

Registering Researchers in Authority Files: Use Cases

1. Related to reading/queries of multiple authority system

1. Researcher submits document to institutional repository.
2. Journalist search for researcher's publications across repositories.
3. Funder wishes to report research outputs for particular grant.
4. Cataloger working in the library, searches for the author/contributor on the Name Authority File (NAF) and is able to reuse a record created for an institutional repository.
5. University administrators want to collate the intellectual output of their researchers.
6. Researchers want to find other researchers working in their same area.
7. Researchers want to find out the background of their collaborators.

2. Related to creating/updating multiple authority systems

1. Institution wishes to determine whether faculty members currently have an id in all relevant systems, and if not, register them.
2. Researcher finds error in registry details, wishes to correct it.
3. Researcher wishes to register in all relevant systems.
4. Cataloger wishes to add ids to cataloging record.
5. Internal catalog and profile system maintains consistent information across systems over time.

3. Related to administering multiple systems

1. Aggregators (e.g., publishers, distributors, professional associations, etc) want to offer a pool of researchers with their persistent identifiers as a service.
2. Identity management systems need sufficient metadata to automatically disambiguate names and disseminate their IDs so they can be linked to others' IDs.
3. Systems need to provide researchers with connections to external researcher IDs.

4. Related to updating within single authority system

1. Researcher or librarian discovers duplicate id's in same system, wishes to merge them.
2. Researcher or librarian discovers two individuals represented by the same ID, wishes to split them.
3. Researcher discovers that information in database needs emendment.

Pain Points

- Misattribution
- Duplicate records
- Out of date information

1. Related to reading/queries of multiple authority system

D:	UC1.1 – Saskia Woutersen (U. Amsterdam)
Title:	Researcher submits document to institutional repository
Description:	Researcher registers his publication in the IR and identifies his/her co-authors..
Primary Actor:	Researcher
Preconditions:	Researcher is logged into system, and can (while registering his/her publications) identify his/her co-authors easily. This can be done by providing a list of suggested co-authors that are already identified.
Postconditions:	Research is allowed to register in the IR.
Main Success Scenario:	<ol style="list-style-type: none"> 1. Research log in 2. IDs of the researcher are automatically shown 3. Researcher enters the name of the co-author 4. the IR shows a list of names available with an ID 5. researcher selects the correct name(s) and identifier(s) 6. Researcher saves the data. 7. System registers the names and identifiers in confirmation message.
Extensions:	<ol style="list-style-type: none"> 1. To make it easy provide a list of co-authors of the author that are already in the system. 2. What to do when the name is not available or the name has no ID? Can a researcher create a new one for another author?
ID:	UC 1.2 – Wolfram Horstmann (U. Oxford)
Title:	Journalist searches for researcher’s publications across repositories.
Description:	A journalist would like to retrieve all full-texts published by a researcher on climate change. The researcher has moved between institutions and has changed her name twice since starting her work.
Primary Actor:	Journalist / Researcher
Preconditions:	<ul style="list-style-type: none"> - The researcher has submitted her papers to institutions’ repositories - There is a cross repository search service such as GoogleScholar or BASE-search.NET - Each repository exposes an author identifier for the researcher - The search service can access the repositories’ author identifiers - There is a disambiguation service in case different author identifiers are used - The disambiguation service has the information that different names and records belong to the same person (“same-as”) - The search service is able to use the disambiguation service and aggregate - The journalist is able to use the search service to search the researcher’s name
Postconditions:	- The journalist is able to understand that all publications belong to the same person even if there are different names
Main Success Scenario:	Journalist retrieves a result list with all publications of the same researcher who had published under different names and in different repositories
Extensions:	<ol style="list-style-type: none"> 1a. Search service warns that the researcher has changed names and several separate searches might be required 1b. Search service warns that the researcher has changed institutions and several separate searches might be required

ID:	UC1.3 – Joanne Dunham (U. Leicester)
Title:	Funder wishes to report research outputs for particular grant.
Description:	Funder would like to retrieve all the publications by researchers (authors and co-authors) associated with a specific grant or Funder requests that Researcher reports all their research outputs associated with a specific grant.
Primary Actor:	Funder/Researcher
Preconditions:	The Researcher has submitted all their research outputs in the way specified by the grant funding body i.e. open access if applicable, IR's, citation/bibliographic databases etc. The publications can be identified as relating to a specific grant. The funder/researcher is able to search using the researcher's name +/-or An author identifier is available for each researcher (both for lead researcher and co-researchers) Cross database searching is available. OR Researcher has recorded (or all relevant research outputs have been associated with the researcher on their RIS profile) all their research outputs associated with a specific grant on a RIS (e.g. Simplectic).
Postconditions:	Funder/Research can search for and retrieve all research outputs associated with a specific grant
Main Success Scenario:	Can log in to RIS/database(s) Can search by Researcher name(s)/identifier(s) Can search by Grant identifier Can select the data Can save and output the data in different formats
Extensions:	CrossRef has announced FundRef, a pilot collaboration between scholarly publishers and funding agencies that will standardize the names of research funders and add grant numbers attributed in journal articles or other scholarly documents. The collaboration would allow researchers, publishers, and funding agencies to track the published research that results from specific funding bodies. See: http://www.crossref.org/01company/pr/news050212.html
ID:	UC1.4 – Ana Cristan (Library of Congress) and Melanie Wacker (Columbia University)
Title:	Querying and reusing data from other researcher registries or Name Authority Files
Description:	Cataloger working in the library, searches for the author/contributor in the Name Authority File (NAF) as well as other sources and is able to reuse a record created for an institutional repository when a new name authority record is needed.
Primary Actor:	Cataloger
Preconditions:	Various name authority files and researcher registries are linked in one system, such as VIAF. That system, e.g. VIAF, can be queried through the bibliographic utility used for NAR creation (e.g. OCLC). There is a mechanism for catalogers to use an existing record as a template to start building the NAR.

Postconditions:	The creation of a new name authority record has been accomplished in a shorter amount of time.
Main Success Scenario:	Cataloger accesses the cataloging utility used to search and create NARs for the NAF. Cataloger searches the NAF and does not find a match. Cataloger queries other researcher registries or name authority files without having to leave the bibliographic utility. Cataloger finds a match. Cataloger is able to either reuse the existing record to build the NAR or to pull in needed elements.
Extensions:	2a. If the cataloger does find a match use case 2.4 may apply. 5a. This may only apply to certain elements that are consistent in most registries/authority files.
ID:	UC1.5 – Philip Schreur (Stanford University)
Title:	University administrator wants to collate the intellectual output of their researchers.
Description:	University administrator wants both to assess the intellectual impact of a particular subset of their researchers and determine their areas of strength (and weakness) by a review of the researchers' intellectual output.
Primary Actor:	University Administrator
Preconditions:	Metadata for all of a researcher's intellectual output are available. The metadata is robust enough to allow for various types of sorting. The metadata has been created in a consistent way to allow for successful integration. A researcher has a single identity or has successfully linked multiple identities to allow for collation of intellectual output. There is a single database that contains all the metadata for all intellectual output or multiple databases that can be searched simultaneously and the results deduped. A similar database is available at all institutions against which a comparison is to be made.
Postconditions:	A UA can create a file of all the intellectual output of a particular researcher or the intellectual output of a department by a particular subject across researchers.
Main Success Scenario:	UA accesses a single database containing the intellectual output of their institution. UA queries the database for the intellectual output of individual researchers. UA sorts the results of the queries and groups subsets of researchers as needed. UA analyzes the results in regards to subject strengths. UA compares the results to the output of other institutions.
ID:	UC1.6 – Philip Schreur (Stanford University)
Title:	A researcher wishes to find other researchers working in the same field.
Description:	A researcher wishes to find collaborators for a new project either within or outside their institution by querying a database(s) of the intellectual output of others in

	their field.
Primary Actor:	Researcher
Preconditions:	<p>Metadata for all of a researcher's intellectual output are available. The metadata is robust enough to allow for various types of sorting. The metadata has been created in a consistent way to allow for successful integration with other researcher's output. A researcher has a single identity or has successfully linked multiple identities to allow for collation of intellectual output. There is a single database that contains all the metadata for all intellectual output or multiple databases that can be searched simultaneously. A similar database(s) is available at all institutions from which potential collaborators are sought.</p>
Postconditions:	The ability to create a list of potential collaborators both within and across institutions.
Main Success Scenario:	<p>Researcher defines a new project. Researcher seeks successful collaborators within the same field of interest. Researcher queries a database(s) containing potential collaborators and sorts the results by subject. Researcher evaluates the intellectual output of potential collaborators. Researcher contacts potential collaborators for interest.</p>
ID:	UC1.7 – Philip Schreur (Stanford University)
Title:	Researcher wants to explore the background of current collaborators.
Description:	Researcher wishes to explore the intellectual output of current collaborators on a project.
Primary Actor:	Researcher
Preconditions:	<p>Metadata for all of a researcher's intellectual output are available. The metadata is robust enough to allow for various types of sorting. The metadata has been created in a consistent way to allow for successful integration. A researcher has a single identity or has successfully linked multiple identities to allow for collation of intellectual output. There is a single database that contains all the metadata for all intellectual output or multiple databases that can be searched simultaneously. A similar database is available at all institutions from which current collaborators have come.</p>
Postconditions:	A researcher is able to search a database containing the entire intellectual output of a collaborator with whom they are currently working.
Main Success Scenario:	<p>Researcher identifies another researcher with whom they are currently working. Researcher queries a database(s) containing their entire intellectual output. Researcher receives a single result of all of the other researcher's intellectual output. Researcher manipulates the result by various aspects of interest.</p>

2. Related to creating/updating multiple authority systems

ID:	UC2.1 – Laura Smart (California Institute of Technology)
Title:	Batch search & update multiple ID systems
Description:	A staff member of a university wishes to determine if faculty members currently have an ID in relevant systems and, if not, register them
Primary Actor:	Staff member
Preconditions:	Staff member has list of researcher names in a standard format There is a directory of identifier services and staff member has access to it There is a standard mechanism for searching and updating identifier services Identifier services allow proxies to create provisional records
Postconditions:	All faculty on list have ID in relevant systems
Main Success Scenario:	Staff member selects multiple authority systems to search Staff member is prompted to add "search list" of names to the query engine Staff member reviews search "result set" and removes false matches to create a "normalized set" of results Staff member compares normalized results set with initial search list to determine which faculty names aren't yet represented in an ID system. Staff member removes matches to create a new "working list" Staff member uploads "working list" to ID system to create new records
Extensions:	2 Institutional/Organizational search could be used to find all personal names in a ID system affiliated with a given university 4 comparison could be done manually and locally in spreadsheets 5 assumes there is one system which could propagate names to other systems. Staff member may need to upload list to individual systems
Frequency of Use:	Annually
ID:	UC2.2 – Amanda Hill (University of Manchester)
Title:	Correct an error in a researcher's details
Description:	A researcher views the information about herself in the authority system and notices an error. She is able to report the error or edit the record herself in order to correct it.
Primary Actor:	Researcher
Preconditions:	There is a publicly-accessible web interface to information about researchers There is a mechanism for individual researchers to update information in the system
Postconditions:	The information has been corrected.
Main Success Scenario:	<ol style="list-style-type: none"> 1. Researcher accesses the authority system 2. Researcher views information associated with her identity and realizes that there is an error 3. Researcher interacts with the system to update the information 4. Updated information is displayed in the system
Extensions:	3a. This may involve the researcher registering a user account with the system, requiring authentication of some sort 3b. The system could otherwise provide a contact form for manual update of the information by administrators 4a. The updated information may need to be propagated out to other systems

ID:	UC2.3 – Laura Smart (California Institute of Technology)
Title:	Register in multiple systems
Description:	A researcher wants to register ID in all relevant systems.
Primary Actor:	Researcher
Preconditions:	There is a publicly-accessible web interface to information about researchers There is a mechanism for individual researchers to update information in the system
Postconditions:	Researcher has IDs in every system desired
Main Success Scenario:	Researcher accesses web site of researcher information Researcher searches for her own name/identifier and doesn't find any results Researcher adds her information to the system Researcher is prompted to select desired ID systems for adding name information
Extensions:	2 Researcher may find that some ID systems have harvested name information and already have records for her - some of which may be correct and some may need revisions 3 Researcher may need to correct information in multiple systems, necessitating individual account creation, login, editing sessions, etc.
ID:	UC2.4 – Amanda Hill (University of Manchester)
Title:	Add IDs to catalogue record
Description:	A cataloguer in an institution wants to add identifiers for individuals to a catalogue record
Primary Actor:	Cataloguer
Preconditions:	There is a field in the catalogue record to which an identifier may be added There is a means by which the cataloguer can reliably identify an individual/persona (i.e. sufficient information) There is an identifier associated with an individual/persona which resolves to information identifying them That identifier can be freely used in other systems
Postconditions:	The cataloguer has added identifiers for individuals to the catalogue record
Main Success Scenario:	<ol style="list-style-type: none"> 1. Cataloguer accesses the authority system 2. Cataloguer searches for names of individuals and makes a positive identification 3. Cataloguer populates catalogue field with the external identifier from the authority system 4. Catalogue record displays a link to the authority system's record for the individual
Extensions:	2a. The cataloguer does not find a record in the system for an individual 2a1. The cataloguer has the opportunity of creating a new record/requesting creation of a new record

ID:	2.5 – Micah Altman (Massachusetts Institute of Technology)
Title:	Systems action to maintain consistency of information over time
Description:	<i>See the Researcher ID Information Flow diagram.</i> As per use cases 2.1-2.4 and 4.1-4.3 identifiers may be deleted, merged, and added over time, and information linked provided by identifier authorities such as author profile information related to an id or outputs contributed to by that author may also be updated. Systems need to act so that the information delivered in profiles is constituent (eventually, not immediately) with the information provided by the authoritative systems.
Primary Actor:	Internal catalog and profile systems.
Preconditions:	Some change occurs in aggregator record: (a) add/delete/merge id OR (b) add/change associated author information (e.g. affiliated institution) OR (c) add/change to maintained profile information (e.g. publication list)
Postconditions:	Information displayed in gateway is identical to that in affiliated aggregator record
Main Success Scenario:	<p>A scheduling service (e.g. <i>cron</i>) initiates an update process for the { Library Catalog, IR Catalog, and Institutionally Deployed Profile } internal aggregator systems</p> <p>Generate list of ID's per by Aggregator existing in Internal aggregator system</p> <p>Query Aggregator on list of ID's from that Aggregator source</p> <p>For each ID registered in the internal system</p> <p>Check whether ID has been deleted in Aggregator → delete in Internal aggregator</p> <p>Determine whether ID has been merged → merge in internal aggregator system</p> <p>Determine whether information related to author has been updated → update profile information in database system</p> <p>Generate updated list of ID's per Aggregator</p> <p>Query each Aggregator (not just Aggregator responsible for minting ID) for any updated outputs (publication) information associated with each id → add to internal aggregator</p> <p>Generate list of names in Internal aggregator System that <i>do not have ID's yet associated</i></p> <p>Query each aggregator for ID's that (i) have been created since the last query time ; (ii) match the name/institutional information associated with the unidentified researcher</p> <p>If there are any matches, record potential matches across all aggregators: generate report of potential matches: route for manual review and approval</p>
Extensions:	<p>Alternative to 1-3 is that Aggregator provides notification service</p> <p>1A. register list of 'watched' ID's with Aggregator</p> <p>2A When information related to ID changes, Aggregator registers notification with Internal system</p> <p>3A Internal system queries information for that Aggregator</p> <p>Alternative to 6, is to register interest in new ID's associated with an institution or query string. (E.g. notify when a researcher registers who's institution matches "MIT")</p> <p>6A register list of queries with Aggregator</p> <p>7A when query results change, Aggregator sends a list of new results to Internal System.</p>

3. Related to administering multiple systems

ID:	UC 3.1 – Daniel Hook (Symplectic)
Title:	Aggregators want to offer a pool of researchers with their persistent identifiers as a service.
Description:	Content aggregators of some type of research data, which may include research outputs such as publications or data sets, wish to offer a pool of researchers with persistent IDs either globally or within an institutional context.
Primary Actor:	Information consumer: an agent wishing to gain data so that it can perform some level of data analysis.
Preconditions:	Aggregators work in a global context (e.g., Thomson Reuters, Elsevier, NIH, NSF) or represent a CRIS system such as Atira/Elsevier Pure, Alvedas, Converis, Symplectic.
Postconditions:	Researcher retrieves persistent IDs for the person(s) queried.
Main Success Scenario:	<ol style="list-style-type: none"> 1. <Information consumer> wishes to understand something relating to unique people either associated with their institution or more generally. Typically, this might include promotion procedures, hiring/tenure procedures, faculty searches and accurate institutional benchmarking. 2. <Information consumer> browses aggregator database by topic and finds an author name. 3. <Information consumer> wishes to find all works by author but needs to be sure that they are correctly disambiguated. 4. <Information consumer> locates unique identifier associated with author. 5. <Information consumer> searches database using author unique identifier. 6. <Information consumer> downloads metadata associated with author's unique identifier. 7. *Optional) <Information consumer> looks at co-author lists on metadata and repeats procedure above to understand co-authorship network / benchmarking statistics / size of field etc.
ID:	UC 3.2 – Daniel Hook (Symplectic) and Michael Conlon (University of Florida)
Title:	Identity management systems automatically disambiguate people and disseminate IDs.
Description:	Two or more Identify management systems “talk” with each other for the purpose of disambiguating or improving the data they hold.
Primary Actors:	<p>Originator system: a system such as VIVO or ORCID that is attempting to add relevant metadata to its store or disambiguate data that it holds.</p> <p>Recipient system: another system such as VIVO or ORCID that may hold data about the individual being queried by the Originator system.</p> <p>Metadata being transmitted about an individual may include: first name, last name, email address, keywords related to their research, role, name of organizational affiliations known about, articles published (DOIs?), journals in which publications have appeared, grants held.</p>
Preconditions:	Recipient system has sufficient data to respond to the query from the originator system.
Postconditions:	Originator system retrieves a persistent ID or other key information from recipient system or recipient system can suggest disambiguation of entities.
Main Success Scenario:	<p>Find ORCID or other key information from ORCID system</p> <ol style="list-style-type: none"> 1. <Originator system> supplies metadata describing an individual to the <recipient system>. 2. <Recipient system> compares the received metadata with metadata in its store and returns a set of metadata bundles describing individuals who appear to match the searched metadata together with confidence levels qualifying the strength of the match. 3. <Originator system> compares each returned metadata set with what is known about the queried set to see if it can corroborate the match based on the wider data provided (i.e. inference through shared co-authors or co-grant holders). 4. <Originator system> asserts association with ORCID from <Recipient system> if

	<p>confidence threshold is exceeded.</p> <p>Recipient system suggests disambiguation of entities</p> <ol style="list-style-type: none"> 1. <Originator system> supplies sets of metadata describing records that appear to describe the same individual to the <recipient system>. 2. <Recipient system> compares the received metadata with metadata in its store and returns a set of metadata bundles describing individuals who appear to be the same as those in the dataset provided together with enhancements in “peripheral” metadata (i.e. publications, co-authors etc), confidence in matching to the entities provided and likely disambiguation (or clustering) of the entities together with confidence levels concerning the clusters. 3. <Originator system> takes clusters returned along with supplementary metadata and calculates confidence levels of clusters based on its own inference taking supplementary metadata and confidence levels of external system into account. 4. <Originator system> stores sameas assertions with provenance attributed to <Recipient system> and time stamped to the request date (so that if the results of a negotiation in the future change, it is understood that metadata may have changed in the <Recipient system>.
ID:	UC3.3 - Saskia Woutersen (U. Amsterdam)
Title:	Systems need to provide researchers with connections to external researcher IDs.
Description:	Register co-authors.
Primary Actor:	Researcher, catalogue, ?
Preconditions:	Researcher is logged into system (not only IR as is Use Case 1.1), and can (while registering his/her publications, projects, etc) identify his/her co-researchers easily. This can be done by providing a list of suggested co-authors that are already identified.
Postconditions:	Research is allowed to register in the system
Main Success Scenario:	<ol style="list-style-type: none"> 1. Research log in 2. IDs of the researcher are automatically shown 3. Researcher enters the name of the co-author 4. the system shows a list of names available with an ID 5. researcher selects the correct name(s) and identifier(s) 6. Researcher save the data. 7. System registers the names and identifiers in confirmation message.
Extensions:	<ol style="list-style-type: none"> 1. To make it easy provide a list of co-authors of the author that are already in the system. 2. What to do when the name is not available or the name has no ID? Can a researcher create a new one for another author?

4. Related to updating within single authority system

ID:	UC 4.1 – Andrew MacEwan (British Library)
Title:	Researcher or librarian discovers duplicate id's in same system, wishes to merge them.
Description:	A researcher or librarian views the information about herself in the authority system and discovers that two separate IDs have been assigned to her, associated with different works. She is able to report the error or edit the records herself in order to merge the data, maintain one ID and deprecate the other.
Primary Actor:	Researcher or librarian
Preconditions:	There is a publicly-accessible web interface to the authority system There is a mechanism for individual researchers to update information in the system The authority system controls diffusion of the identifier into other databases and has a notification protocol to remove and replace a deprecated ID
Postconditions:	The information has been corrected and one ID has been removed from the system
Main Success Scenario:	Researcher/librarian accesses the authority system Researcher/librarian views information associated with her identity and realizes that there are two IDs that require merging Researcher/librarian interacts with the system to update the information and indicates preference for which ID should be kept and which deprecated The separate records are merged and one of the IDs is deprecated. Notifications are sent to all other databases to which the deprecated ID has been sent replacing with the correct ID
Extensions:	3a. This may involve the researcher/librarian registering a user account with the system, requiring authentication of some sort 3b. The system could otherwise provide a contact form for manual update of the information by administrators (Note: this is the method provided for the ISNI system) 4a. The updated information may need to be propagated out to other systems (Note: methods above derived from ISNI update protocols)
ID:	UC 4.2 - Andrew MacEwan (British Library)
Title:	Researcher or librarian discovers two individuals represented by the same ID, wishes to split them.
Description:	A researcher or librarian views the information about herself in the authority system and discovers that works or other data associated with another identity with the same name have been assigned to her ID. She is able to report the error or edit the records herself in order to remove the data not associated with herself and use it to create another record for the other ID with its associated metadata
Primary Actor:	Researcher or librarian
Preconditions:	There is a publicly-accessible web interface to the authority system There is a mechanism for individual researchers to update information in the system The authority system controls diffusion of the identifier into other databases and has a notification protocol to remove and replace a deprecated ID The authority system holds metadata showing the database source of each metadata

	element it holds in a given record
Postconditions:	The information has been corrected and another ID has been added to the system
Main Success Scenario:	<ol style="list-style-type: none"> 1. Researcher/librarian accesses the authority system 2. Researcher/librarian views information associated with her identity and realizes that there is false information about works, affiliations that belong to another identity with the same name included in her ID record. 3. Researcher/librarian interacts with the system to update the information and indicates which data should be removed from her ID 4. The original record is corrected and the data removed is used to create a new record for another ID. 5. Notifications are sent to all other databases which are the source of the false metadata associated with the ID informing them of the data to be split from their existing ID and providing the new ID that can be associated with that data.
Extensions:	<p>3a. This may involve the researcher/librarian registering a user account with the system, requiring authentication of some sort</p> <p>3b. The system could otherwise provide a contact form for manual update of the information by administrators (Note: this is the method provided for the ISNI system)</p> <p>4a. The updated information may need to be propagated out to other systems (Note: methods above derived from ISNI update protocols)</p>

ID:	UC 4.3 – Daniel Hook (Symplectic) and Michael Conlon (University of Florida)
Title:	Researcher discovers metadata that needs amendment in single authority system.
Description:	A researcher views the information about herself in an authority system and discovers errors that need correction.
Primary Actors:	<p>Database owner: the owner of the authority system and the curation process associated with the presentation of the data, e.g. Cornell (arXiv.org), Elsevier (Scopus), Thomson Reuters (Web of Science)</p> <p>Data owner: the primary publisher of the data – this may be the copyright holder but may not always be (open access), e.g. Elsevier, Macmillan etc.</p> <p>Licensed Subscriber: a person or service wanting to understand when data has changed in the Database, e.g. Symplectic Elements; VIVO; Individual researcher wanting to track the research of others in their field; Government agent wishing to track research for assessment purposes.</p> <p>Data creator: a person or institution that created the research output (effectively the named author), e.g. Albert Einstein, The CERN Collaboration (or member thereof).</p>
Preconditions:	A “single authority system” or data source that can be considered authoritative, such as ArXiv, PubMed, Scopus, Web of Science. Some data sources such as ArXiv.org are in the direct control of the researcher and hence the actor mapping is more involuted.
Postcondition:	The information has been corrected and broadcast.
Main Success Scenario:	<ol style="list-style-type: none"> 1. <Data creator> browses online authority source owned by <Database owner> for their own outputs OR <Licensed Subscriber> receives / browses online authority source owned by <Database owner> for outputs they are monitoring for some activity. 2. <Data creator> spots a data error in one or more of their own research outputs OR <Licensed Subscriber> spots a data error in one or more of the outputs in which they have an interest. 3. <Data creator> reports the error to the <Database owner> OR <Licensed Subscriber> reports the error to the <Database owner>.

4. <Database owner> corroborates nature of error via third party. (In the case of Thomson Reuters or Scopus this is likely to be a manual/visual check of the paper publication or contacting the <Data owner>. In the case of arXiv.org this may involve contacting the <Data creator>.)
5. <Database owner> changes the metadata to reflect changes (or in the case of arXiv.org, asks the <Data creator> to make the changes). <Database owner> notifies <Data creator>/<Licensed Subscriber> of change in metadata OR <Database owner> reports that the <Data creator> or <Licensed Subscriber> that the report is in error and that metadata will not be changed.
6. <Database owner> broadcasts changes to <Licensed Subscribers>.