Specify 6.8.01 Release Notes

Specify Collections Consortium, 15 September 2021

[Specify *Administrators: This release updates the Specify database schema version from v2.7 to v2.9 (v2.8 skipped). Once the database is updated, all Specify 6 workstations will need to be updated to this release. Sites using Specify 6 and 7 concurrently will need to update both applications for schema compatibility.*]

The improvements and extensions in this Specify 6 release are the culmination of several months of close collaboration by SCC staff and members. Highlights include: 1) new Specify Interactions and identifiers, 2) expanded support for item-level processing in specimen transactions, and 3) introduction of the **Specify Network** with services for retrieving and comparing remote data related to the specimens and species in your Collection. These capabilities are summarized below along with lists of smaller enhancements, bug fixes, and database schema update details.

1. Support for New Interactions and Identifiers

Disposals are transactions that document the reason for the removal of a specimen from a collection other than gifts or exchanges. A Disposal record may be required by collection policy when a specimen is consumed by destructive analysis, can no longer be found, was lost in transport, not returned from a loan, or discarded due to poor condition. The new Disposal data table supports institutions with disposal policies that require tracking of intentional and unintended specimen removals.

Deaccessions are transactions that document relinquishing the legal ownership of a specimen. Deaccession transactions are similar to Disposals in that they deal with specimens that are no longer in the collection. Disposals document the curatorial details for the removal of a specimen, whereas Deaccession records represent a change in legal ownership. Deaccessions can also document changes in ownership for specimens transmitted as Gifts or Exchanges. In this release, a Deaccession requires a corresponding Gift, Exchange Out or Disposal transaction record. Deaccessioned Collection Objects and Preparations remain in the database but they can be filtered out with queries to exclude them from counts and exports.

Preparation Identifiers are needed to track the movement of the physical parts of Collection Objects, Preparations. Typically, bar code labels are affixed to Preparations to uniquely identify them. In Specify's data model, Collection Objects logically participate in transactions such as Loans, while one or more Preparations belonging to those CO's represent the actual, physical, loaned objects. IDs that identify Preparations can now be used in Transactions as well. The BarCode field in Preparation is designed for use with a barcode reader to efficiently record items in outgoing and returned Loans. We added further flexibility to choose which field in Preparation will be used for internal identifiers when creating a Loan, Gift, Exchange Out or Disposal. A user preference can be configured to specify the table and field to use for identifying

Preparation records when one of those Interactions is created. It is important to emphasize that these identifiers are aids for internal transaction processing only and are not intended for publishing or external use. For globally-unique, permanent identifiers, Specify automatically assigns UUIDs to separate GUID fields in its core data tables, including Collection Object and Preparation.

Additionally, Record Sets composed of Preparation records can now be dragged and dropped onto the Loan, Gift, Exchange Out, and Disposal sidebar actions to create and complete new interaction records. Previously only Record Sets of Collection Objects could do this. Specify's Information Request function has also been extended; it can now be used to initiate Loan, Gift, Exchange Out, or Disposal transactions.

2. Expanded Item-Level Processing

In Specify, the "Collection Object" concept logically equates to 'lots' for lot-based disciplines and specimens for specimen-based catalogs. A Preparation is the physical manifestation of Collection Object that is preserved with a particular Preparation Type, e.g, an herbarium sheet, a pinned insect, cleared and stained fish, a mammal skull. An increasing number of SCC collections have requested support for tracking the individual physical artifacts that can comprise a single Preparation. Specify models the individual pieces of a Preparation as "Items". Examples include: the individual seeds in a seed vial, subsamples carved from a single frozen tissue specimen, or multiple herbarium sheets that comprise a single unwieldy specimen. Item IDs and counts come into focus when managing museum transactions. For example, the total number of sheets (items) of herbarium specimens loaned to another institution is an important data item on a loan form or packing list for shipping, and for verifying the completeness of a returned loan.

In this update, Specify enables item-level processing in several Specify Interactions and data table forms to make item counts and totals more accessible. Specify 6 had already offered item-level processing for Loans with data fields for: total, resolved, and unresolved items. In this update, we added Item count and total fields to: Accession, Deaccession, Disposal, Exchange Out, and Gift processing. Item fields are virtual and not in the database schema, but are visible in the Query Builder and can be included on data forms and in printed reports (see list below). The new fields are placed on the default data forms in this release. Collections with customized data forms can contact SCC Support for assistance in retrofitting their forms to include them.

3. Introducing the Specify Network

The biological collections community is developing a vision for a global, biodiversity information architecture that will enable powerful new methods for digital interactions among organizations that manage specimen data. A world-wide specimen data architecture based on digital object concepts, permanent identifiers, and APIs will transform biological collections computing by supporting network-enabled research and curatorial workflows. Museums will benefit greatly from network services that provide immediate access to downstream information derived from objects in their collections.

The Specify Network, introduced here, takes a step toward that future. Technologically, it includes: a network services Broker, an ID Resolver, and the Specify Cache. We developed these forward-looking technologies in collaboration with the Biotaphy Project (https://biotaphy.github.io/, NSF #1930005). Together the components enable network integrations based on Specify 6's Collection Object GUIDs and Taxon names. The Specify Network can be invoked while viewing a Collection Object record by using the large button in the upper right corner of the form. Clicking the button will send the specimen record GUID to the Specify Network for executing queries on remote services (currently including: GBIF, iDigBio, Lifemapper, MorphoSource, and WoRMS). The Network will then create a summary web page of any available information returned with the query results. Unlike weblinks where the path to information related to your collection objects requires a static URL, the Specify Network performs discovery and linking functions "on-the-fly" through dynamic, network interactions.

The Specify Cache contains copies of Specify 6 database records exported in the Darwin Core standard. Specify 6 will export a subset of your collection's occurrence data to the Specify Cache that runs on a private SCC server. A new Preferences menu option enables a Collection to opt-in to using the Specify Cache. The Cache has no web interface; its data are viewable in Specify only through APIs with the Collection Object GUIDs from your collection. Currently, the main function of the Specify Cache is to enable comparisons of Collection Object data fields in your Specify 6 database with records held by aggregators and name authorities. In a future release the Specify Cache, Broker, and Resolver will enable statistical analysis to quantitatively describe your collection in new, research-relevant ways. Although the Specify Network will not immediately reconcile multiple versions of specimen records and related distributed update issues, it will provide a technical path to take on data integration challenges such as moving occurrence records between collection management systems.

The Specify Network is a core element of the SCC's technology vision. Specify institutions will benefit directly from its information and computational service integrations. Growing and extending it will help SCC institutions envision and engineer network-enabled workflows, and will reinforce the role of museums as primary sources of vouchered species information in a future global, biodiversity data architecture.

Capability Enhancements

https://github.com/specify/specify6/issues/   (postpend number to URL to see GitHub issue)

398   (& 805) Add compatibility for .xlsx (Microsoft Excel) format files. (Note: The Specify 6 WorkBench has an admin configurable limit of 7,000 rows per import file/Data Set to reduce the possibility of running out of Java memory with large WorkBench uploads.)

680   The Shipment subform is no longer active by default when opening a new interaction record.

737   GeoLocate's map server is now the default, not NASA Whirlwind.

746   Exports that include Lat2/Long2 will no longer add 'null' to those fields in exported records.

756   Preparation Record Sets will now open in the Collection Object forms, but other Record Sets not associated with a 'Main' form will offer a notification.

764   When attachment files can not be located a prompt will display: "There were no files to upload."

810   The maximum number of matches allowed for a Tree rank in query results has increased to 6,000.

802   Improved support for displaying and printing for 2D/DataMatrix barcodes.

821   An xml library update fixed a problem with handling Specify resource files.

822   A second redundant button for importing a schema has been deleted in the Schema & Localization Tools window. Also if a file contains more than one language, Specify will ask which language you want to import.

851   Taxa with associated common names can now be merged.

853   Preferred Taxon field field will now reflect the format created for the Taxon table in the same way that Taxon field does.

854   Preferred Taxon field can now be laid out as a remarks field (textareabrief component) on forms.

856   The WorkBench now detects inconsistent Taxon rank mappings in data sets.

885   The "Loans without Preps" sidebar item has been removed; uncataloged items can now be added to new or existing Loans. Uncataloged items can also be added to new or existing Gifts, Exchange Outs and Disposals through the main system of dialogs.

910   Added support for embargo function with addition of these fields to the Collection Object table: Reason for Embargo, Embargo Start Date, Embargo Release Date, Embargo Authority (link to the Agent).

925   (& 941, 946) Exchange Out Number field now requires a value by default. The value is enforced to unique (scoped to Discipline). The field is now accessible for configuring Simple Search.

Bugs Fixed

765   Specify 6 database schemas can now be exported and shared with other Specify sites.

773   DNASequence can now be logged along with the parent information.

791   Bug causing alternate language descriptions to be indeed to fields in the English Schema Configuration has been fixed. Original descriptions have been restored for English localizations.

794   Collecting Trip Attachments can now be used without a bogus error notification.

798   Editing Preparations with existing storage information will now update correctly without complaint.

803   Custom tree nodes have been upgraded to allow for variant punctuation.

804   When a blank Excel file template for new data is exported from the WorkBench, all of the database upload mappings including taxonomy are now included. The mappings are imported and re-used for uploading new data.

820   A "Confirm Override" dialog will now display after choosing to override another user using a Specify data tree.

842   The Biostrat checkbox is no longer checked automatically when creating a Chronostrat record from a form.

848   An issue with tree merges involving the AlternateStorageID was fixed.

892   Loan Returns now consistently require a 'Received By' Agent to be associated with a Loan Return event.

913   Highlight New Cells in the Workbench will now highlight appropriately if there are Locality or Geography fields in a Data Set mapping but no Collecting Event table fields mapped.

Specify Schema Update (v2.9): Additions, Changes, Virtual Fields

Tables and Fields Added:

Table	Field	Data Type	Length
Agent	Text3	text	65535
Agent	Text4	text	65535
Agent	Text5	text	65535
Borrow	Status	varchar(64)	64
Collecting Event	Text6	text	65535
Collecting Event	Text7	text	65535
Collecting Event	Text8	text	65535
Collecting Event	UniqueIdentifier	varchar(128)	128
Collection Object	EmbargoAuthorityID	int(11)	
Collection Object	EmbargoReason	text	65535
Collection Object	EmbargoReleaseDate	date	
Collection Object	EmbargoReleaseDatePrecision	tinyint(4)	
Collection Object	EmbargoStartDate	date	
Collection Object	EmbargoStartDatePrecision	tinyint(4)	
Collection Object	Text4	text	65535
Collection Object	Text5	text	65535
Collection Object	Text6	text	65535
Collection Object	Text7	text	65535
Collection Object	Text8	text	65535
Collection Object	UniqueIdentifier	varchar(128)	128
Common Name Tx Citation	FigureNumber	varchar(50)	50
Common Name Tx Citation	IsFigured	bit(1)	
Common Name Tx Citation	PageNumber	varchar(50)	50
Common Name Tx Citation	PlateNumber	varchar(50)	50
Deaccession	Agent1ID	int(11)	
Deaccession	Agent2ID	int(11)	
Deaccession	CreatedByAgentID	int(11)	
Deaccession	Date1	date	
Deaccession	Date2	date	
Deaccession	DeaccessionDate	date	
Deaccession	DeaccessionID	int(11)	
Deaccession	DeaccessionNumber	varchar(50)	50
Deaccession	Integer1	int(11)	

Deaccession	Integer2	int(11)	
Deaccession	Integer3	int(11)	
Deaccession	Integer4	int(11)	
Deaccession	Integer5	int(11)	
Deaccession	ModifiedByAgentID	int(11)	
Deaccession	Number1	float	
Deaccession	Number2	float	
Deaccession	Number3	float	
Deaccession	Number4	float	
Deaccession	Number5	float	
Deaccession	Remarks	text	65535
Deaccession	Status	varchar(64)	64
Deaccession	Text1	text	65535
Deaccession	Text2	text	65535
Deaccession	Text3	text	65535
Deaccession	Text4	text	65535
Deaccession	Text5	text	65535
Deaccession	TimestampCreated	datetime	
Deaccession	TimestampModified	datetime	
Deaccession	Type	varchar(64)	64
Deaccession	Version	int(11)	
Deaccession	YesNo1	bit(1)	
Deaccession	YesNo2	bit(1)	
Deaccession	YesNo3	bit(1)	
Deaccession	YesNo4	bit(1)	
Deaccession	YesNo5	bit(1)	
Deaccession Agent	AgentID	int(11)	
Deaccession Agent	CreatedByAgentID	int(11)	
Deaccession Agent	DeaccessionAgentID	int(11)	
Deaccession Agent	DeaccessionID	int(11)	
Deaccession Agent	ModifiedByAgentID	int(11)	
Deaccession Agent	Remarks	text	65535
Deaccession Agent	Role	varchar(50)	50
Deaccession Agent	TimestampCreated	datetime	
Deaccession Agent	TimestampModified	datetime	
Deaccession Agent	Version	int(11)	
Deaccession Attachment	AttachmentID	int(11)	

Deaccession Attachment	CreatedByAgentID	int(11)	
Deaccession Attachment	DeaccessionAttachmentID	int(11)	
Deaccession Attachment	DeaccessionID	int(11)	
Deaccession Attachment	ModifiedByAgentID	int(11)	
Deaccession Attachment	Ordinal	int(11)	
Deaccession Attachment	Remarks	text	65535
Deaccession Attachment	TimestampCreated	datetime	
Deaccession Attachment	TimestampModified	datetime	
Deaccession Attachment	Version	int(11)	
Determination	Integer1	int(11)	
Determination	Integer2	int(11)	
Determination	Integer3	int(11)	
Determination	Integer4	int(11)	
Determination	Integer5	int(11)	
Determination	Number3	float	
Determination	Number4	float	
Determination	Number5	float	
Determination	Text3	text	65535
Determination	Text4	varchar(128)	128
Determination	Text5	varchar(128)	128
Determination	Text6	varchar(128)	128
Determination	Text7	varchar(128)	128
Determination	Text8	varchar(128)	128
Determination	YesNo3	bit(1)	
Determination	YesNo4	bit(1)	
Determination	YesNo5	bit(1)	
Determination Citation	FigureNumber	varchar(50)	50
Determination Citation	IsFigured	bit(1)	
Determination Citation	PageNumber	varchar(50)	50
Determination Citation	PlateNumber	varchar(50)	50
Disposal	CreatedByAgentID	int(11)	
Disposal	DeaccessionID	int(11)	
Disposal	DisposalDate	date	
Disposal	DisposalID	int(11)	
Disposal	DisposalNumber	varchar(50)	50
Disposal	doNotExport	bit(1)	
Disposal	ModifiedByAgentID	int(11)	

Disposal	Number1	float	
Disposal	Number2	float	
Disposal	Remarks	text	65535
Disposal	Text1	text	65535
Disposal	Text2	text	65535
Disposal	TimestampCreated	datetime	
Disposal	TimestampModified	datetime	
Disposal	Type	varchar(64)	64
Disposal	Version	int(11)	
Disposal	YesNo1	bit(1)	
Disposal	YesNo2	bit(1)	
Disposal Agent	AgentID	int(11)	
Disposal Agent	CreatedByAgentID	int(11)	
Disposal Agent	DisposalAgentID	int(11)	
Disposal Agent	DisposalID	int(11)	
Disposal Agent	ModifiedByAgentID	int(11)	
Disposal Agent	Remarks	text	65535
Disposal Agent	Role	varchar(50)	50
Disposal Agent	TimestampCreated	datetime	
Disposal Agent	TimestampModified	datetime	
Disposal Agent	Version	int(11)	
Disposal Attachment	AttachmentID	int(11)	
Disposal Attachment	CreatedByAgentID	int(11)	
Disposal Attachment	DisposalAttachmentID	int(11)	
Disposal Attachment	DisposalID	int(11)	
Disposal Attachment	ModifiedByAgentID	int(11)	
Disposal Attachment	Ordinal	int(11)	
Disposal Attachment	Remarks	text	65535
Disposal Attachment	TimestampCreated	datetime	
Disposal Attachment	TimestampModified	datetime	
Disposal Attachment	Version	int(11)	
Disposal Preparation	CreatedByAgentID	int(11)	
Disposal Preparation	DisposalID	int(11)	
Disposal Preparation	DisposalPreparationID	int(11)	
Disposal Preparation	LoanReturnPreparationID	int(11)	
Disposal Preparation	ModifiedByAgentID	int(11)	
Disposal Preparation	PreparationID	int(11)	

Disposal Preparation	Quantity	int(11)	
Disposal Preparation	Remarks	text	65535
Disposal Preparation	TimestampCreated	datetime	
Disposal Preparation	TimestampModified	datetime	
Disposal Preparation	Version	int(11)	
DNA Sequencing Run Citation	FigureNumber	varchar(50)	50
DNA Sequencing Run Citation	IsFigured	bit(1)	
DNA Sequencing Run Citation	PageNumber	varchar(50)	50
DNA Sequencing Run Citation	PlateNumber	varchar(50)	50
Exchange Out	DeaccessionID	int(11)	
Gift	Date1	date	
Gift	Date1Precision	tinyint(4)	
Gift	DeaccessionID	int(11)	
Gift	Status	varchar(64)	64
Gift	Text3	text	65535
Gift	Text4	text	65535
Gift	Text5	varchar(128)	128
Gift Agent	Date1	date	
Loan	Status	varchar(64)	64
Locality	UniqueIdentifier	varchar(128)	128
Locality Citation	FigureNumber	varchar(50)	50
Locality Citation	IsFigured	bit(1)	
Locality Citation	PageNumber	varchar(50)	50
Locality Citation	PlateNumber	varchar(50)	50
Preparation	Text10	text	65535
Preparation	Text11	text	65535
Preparation	Text12	varchar(128)	128
Preparation	Text13	varchar(128)	128
Taxon Citation	FigureNumber	varchar(50)	50
Taxon Citation	IsFigured	bit(1)	
Taxon Citation	PageNumber	varchar(50)	50
Taxon Citation	PlateNumber	varchar(50)	50

Changed Database Schema Fields:

Table	Field	Previous Data Type	New Data Type
Address	Address3	varchar(64)	varchar(400)

Address	Address4	varchar(64)	varchar(400)
Address	Address5	varchar(64)	varchar(400)
Borrow Material	Description	varchar(50)	varchar(250)
Collecting Trip	Collecting Trip Name	varchar(250)	varchar(400)
Collection Object	Description	varchar(255)	text
Determination	FeatureOrBasis	varchar(50)	varchar(250)
Reference Work	Title	varchar(255)	varchar(400)

Added Virtual (Calculated) Fields:

Interactions		
Table	**Field Caption**	**Definition**
Accession	Total Items	# of Items that were ever part of the Accession, usually the original number
	Total Current Items	# of Items currently included in the Accession
	Total Preps	# of Preparations in the Accession
	Total Collection Objects	# of COs in the Accession
Deaccession	Total Preps	# of Preparations in the Deaccession
	Total Items	# of Items in the Deaccession
Disposal	Total Preps	# of Preparations in the Disposal
	Total Items	# of Items in the Disposal
Exchange Out	Total Preps	# of Preparations in the Exchange Out
	Total Items	# of Items in the Exchange Out
Gift	Total Preps	# of Preparations in the Gift
	Total Items	# of Items in the Gift
Loan		All of the following, virtual, calculated fields associated with Loans existed prior to this update.
	Total Preps	# of Preparations in the Loan

	Total Items	# of Items in the Loan
	Resolved Preps	# of Preparations returned or accounted for in the Loan return
	Resolved Items	# of Items returned or accounted for in the Loan return
	Unresolved Preps	# of Preparations not returned or unaccounted for
	Unresolved Items	# of Items not returned or not accounted for
Objects		
Collection Object	Total Items	# of Items that were ever part of a Collection Object, usually the original count of items
	Total Current Items	# of Items currently subsumed by the CO
Preparation	CountAmt	# of Items in a Preparation
		This is a pre-existing SQL field in the Preparation Table, shown as "Count" on the default data forms.
	Current Count	# of Items currently included in the Preparation