</li> </ol>	<p><b>Maximum 42 points</b></p> <p><b><i>A minimum of 15 points must be obtained to receive any points on this requirement</i></b></p> <p>3 points per numbered feature/option</p>	

**Rated Requirements**

ID	Rated Requirement Description	Rating Criteria	Bidder Response
R72.	<p>The proposed solution should allow for tabular representation of the following relationships, referenced in <i>APPENDIX E – Metadata Item Attributes</i>.</p> <ul style="list-style-type: none"> <li>• Data lineage</li> <li>• Data Development Lifecycle Lineage</li> <li>• Hierarchical lineage</li> <li>• Foreign Key</li> </ul> <p>Other Metadata item relationships</p> <ul style="list-style-type: none"> <li>• Term to Abbreviation</li> <li>• Synonym</li> <li>• Classification Scheme to Metadata Item</li> <li>• Domain to metadata item</li> <li>• Deprecation Relationships (reference to a superseded Item)</li> <li>• Logical data model attribute to suggested physical names</li> </ul> <p>(See more information in the description column of <i>APPENDIX E – Metadata Item Attributes</i>.)</p>	<p><b>Maximum 12 points for all</b></p> <p>3 points each:</p> <ul style="list-style-type: none"> <li>• Data lineage</li> <li>• Data Development Lifecycle Lineage</li> <li>• Hierarchical lineage</li> <li>• Foreign Key</li> </ul> <p>1 point each:</p> <ul style="list-style-type: none"> <li>• Term to Abbreviation</li> <li>• Synonym</li> <li>• Classification Scheme to Metadata Item</li> <li>• Domain to metadata item</li> <li>• Deprecation Relationships (reference to a superseded Item)</li> <li>• Logical data model attribute to suggested physical names</li> </ul>	
R73.	<p>The proposed solution should include the ability to export all report results directly into the following formats:</p> <ul style="list-style-type: none"> <li>• CSV</li> <li>• XLSX</li> <li>• Parsable Plain Text (.txt)</li> <li>• PDF</li> <li>• DOCX</li> <li>• RTF</li> <li>• XML</li> <li>• HTML</li> <li>• Common Graphic formats (e.g., JPG, PNG) where applicable</li> </ul>	<p><b>Maximum 12 points for all</b></p> <p>2 points each, for:</p> <ul style="list-style-type: none"> <li>• CSV</li> <li>• XLSX</li> <li>• Parsable Plain Text (.txt)</li> </ul> <p>1 point each, for:</p> <ul style="list-style-type: none"> <li>• PDF</li> <li>• DOCX</li> <li>• RTF</li> <li>• XML</li> <li>• HTML</li> <li>• Common Graphic formats (e.g., JPG, PNG) where applicable</li> </ul>	

**Rated Requirements**

ID	Rated Requirement Description	Rating Criteria	Bidder Response
R74.	The proposed solution should include the ability to create, modify, delete, save, and share custom report templates, from the business user interface.	<p><b>Maximum 13 points for all</b></p> <p>3 points: for being able to create new report templates</p> <p>3 points: for being able to modify report templates</p> <p>3 points: for being able to delete created report templates</p> <p>3 points: for being able to save new and modified report templates</p> <p>1 point: for being able to share created report templates</p>	
R75.	The proposed solution should include the ability to create, modify, delete, save, and share custom dashboard report templates, from the business user interface.	<p><b>Maximum 13 points for all</b></p> <p>3 points: for being able to create new dashboard templates</p> <p>3 points: for being able to modify dashboard templates</p> <p>3 points: for being able to delete created dashboard templates</p> <p>3 points: for being able to save new and modified dashboard templates</p> <p>1 point: for being able to share created dashboard templates</p>	

**Rated Requirements**

ID	Rated Requirement Description	Rating Criteria	Bidder Response
R76.	The proposed solution should include the ability for authorized users to schedule one-time and reoccurring reports and facilitate the distribution.	<p><b>Maximum 6 points for both</b></p> <p>3 points: the ability to schedule reports</p> <p>3 points: the ability to facilitate the distribution</p>	
R77.	<p>The proposed solution should include the ability to interact with the graphical representation of the relationships in the following ways:</p> <ul style="list-style-type: none"> <li>• Expand (drill down)</li> <li>• Zoom-in zoom-out</li> <li>• Scroll while viewing</li> <li>• Toggle between business and physical name</li> </ul>	<p><b>Maximum 8 points</b></p> <p>2 points per bullet</p>	
R78.	<p>The proposed solution should provide statistical reports on the following:</p> <ul style="list-style-type: none"> <li>• Search trends</li> <li>• Page response time</li> <li>• Active users per hour</li> </ul>	<p><b>Maximum 3 points</b></p> <p>1 point per bullet</p>	
R79.	<p>The proposed solution should allow users, when creating reports, to choose parameters and select values using either;</p> <ul style="list-style-type: none"> <li>• Drag and drop</li> <li>• Click and Choose</li> <li>• Manual entry</li> </ul>	<p><b>Maximum 5 points for all</b></p> <p>2 points each, for:</p> <ul style="list-style-type: none"> <li>• Drag and drop</li> <li>• Click and Choose</li> </ul> <p>1 point for:</p> <ul style="list-style-type: none"> <li>• Manual entry</li> </ul>	



<b>Rated Requirements</b>			
<b>ID</b>	<b>Rated Requirement Description</b>	<b>Rating Criteria</b>	<b>Bidder Response</b>
R80.	<p>The proposed solution should provide the following pre-defined reports:</p> <ol style="list-style-type: none"> <li>1. Metadata items associated with a certain user</li> <li>2. Metadata items at a specific status</li> <li>3. Number of metadata items assigned to a given user</li> <li>4. How often a metadata item is viewed</li> <li>5. Who has viewed any given metadata item</li> <li>6. Percentage of items, by status, associated to a user</li> <li>7. A list of the most used metadata items</li> <li>8. A list of metadata items within a specific database</li> <li>9. A list of metadata items within a specific data model</li> <li>10. A list of metadata items without a description</li> <li>11. A list of metadata items without a BDS</li> </ol>	<p><b>Maximum 11 points</b></p> <p>1 point per numbered item</p>	
R81.	<p>The proposed solution should allow authorized users to customize the following in the reports:</p> <ol style="list-style-type: none"> <li>1. Page numbering</li> <li>2. Sorting and grouping;</li> <li>3. Data arrangement (e.g. change physical location of data within the report)</li> <li>4. Orientation</li> <li>5. Style, colour, font, size, italics, bolding, and underlining</li> <li>6. Headings/Titles</li> <li>7. Headers/footers</li> </ol>	<p><b>Maximum of 4 points</b></p> <p>1 point per numbered item</p>	
<b>User, Role, and Access management</b>			
R82.	<p>The proposed solution includes the ability for a business data steward (BDS) to delegate specific governance responsibilities for metadata items to other users.</p>	16 points	
R83.	<p>The proposed solution includes the ability to enforce that only the assigned BDS and assigned delegates are permitted to make changes to a metadata item.</p>	16 points	

<b>Rated Requirements</b>			
<b>ID</b>	<b>Rated Requirement Description</b>	<b>Rating Criteria</b>	<b>Bidder Response</b>
R84.	<p>The proposed solution should include the ability to control access to the following, through an access management interface:</p> <ul style="list-style-type: none"> <li>• Self-defined metadata item types</li> <li>• Self-defined metadata attributes</li> <li>• Sets of metadata items (e.g., by organizational area, by status)</li> <li>• Sets of metadata attributes</li> <li>• Specific reports</li> <li>• The ability to import any metadata</li> <li>• The ability to execute specific steps in the data governance process</li> </ul>	<p><b>Maximum 14 points</b></p> <p>2 points per bullet</p>	
R85.	<p>The proposed solution allows authorized users to assign multiple roles to a user group simultaneously (refer to <i>APPENDIX A – User Groups/Roles Matrix</i> for context).</p>	4 points	
<b>Performance, Usability, and Maintainability</b>			
R86.	<p>Any browser based interfaces of the proposed solution conforms to Web Content Accessibility Guidelines (WCAG) 2.0 at Level AA.</p>	20 points	
R87.	<p>The proposed solution is recoverable to any point in time up to 3 months prior to any crash, failure or disaster.</p>	<p><b>Maximum 8 points</b></p> <p>8 points: the proposed solution can be restored to any point in time</p> <p>3 points: the proposed solution can be restored from a backup</p>	
R88.	<p>The proposed solution is configurable for high availability.</p>	7 points	
R89.	<p>The proposed solution is recoverable, with zero data loss, to another location following a disaster.</p>	7 points	

<b><u>Rated Requirements</u></b>			
<b>ID</b>	<b>Rated Requirement Description</b>	<b>Rating Criteria</b>	<b>Bidder Response</b>
R90.	<p>The proposed solution supports monitoring of performance and usage in real-time.</p> <p>Describe how the proposed solution addresses solution performance issues, and if system administration functions help support this functionality.</p>	<p><b>Maximum 4 points</b></p> <p>4 points: for a real-time console that monitors performance</p> <p>2 points: for facilitation through 3rd party monitoring tools not included with the proposed solution</p> <p>1 point: for report based monitoring</p>	
R91.	<p>The proposed solution provides alerts when CRA defined target performance metrics are reached.</p>	<p>1 point</p>	
R92.	<p>The proposed solution should include system administration functions to address solution performance issues.</p>	<p><b>Maximum 4 points for both</b></p> <p>2 points: for being able to terminate individual user sessions</p> <p>2 points: for being able to terminate individual background processes.</p>	
R93.	<p>The proposed solution should be upgradable with little or no downtime (99% availability).</p> <p>Describe how the proposed solution can be upgraded with little or no downtime.</p>	<p>3 points</p>	
R94.	<p>The proposed solution should be able to be patched with little or no downtime (99% availability).</p> <p>Describe how the proposed solution can be patched with little or no downtime.</p>	<p>3 points</p>	
<b>Information Technology Security Requirements</b>			
R95.	<p>The proposed solution is compatible with Microsoft BitLocker Drive Encryption.</p>	<p>10 points</p>	

<b>Rated Requirements</b>			
<b>ID</b>	<b>Rated Requirement Description</b>	<b>Rating Criteria</b>	<b>Bidder Response</b>
R96.	The proposed solution implements mechanisms for authentication to a cryptographic module that meet the requirements of applicable <i>ITSB-111 Cryptographic Algorithms for Protected Information, effective 2015-07-30</i> .	7 points	
R97.	The proposed solution generates audit records containing information that establishes what type of event occurred, when the event occurred, where the event occurred, the source of the event, the outcome of the event, and the identity of any individuals or subjects associated with the event.  Describe how the proposed solution manages audit records.	4 points	
R98.	The proposed solution supports the explicit authorization for access to organization-defined security functions and security-relevant information. Source: <i>CSEC ITSG-33 Security Control catalogue reference: AC – 6 (1) December 2014</i>	7 points	
R99.	The proposed solution implements specific security safeguards to protect its memory from unauthorized code execution.	7 points	
R100.	The proposed solution does not utilize Adobe Flash technology in any web components.	4 points	
<b>Packaging and Deployment Requirements</b>			
R101.	The proposed solution utilizes a licensing mechanism that supports automated, unattended installations.	10 points	
R102.	The proposed solution is able to be installed and uninstalled with the ability to suppress automatic reboot.	7 points	
R103.	The proposed solution is able to operate on networks running IPv6.	7 points	
<b>Tailoring</b>			
R104.	The proposed solution can be tailored by vendor specialists to meet specific CRA requirements. For example, enhancements and/or new functionality.	20 points	

## APPENDIX A – User Groups/Roles Matrix

The chart outline the user groups cross-referenced with the user roles.

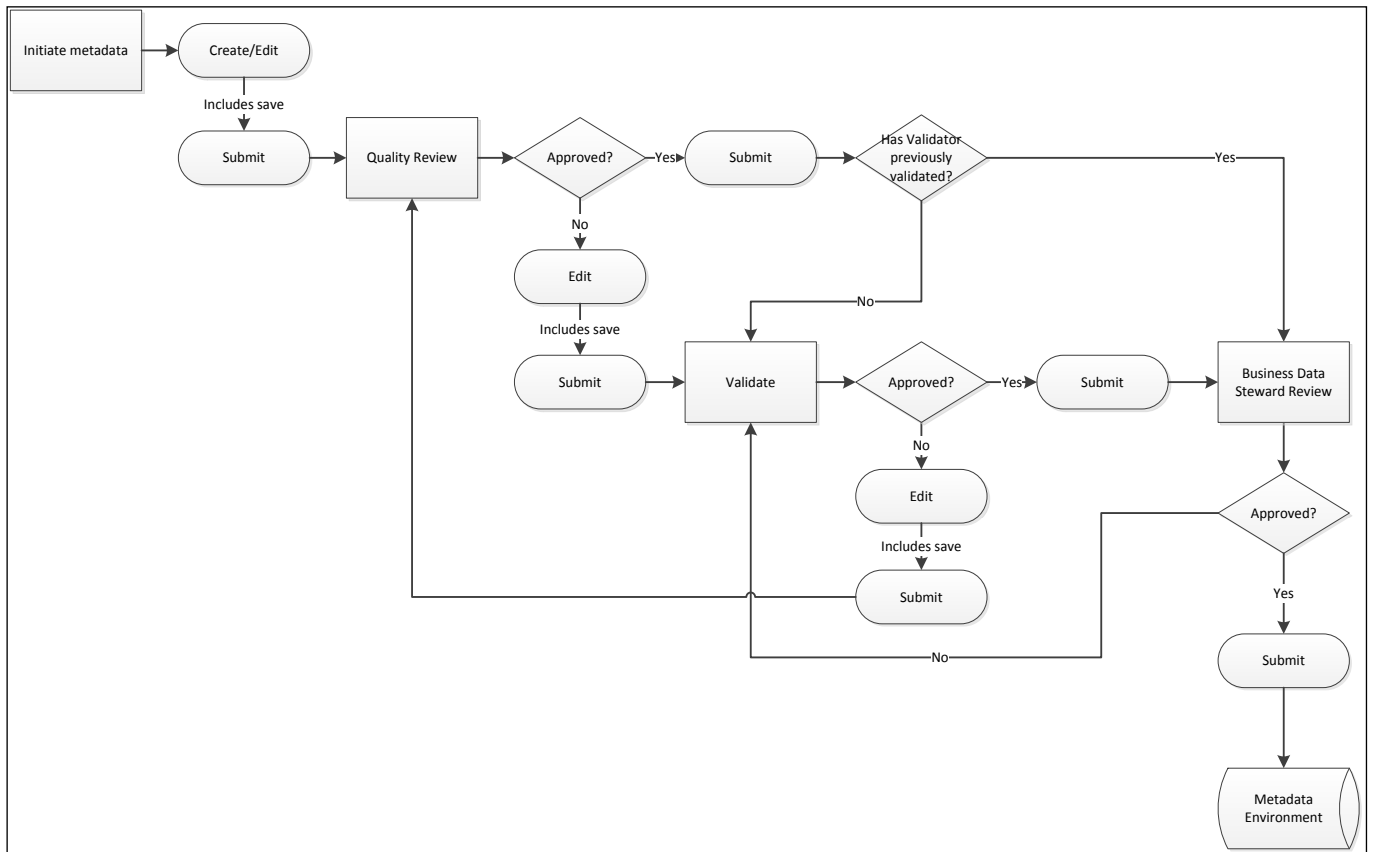
User Groups User Roles	BDS	SME	DBA	Data Architect	Data Analyst/Modeller	DSP Administrator	System Administrator	Application Developer	Metadata Analyst	Basic User	Metadata Specialist
Metadata Quality Reviewer											X
Metadata Searcher	X	X	X	X	X	X	X	X	X	X	X
Metadata Registrar	X	X	X	X	X			X			
Metadata Validator	X	X									
Metadata Approver	X										
Metadata Editor	X	X		X	X						X
Metadata Report Generator	X	X	X	X	X	X	X	X	X	X	X
Access Granter							X				
BDS Assigner						X					
SME Assigner	X					X					
Access Approver						X					
Metadata Assigner						X					

Role Responsibility	
Role	Responsibility
Metadata Quality Reviewer	To review the quality of metadata against pre-established metadata standards and guidelines.
Metadata Searcher	To explore or search the metadata in the solution.
Metadata Registrar	To create the metadata in the solution.
Metadata Validator	To verify the metadata in the solution for accuracy and completeness.
Metadata Approver	To approve the metadata that passed both the quality review and the validation steps in the solution, limited to within their functional authority.
Metadata Editor	To update or delete existing metadata in the solution.
Metadata Report Generator	To generate a metadata report.

Role Responsibility	
Role	Responsibility
Access Granter	To grant (i.e. execute) an approved access request.
BDS Assigner	To assign a BDS role to a user.
SME Assigner	To assign a SME role to a user.
Access Approver	To approve (or deny) an access change request to the solution.
Metadata Assigner	To assign a metadata item to a user or a role.

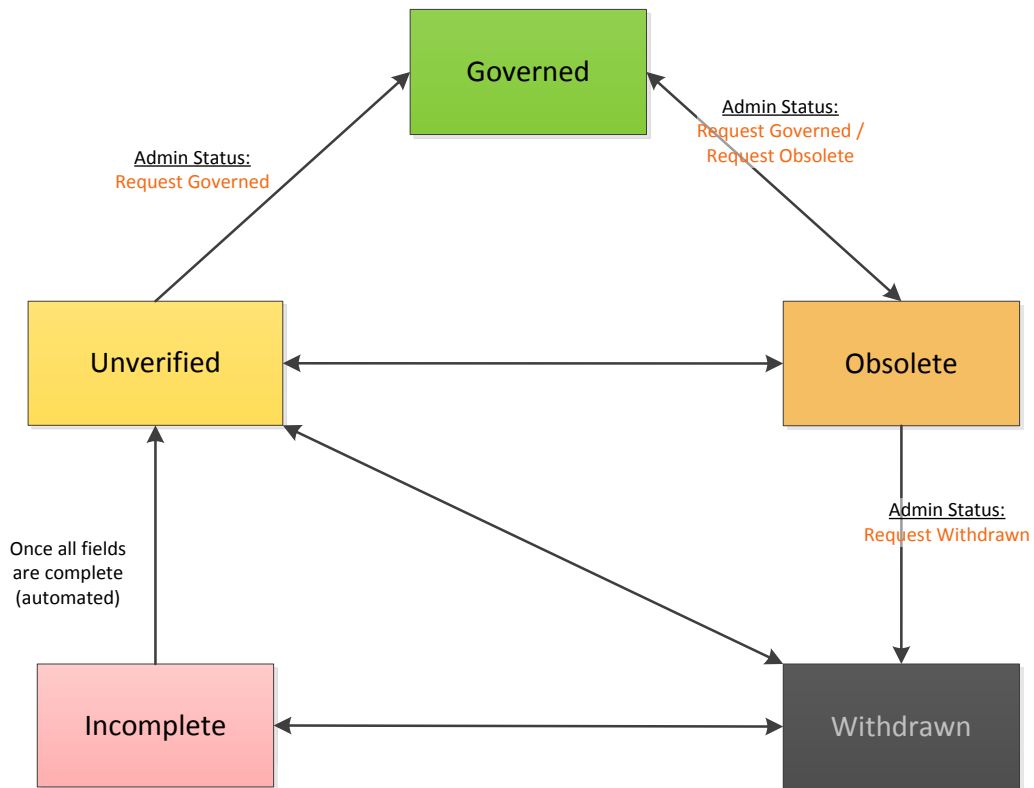
### APPENDIX B – Metadata Approval Process

This diagram is a visual representation of the flow of actions and decision points in the Metadata Approval Process.



**APPENDIX C – Status Flow Process**

**Metadata Item Registration Status Flow Diagram**



Metadata Item Registration Status Name	Metadata Item Registration Status Definition
Governed	The status representing a metadata item with all mandatory fields completed and with sign-off by all involved governance bodies.
Unverified	The status representing a metadata item with all mandatory fields completed but not yet signed off by all involved governance bodies.
Incomplete	The status representing a metadata item with one or more mandatory fields being incomplete.
Obsolete	The status representing a metadata item which is no longer required to fulfill business requirements, or has been superseded by another item.
Withdrawn	The status representing a metadata item for which the registration process does not need to continue.

Administration Status Name	Administration Status Definition
Request Governed	It's been requested that this item be sent through the process for obtaining sign-off from the required governance bodies. This status could be expanded to have indicators on which sign-offs are required and which sign-offs have already been obtained. e.g.: "BDS approved, awaiting DMS approval", "DMS approved, awaiting BDS approval" Once all sign-offs are obtained the status is automatically set to "Governed"
Request Obsolete	The requested item has been identified as no longer required or has been superseded. The requestor should indicate the reason for removal, and provide a replacement if available. Approval for the request should come from any other stakeholders for that item. Note: if the Request and Approval of the Obsolete status are limited to the same role, this would not be required. E.g., If a BDS is the only one who can make the request, and is also the one who should approve the request (in all cases) this becomes redundant.
Request Withdrawn	The requested item has been identified as no longer required for the registration process. Note: This status is requested since we might need owners/users of an obsoleted item to verify it, before the item is withdrawn.
<b>Note:</b> Unverified and Incomplete statuses do not require administration statuses as they can be assigned automatically based on the fields containing or not containing values.	

Status Progression Matrix					
From:\nTo:	Governed	Unverified	Incomplete	Obsolete	Withdrawn
Governed				✓	
Unverified	✓			✓	✓
Incomplete	✓*	✓			✓
Obsolete	✓	✓			✓
Withdrawn		✓	✓		

\* Only for off-line processing



## **APPENDIX D – Metadata Item Types**

This list provides the names and descriptions of CRA required metadata item types within the solution.

<b>Metadata Item Type Name</b>	<b>Description</b>
Term	A word or phrase that has an exact meaning.
Abbreviation	The approved shortened version of the term that the standard abbreviation represents.
Legislative Reference	A reference to a specific legislation, such as a tax act or a part of the act.  For example: <b>Metadata Item:</b> Directors' Fees Paid to Non-Residents <b>Legislative Reference:</b> 153(1)(a), definition of 'management fee' in 212(1)(a), Part XIII, Reg. 102, Reg 104(2)
Form Release	A release (defined by the year and/or version) of a form to its audience. A form is a document with blank spaces for completing the required information.
Form Section	A section on a form which groups a set of form fields.
Form Field	An area (e.g., a box or line) on a form where data can be entered.
Data Domain	The set of possible data values of a data element.
Domain Value	A value that is allowed for a data domain.
Enterprise Data Model (EDM)	A type of data model that provides a common view of the data needed to run CRA's programs using agreed business terms, without redundancy or acknowledgement of organizational boundaries. It takes the form of an entity-relationship model, partitioned into Subject Areas that are sub-divided into Subjects, where each entity, attribute, and relationship is assigned a business owner who is responsible for its definition and associated business rules
Enterprise Data Model (EDM) Entity	An entity (also referred to "Major business entities") that appears in the EDM.
Enterprise Generic Attribute	A generic attribute that has major significance to the enterprise and has high reusability and extendibility. A generic attribute can derive multiple specific attributes for different business lines. For example, generic attribute Social Insurance Number can derive specific attributes such as Tax Free Savings Account (TFSA) Participant Social Insurance for the TFSA business line.

<b>Metadata Item Type Name</b>	<b>Description</b>
Subject Area	A division of the Enterprise Data Model that distinctly describes a cohesive subset of the Canada Revenue Agency data that is used for communicating, searching, understanding and managing the CRA's data.
Subject	A sub-division of an Enterprise Data Model Subject Area that distinctly describes a cohesive subset of the Canada Revenue Agency data that is used for communicating, searching, understanding, and managing the CRA's data.
Conceptual Data Model	A type of data model that provides a project's view of the information needed to support the business functions within its scope. Using the terminology of the business community, this model provides a high level definition of the Subject Areas, Subjects, and entities of major significance to the business, and is used to scope and plan the project.
Conceptual Data Model Entity	An entity (also referred to as a "Major business entity") that appears in a Conceptual Data Model.
Logical Data Model	A type of data model that provides a project's view of all the information needed to support the business functions within its scope. This frequently implies partial views of more than one subject, but only depicting the data the project will need and access. Using the terminology of the business community and observing subject partitioning, this model defines all entities, relationships, and attributes of significance to the business. This provides the detailed definition of business data requirements that the Physical Data Model(s) (PDM) must satisfy, and is used in the scoping and planning of subsequent project phases and solution releases.
Logical Data Model Entity	An entity that is a component of a Logical Data Model.
Logical Data Model Entity Attribute	An attribute that is a component of a Logical Data Model entity.
Suggested Column Name for a Logical Data Model Attribute	A name derived from a Logical Data Model Entity Attribute that is suggested as a PDM column name.
Physical Data Model (PDM)	A type of data model that provides a fully detailed data structure definition and its visualization in a diagram whose format will vary depending on the database management system (DBMS), or meta-language, and toolset in use. It will use the CRA-approved, physical naming conventions for the implementation environment, e.g. the chosen DBMS or the XML data exchange schema conventions.
PDM Table	A table that is a component of a PDM.
PDM Table Column	A column that is a component of a PDM Table.

Metadata Item Type Name	Description
PDM View	A view that is a component of a PDM.
PDM View Column	A column that is a component of a PDM View.
Server	An infrastructure component that manages network resources
Database Instance	A logical database manager environment where the user creates databases and sets configuration parameters.
Database	A logical group of related table-spaces and index-spaces.
Database Schema	A collection of named objects in a database. A schema provides a logical grouping of objects in a database.
Database Schema Table	A table that is a component of a database schema.
Database Schema Table Column	A column that is a component of a table within a database schema.
Database Schema View	A view that is a component of a database schema.
Database Schema View Column	A column that is a component of a view within a database schema.
XML Schema Element	An element defined in an Extensible Markup Language (XML) schema.
XML Schema	A schema that describes the structure of a type of Extensible Markup Language (XML) document.
XML Namespace	A unique identifier, usually a URI (Uniform Resource Identifier), used to group a set of Extensible Markup Language (XML) names (elements or attributes). A namespace uniquely qualifies element and attribute names so that names in schemas do not conflict.
Report	A product created with the specific intention of relaying information.
Report Component	A component within a report. For example: A column
Classification Scheme	An arrangement of kinds of things (classes) or groups of kinds of things. It is often represented as a hierarchical structure and accompanied by descriptive information of the classes or groups.
IT Data Descriptor	A descriptor given to a data item that is used in Information Technology (IT) data processing. Examples: <ul style="list-style-type: none"> <li>• Copybook elements</li> <li>• Java Data Objects</li> </ul>
Screen Field	A data item which is part of a user interface.

## **APPENDIX E – Metadata Item Attributes**

This list provides the names and descriptions of required CRA metadata item attributes within the solution.

*Note: Some of the metadata attributes describe the metadata item itself, while some attributes are about the data that the metadata item is describing.*

*Some of the attributes are applicable to only a subset of the metadata item types.*

<b>Metadata Item Attribute Name</b>	<b>Description</b>
Codified Name	A codified name for a metadata item. For example: Country Name. Codified name = CNTRY_NM
English Name	The English name of a metadata item.
French Name	The French name of a metadata item.
English Definition/Description	The English definition or description of a metadata item.
French Definition/Description	The French definition or description of a metadata item
Classification Word	A word within a data element name that defines the kind of data element, as defined by the Data Element Naming Standard For example: Country Name, the Classification Word is Name.
Category	The category of a metadata item. Note: This may be implemented through the Classification Scheme metadata item type (See Appendix D – <i>Metadata Item Types</i> ).
Data Type	The classification of a metadata item identifying one of various types of data, such as date, character, and integer or Boolean, that determines the possible values for that type. For example: for structured data, this is most commonly the Database Management System (DBMS) data type
Data Length	The maximum length of the data a metadata item contains.
Data Precision	The maximum number of digits to the right of the decimal point allowed in the value contained by a metadata item.
Data Signedness	A property that defines if a metadata item can contain both positive and negative numbers or if it can only contain non-negative numbers (zero or positive numbers).
Data Format	The detailed composition of the data for a metadata item. For example: “(555) 555-5555”, or “K1K 1K1”

<b>Metadata Item Attribute Name</b>	<b>Description</b>
Unit of Measurement	A definite magnitude of a physical quantity defined and adopted by convention or by law, which is used as a standard for measurement of the same physical quantity.  For example: Currency USD, CAN, Kilograms, Kilometers
Metadata Item Creation Date	The date a metadata item is added to the solution.
Metadata Item Effective Date	The date from which a metadata item is in effect.  For example: Individual Income Amount, effective date 1984-01-01
Metadata Item Expiry Date	The date on which a metadata item is expired.
Responsible Functional Authority	The CRA organization responsible for the data management of the metadata item.  For example: Branch, Directorate, Division
Contact User Identifier	The unique user identifier of an individual contact.
Contact Given Name	The given name of an individual contact.
Contact Surname Name	The surname name of an individual contact.
Contact Organization Unit	A description of the organizational unit for a contact.
Contact Phone Number	A telephone number for a contact.
Contact Type	The type of contact within the context of the metadata item.  For example: <ul style="list-style-type: none"> <li>• Business Data Steward</li> <li>• Subject Matter Expert</li> <li>• Data Modeller</li> <li>• Primary IT Contact</li> <li>• Data Architect</li> <li>• Database Administrator</li> <li>• Metadata Specialist</li> </ul>
Default Value	The value that is given by default to a metadata item.

Metadata Item Attribute Name	Description
Relationship - Data lineage	<p>The movement path of a data element's data. For example:</p> <ul style="list-style-type: none"> <li>• General example: Data is captured from a form into a CRA system's column (the "Data Store of Entry"). The column's data is then copied/moved to a column in the ADW. That column's data is then copied/moved to a column in a DataMart, which will then appear in a report's field.</li> <li>• Specific example: CLT_ID from T1Ident source system goes to the ADW, and then to the T1 DataMart</li> </ul> <p>Data lineage information also includes Source-to-target mappings and transformations such as (Column 1, Column 2, Column 3 ...) -&gt; Column A</p>
Relationship - Data Development Lifecycle Lineage	<p>The development path of a data element. For example:</p> <ul style="list-style-type: none"> <li>• Form Field to Logical Model Attribute to PDM Column to DB Column</li> <li>• Logical Model Attribute to XML Element</li> </ul>
Relationship - Hierarchical lineage	<p>The container-containee association between metadata items. For example:</p> <ul style="list-style-type: none"> <li>• Server to Database Instance to Database Schema to Table to Column</li> <li>• Model to entity to entity attribute;</li> <li>• Subject Area to Subject to Conceptual Data Model Entity</li> </ul>
Relationship - Foreign Key	<p>A foreign key (FK) is an attribute/column or group of attributes/columns in a relational entity/table that provides a link between data in two entities/tables. It acts as a cross-reference between entities/tables because it references the primary key of another entity/table, thereby establishing a link between them. For example:</p> <ul style="list-style-type: none"> <li>• Logical Data Model entity attribute to Logical Data Model entity attribute (role name/FK)</li> <li>• Database table column to another database table column: FK</li> </ul>
Other Metadata Item Relationship	<p>A relationship between one metadata item and another metadata item that can include but is not limited to the following relationships:</p> <ul style="list-style-type: none"> <li>• Term to Abbreviation</li> <li>• Synonym</li> </ul> <p>Examples:</p> <ul style="list-style-type: none"> <li>▪ Entity name: Community Volunteer = Volunteer Tax Preparer</li> <li>▪ Column Name: USR_ID = UID =USER_ID</li> </ul> <ul style="list-style-type: none"> <li>• Deprecation Relationships (reference to a superseded Item)</li> <li>• Logical Data Model attribute to suggested physical names;</li> <li>• Classification Scheme to Metadata Item</li> <li>• Domain to metadata item</li> </ul>

<b>Metadata Item Attribute Name</b>	<b>Description</b>
Relationship Comment	Additional information about a relationship.
Business Rule	A business rule is a specific, actionable, testable directive that is under the control of the business and supports a business policy.
Transformation Rule	A description of the process that transforms the data. For example: This is the sum of Column A and Column B
Cleansing Rule	A description of the process of detecting and correcting inaccurate data in order to make the data consistent with the target destination. For example: leading zeroes were removed
Minimum Value	The minimum value for a metadata item.
Maximum Value	The maximum value for a metadata item.
Special Value	The special value for a metadata item.
Null Indicator	Indicates that a metadata item can contain a null value.
English Note/Comment	Additional English information about a metadata item.
French Note/Comment	Additional French information about a metadata item.
Primary Key Indicator	Indicates that the metadata item is a primary key.
Foreign Key Indicator	Indicates that the metadata item is a foreign key.
Data Retention Period	The period of time the data that the metadata item is describing must be kept.
DBMS type	The Database Management System within which the metadata item is stored.
Security Classification	The security classification of the metadata item.
Residency Rule	The geopolitical residency rules applicable to the data that the metadata item is describing. For example: Individual Income Amount must be stored within a database that is within Canada.
Status	The state of the metadata item. For example: Registration Status, Administration Status
Authoritative Source Indicator	Indicates that the metadata item is the authoritative source. For example: INDV_INC_AMT in REMT is not an authoritative source of Individual Income Amount (it is a copy from T1 assessing)

<b>Metadata Item Attribute Name</b>	<b>Description</b>
Governance Level	The level within the Data Stewardship Program that is associated with the Metadata Item, which determines which governance process is to be followed.  For example: Agency Level, Branch Level
Reference Link	A link to external content.
External Metadata Item Indicator	Indicates that the metadata item is external to CRA.
Data Refresh Frequency	The frequency the data is refreshed from the source.
Data History Period	The period of time the data represents.



## **Acronyms and Glossary**

### **Acronyms**

AMR	Agency Metadata Repository (New metadata solution)
BDS	Business Data Steward
CRA	Canada Revenue Agency
COTS	Commercial-Off-The-Shelf
DMS	Data Modelling Services
DBMS	Database Management System
FK	Foreign Key
IT	Information Technology
ITB	Information Technology Branch
JDBC	Java Database Connectivity
MDI	Metadata Item
ODBC	Open Database Connectivity
PDM	Physical Data Model
RDA	Record of Disposition Authority
RFA	Responsible Functional Area
SME	Subject Matter Expert
SOR	Statement of Requirements
XML	Extensible Markup Language

### **Glossary**

#### **Collaboration**

The ability to communicate and work jointly with other users within the solution.

#### **Consolidated View**

A view of the metadata, whereby metadata is integrated from multiple sources into a single presentation. The presentation should not require the viewer to have knowledge of all underlying sources in order to understand how the data is stored, moved, and transformed throughout the enterprise.

#### **Change Control**

Change control is the formal process used to ensure that changes to the metadata found in the repository are introduced and presented in a controlled and coordinated manner, to ensure that all changes are documented and no unnecessary changes are made.

#### **Dashboard**

A dashboard report is a visual display of the most important information, consolidated and arranged in an easy-to-read format to support business with meaning and useful data; for example, by metadata item status.

#### **Data Disposal**

Data disposal or data disposition is the process to remove the data of a business object instance from where the data is stored.

**Data Lineage**

The end-to-end view of data movement used to support understanding of where information comes from and how it is transformed.

**Directly Import**

Be able to import from within the solution interface, without requiring the user to manually modify, or manually export from, another tool. This may be achieved through the use of a supplied metadata integration bridge.

**Directly Export**

Be able to export from within the solution interface, without requiring the user to manually modify, or manually import from, another tool. This may be achieved through the use of a supplied metadata integration bridge.

**Entity**

A class or category of a person, place, thing, event or concept that is of interest to the enterprise. This means an entity is not a single “thing”, but rather a representation of things that share characteristics or properties.

**High Availability**

A system or component that is continuously operational for a desirably long length of time. Availability can be measured relative to "100% operational" or "never failing."

**Metadata**

Metadata is “data about data”. It is the information that defines and describes the characteristics of other data, used to improve both business and technical understanding of data, and the data-related processes.

**Metadata Item (MDI), MDI Types & MDI Attributes:**

A metadata item (MDI) represents an item within CRA's managed data environment that CRA wishes to manage. Metadata items contain metadata about the items they represent.

A metadata item type represents the nature of a metadata item and will prescribe the metadata item attributes that will describe it as well as the metadata management rules that will apply to it (such as business name inheritance or a MDI's data lineage).

A metadata item attribute is a defining attribute/field of a metadata item.

**Examples:**

MDI	MDI type	MDI attribute	MDI metadata
Last Name	Logical Data Model Attribute	Definition	The last name of the client
TBL_001	Table	Business Creation Date	2001-02-03
DB_OP_V1	Database Schema	Note	Note about this database

**Metamodel**

The logical and physical models that represent the metadata stored in the tool, how that metadata is stored, the connections between the items, the database information, and any other pertinent information regarding the metadata in the solution.

**Pre-Defined**

Defined and included within the solution at the time of the acquisition.

**Relationships**

See APPENDIX E – Metadata Item Attributes, which includes a listing of all relationship types and the descriptions of each.

**Repository**

A central location where data is stored and managed.

**Stakeholder**

A stakeholder is a group or person who is affected by the solution, has an interest in it, or can influence the project. Stakeholders are sponsors, customers, users, indirect users, providers, advisors, and others.

**Self-Defined**

Defined within CRA, by CRA users.

**Self-Defined Loads**

A term used to describe the ability to design and build customized processes to load metadata into the tool.

**Structured Data**

Structured data refers to information with a high degree of organization, such that inclusion in a relational database is seamless and readily searchable by simple, straightforward search engine algorithms or other search operations.

**“Usage” or Usage level**

A metadata item usage (also referred to as usage) is a term used to define a specific occurrence/instance of a metadata item within a specific location. For example, a metadata item can be used within multiple databases, and multiple times within that database. To use the term usage, it is referring to specific location with any required qualifiers to make the reference unique.

**Versioning**

Recording and keeping record of changes to metadata, for example, to track the history of changes made to a metadata item.

**Sub-versioning** – keeping record of changes to metadata to track history of changes made *within a version* of an approved/governed metadata item.

## **Web Content Accessibility Guidelines (WCAG) 2.0**

Guidelines that make web content more accessible to a wider range of people with disabilities, including blindness and low vision, deafness and hearing loss, learning disabilities, cognitive limitations, limited movement, speech disabilities, photosensitivity or a combination of these.