

Task	Subtask	Dependencies	Description	Output	Milestone(s)	Duration (months)	Lead(s)	Participants	References
1	Landscape and requirements analysis		Research existing collections descriptions and assess which could be used or adapted. Define CD scope and requirements.	Landscape and requirements analysis		4			
1.1		Collection descriptions methodology crosswalk		Crosswalk of existing collections descriptions methodologies	Crosswalks ready	2	?	Mareike Petersen, Niels Raes	https://docs.google.com/spreadsheets/d/1qX18gn1puRXVAsmZHOE_Epnp95GdPUyZMa8pRpgU_e8/edit#gid=0
1.2		Collections descriptions frameworks crosswalk		Crosswalk of existing and previous collections descriptions standards	Use cases collected	2	Niels Raes	Connie Rinaldo, Terry Catapano, Mareike Petersen, Mike Trizna, Niels Raes, Carolyn Sheffield	https://docs.google.com/spreadsheets/d/1qX18gn1puRXVAsmZHOE_Epnp95GdPUyZMa8pRpgU_e8/edit#gid=0
1.3		Identify breakdown dimensions	1.1, 1.2	Identify relevant dimensions for collections breakdowns (geographic, taxonomic, temporal etc)		2	?	Niels Raes	Matt Woodburn, Mareike Petersen, Mike Trizna, Niels Raes
1.4		Define scope of collection types	1.1, 1.2	Define initial scope of collections types to be supported (specimens, observations, field notes, media, datasets etc)		2	?	?	from DP: document that this topic is decided. Needs to be formally written up. Initial scope is physical objects in a collection (not datasets, not observations).
2	Communication plan		Design and implement a communication plan for the task group	Communication plan		0.75			
2.1		Create communication plan		Create and document a group communication plan		0.75	?	Deborah Paul, Matt Woodburn	
2.2		Update group charter		Add details to the public group charter		0.75	?	Deborah Paul, Matt Woodburn	
3	Data model		High level data model to define entities and relationships, informed by and tested against use cases	Data model definition document	Data model finalised	6			
3.1		Develop high level data model	1.1, 1.2	Develop a data model to support: 1. Recursive, dynamic breakdowns of collections into 'collection units' across a multiple dimensions 2. Changes to collection breakdowns and relationships over time 3. Associating metrics to collections so that they are extensible, and can be aggregated at any level of the dynamic collection hierarchy 4. Linking dimensions to external controlled vocabularies, ontologies and hierarchies 5. Linking collection breakdowns to relevant entities - institutions, people etc 6. Dynamically grouping collection units for contextual tagging and reporting 7. Linking collection units to item-level digital records in external data stores		4	Matt Woodburn, ?	Janeen Jones, Sharon Grant*, Kate Webbink, Matt Woodburn, Holly Little, Wouter Addink, Ramona Walls, Dave Smith, William Ulate	
3.2		Extend use cases		Evaluate and extend reuse use case analysis done by the CDD ICEDIG work package task group. Add our use cases to this form. Check fit of our use cases to these defined user groups.		4	?	Deborah Paul, Niels Raes	
3.3		Reconcile use cases against data model	3.1, 3.2	Reconcile use cases against first draft high-level model		2	?	Ramona Walls, William Ulate	https://github.com/tdwg/ncd/wiki/Use-Cases
4	Data standards		Develop DwC extension and thesaurus for natural science collections (a specific collection object type)			8			
4.1		Identify existing terms	3	Identify existing terms within DwC and external standards ontologies that map to CD data model entities and properties		2	?	Kate Webbink, Sharon Grant*, Janeen Jones, Matt Woodburn, Dag Endresen, Wouter Addink, William Ulate	https://docs.google.com/spreadsheets/d/1SDbtZxEzg0t10OSNDPJN0XSye6mMOTTClBH3kh-HUYA/edit#gid=0
4.2		Define missing terms	3, 4.1	Define missing terms and entities to add to DwC standard		4	?	William Ulate	
4.3		Identify existing vocabularies	1.3, 1.4	Identify existing controlled vocabularies, hierarchies and ontologies for relevant collections breakdown dimensions		4	?	Dag Endresen, Ramona Walls, Kerstin Lehnert, Matt Woodburn, William Ulate	Work with the TDWG Vocab Group: https://www.tdwg.org/community/bdg/tg-4/
4.4		Persistent identifiers on collection units	3	Design method for assigning and managing persistent identifiers on collection units		2	?	Dag Endresen, Wouter Addink, Ramona Walls, Kerstin Lehnert	DOI (DataCite DOI) for collections (?), ISNI, http://www.isni.org/ (ISNI is superset of ORCID), VIAF, https://viaf.org/ , Org ID, https://www.arin.net/resources/request/org.html (?), http://www.igsn.org
5	Documentation		Compile and share guidance documentation	Guidance document including recommendations on citation		2			

5.1		Draft data management guidelines	3, 4	Draft CD data management guidelines. How do people create and manage data within the scope of this standard? e.g., 1) manually describe and post data (for harvesting, as is currently done with DwCArchives); 2) submit through web interface directly to registry (as with GRBio); 3) automatically create summary from collection management system and submit/post. Also describe how on-going maintenance might proceed, from gross description to finer-grained descriptions. Can also be called a "Concept of Operations", i.e., a narrative describing categories of users/actors and how the data are created, updated, aggregated, searched, etc.			2	?	Stan Blum, Matt Woodburn, Donald Hobern, Kerstin Lehnert	
5.2		Citation guidance	3, 4	Provide recommendations on citing collections			1	?	?	someone with RDA connections? Anne Thessen?
6	Reference examples			Assemble example implementations (e.g. in RDF), using data provided by relevant members of the group			4			
6.1		Implement reference examples	3, 4, 5	These examples would include 1) whole high-level collection descriptions, 2) more nuanced, detailed, atomized and normalized examples, and 3) automated examples			4	?	Dag Endresen, other group members like FM, iDigBio (Collections Catalogue - can get some volunteers), NHM, DISSCo (Maybe ALA?)	
7	Develop extensions			Look for requirements to expand beyond the original scope of natural sciences.			1			
7.1		Propose extensions and new task groups		Other task groups would take on adding other collection types, if desired. Means the high level data model is well-developed and extensible, and it is clear on how to extend it.			1	?	Deborah Paul, Mike Trizna	

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row	ordering	Time Needed for Task	Task	Milestones	Description of work	Output	People	Deadline	See also						
1	1	4 months	Analyze Landscape and requirements		See if existing collections descriptions exist that we might use / adapt	Landscape and requirements analysis	Connie Rinaldo, Terry Catapano								
2	1			Crosswalks ready	Crosswalk of existing collections descriptions methodologies		Mareike Petersen, Niels Raes, others?		https://github.com/tdwg/ncd/wiki/Crosswalks						
3	1			Use cases collected	Crosswalk of existing and previous collections descriptions standards		Mareike Petersen, Mike Trizna, Niels Raes, others?		https://docs.google.com/spreadsheets/d/1qX18gn1puRXVAsmZHOE_Epnp95GdPUyZMaBpRpgU_e8/edit#gid=0						
4	1				Identify relevant dimensions for collections breakdowns (geographic, taxonomic, temporal etc)		Mareike Petersen, Mike Trizna, Niels Raes		https://docs.google.com/spreadsheets/d/1qX18gn1puRXVAsmZHOE_Epnp95GdPUyZMaBpRpgU_e8/edit#gid=0						
5	1				Define initial scope of collections types to be supported (specimens, observations, field notes, media, datasets etc)										
6	2	3 weeks	Outline a Communication plan		write up how we will do this	Communication plan	Deborah Paul, input from all	2018-08-22							
7	2				add this information to the charter										
					Develop data model to support these requirements:										
					1. Recursive, dynamic breakdowns of collections into 'collection units' across a multiple dimensions										
					2. Changes to collection breakdowns and relationships over time										
					3. Associating metrics to collections so that they are extensible, and can be aggregated at any level of the dynamic collection hierarchy										
					4. Linking dimensions to external controlled vocabularies, ontologies and hierarchies										
					5. Linking collection breakdowns to relevant entities - institutions, people etc		Field Museum* (Janeen Jones, Sharon Grant*, Kate Webbink), Matt Woodburn, Holly Little, Wouter Addink, Ramona Walls								
8	3	6 months	Develop high level data model	hierarchy of collection classes defined	6. Dynamically grouping collection units for contextual tagging and reporting	Data model definition document									
					7. Linking collection units to item-level digital records in external data stores										
9	3				Reconcile use cases against first draft high-level model		Ramona Walls		https://github.com/tdwg/ncd/wiki/Use-Cases						
					Evaluate and extend reuse use case analysis done by the CDD ICEDIG work package task group. Add our use cases to this form. Check fit of our use cases to these defined user groups. (4 months)		Deborah Paul, Niels Raes, ...								
10	3														
			Develop extension/thesaurus for natural science collections (a specific collection object type)												
11	4	8 months			Identify existing terms within DwC and external standards ontologies that map to CD data model entities and properties (relies on 1a,3a)		Kate Webbink, Sharon Grant*, Janeen Jones, Matt Woodburn, Dag Endresen, Wouter Addink		https://docs.google.com/spreadsheets/d/1SDbtZxEzg0t10OSNDPJN0XSye6mMOTTClBH3xh-HUYA/edit#gid=0						
12	4				Define missing terms and entities to add to DwC standard										
							Dag Endresen interested to participate (after GBIF GB25), others? Stan?								
13	4				Identify existing controlled vocabularies, hierarchies and ontologies for relevant collections breakdown dimensions		Ramona Walls, Kerstin Lehnert		work with the TDWG Vocab Group https://www.tdwg.org/community/bdq/tg-4/						
			Persistent identifiers on collection units		Design method for assigning and managing persistent identifiers on collection units		Dag Endresen interested to participate (after GBIF GB25), Wouter Addink, Ramona Walls, Kerstin Lehnert		DOI (DataCite DOI) for collections (?), ISNI, http://www.isni.org/ (ISNI is superset of ORCID), VIAF, https://viaf.org/ , Org ID, https://www.arin.net/resources/request/org.html (?), http://www.igsn.org						
14	4														
					Draft CD data management guidelines. How do people create and manage data within the scope of this standard? e.g., 1) manually describe and post data (for harvesting, as is currently done with DwCArchives); 2) submit through web interface directly to registry (as with GRBio); 3) automatically create summary from collection management system and submit/post. Also describe how on-going maintenance might proceed, from gross description to finer-grained descriptions. Can also be called a "Concept of Operations", i.e., a narrative describing categories of users/actors and how the data are created, updated, aggregated, searched, etc.										
			Compile and Share Guidance documentation			Guidance document including recommendations on citation	Stan, Matt, Donald, Kerstin Lehnert								
15	5	1 month													
16	5	1 month			Provide recommendations on citing collections										
					Assemble example implementation (RDF?) have our group (relevant members) create examples with their data										
					These examples would include 1) whole high-level collection descriptions, 2) more nuanced, detailed, atomized and normalized examples, and 3) automated examples	Reference Implementation(s)	Dag Endresen (interested to participate, after GBIF GB25) other group members like FM, iDigBio (Collections Catalogue - can get some volunteers), NHM, DiSSCo (Maybe ALA?)								
17	6	4 months?	Implement examples as reference												
18	7	1 month	Develop Extensions (new task groups)		Original scope is natural sciences. Other task groups would take on adding other collection types, if desired. Means the high level data model is well-developed and extensible, and it is clear on how to extend it.		Deborah Paul, Mike Trizna								

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