



iDigBio

Integrated Digitized Biocollections



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Digitization Workflow Workshop Report

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Developing Robust Object-to-Image-to-Data (DROID) Workflow Workshop

30-31st May 2012, Florida Museum of Natural History, University of Florida (FLMNH)

Biological specimens document the historical and modern occurrence of plant and animal species - and most of what we know about the diversity and distribution of life on earth. The majority of collected specimens have yet to be digitized, but at the same time, current biodiversity digitization processes and technologies are often inefficient and uncoordinated, preventing timely and cost-effective digitization of these specimens. This research workshop focused on the design, documentation, and optimization of workflows necessary to transform physical specimens collected in the field into useful, shareable, and manageable digital objects within a collection. Approximately twenty hands-on collections experts provided input during the workshop.

Why document workflows?

Workflow documentation is a powerful tool both within a collection and across the entire collections community. Internally, effective workflow documentation for a collection can highlight inefficiencies, identify bottlenecks that hinder throughput, and expose opportunities

Workflow Modules and Task Lists



collections. The second working group, [Pinned Specimens in Trays and Drawers](#), invested its time developing modules to support effective entomological digitization workflows. [Things in Spirits in Jars](#) devoted time to workflows for fluid-preserved collections. Other preservation types will follow, including fluid collections and other 3-dimensional objects, concluding with the development of an overall project management module designed to provide guidance for developing and managing digitization projects across disciplines and preservation types.

We have chosen a modular approach for presenting our results in order to accommodate the broad range of workflow implementations within the collections community. We recognize that there is no consensus workflow that fits all situations, even within a single preservation type. In light of this, we have attempted to assemble orderly, comprehensive task lists to serve as foundations from which institutionally specific workflows can be created. Not all institutions will use every task, but we hope that the lists we have developed encompass all relevant digitization tasks. We also hope that those in the collections digitization community will provide feedback on these lists, either through forum posts or e-mails to Gil Nelson, alerting us to deficiencies and oversights.

Links to published modules as they are completed are provided below:

[Flat Sheets and Packets Working Group - Vascular and Non-vascular Plants](#)

- [Module 1 Pre-digitization Curation Tasks](#)
- [Module 2 Imaging Station Setup Camera](#)
- [Module 3 Imaging Station Setup Scanner](#)
- [Module 4 Imaging Tasks](#)
- [Module 5 Image Processing Tasks \(Rev 2012-11-07\)](#)
- [Module 6 Data Capture Tasks](#)

[Pinned Things in Trays and Drawers Working Group - Dried Insects](#)

- [Module 8 Google Tasks Applicable to Two or More Modules](#)

One outgrowth of the [DROID](#) (Developing Robust Object-to-Image-to-Data) workflow workshop held in May 2012 was the establishment of a series of working groups, each focused on workflow modules and tasks for various preparation types. The first of these groups, informally called the [Flat Sheets and Packets Working Group](#), was charged with fleshing out task lists for digitizing vascular and non-vascular plant

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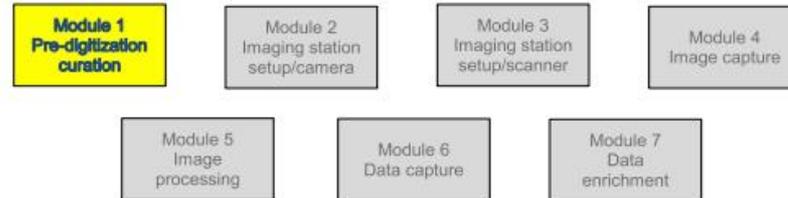
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Modular
 Laundry list of tasks (comprehensive)
 Suggested order
 Generalized
 Not necessarily linear
 Not all tasks appropriate for all situations
 Designed for customization

Workflow Detail: Pre-digitization Curation (for flat sheets and packets)

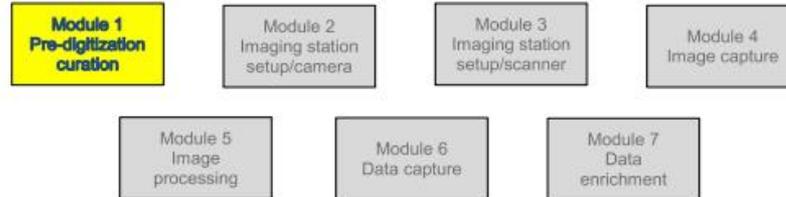


Module 1: Pre-digitization Curation Task List

Task ID	Task Description	Explanations and Comments	Resources
T1	Apply storage locator barcodes to storage locations (rooms, cabinets, shelves, folders, drawers, etc).	<p>Most useful when systematically digitizing an entire collection. Otherwise potentially helpful with herbarium inventory.</p> <p>May be less helpful for collections that are digitizing in random order or only portions of the collection related to specific projects, or with significant separation between the pre-digitization curation, databasing, and image capture modules.</p>	Barcodes, QRcode, DataMatrix.
T2	Select specimens to digitize.	For herbaria, this often includes all specimens. Where this is not the case, selection should follow the institution's pre-determined digitization policies or project management plan.	Digitization policy manual or project management plan.
T3	Associate/insert machine readable barcodes/documents with/into folders.	<p>Some institutions create machine readable documents to gather data at the cabinet and/or folder level. Documents might contain such information as family, higher geography, and current identification ("filed-as name"). These data will be read and associated with individual collection records in Module 4, T1 or Module 7.</p> <p>Tasks T2 or T3 might also include determining whether specimens are out on loan or</p>	QRcodes, DataMatrix, 1D barcode, or OCR-readable documents for insertion into specimen folders.

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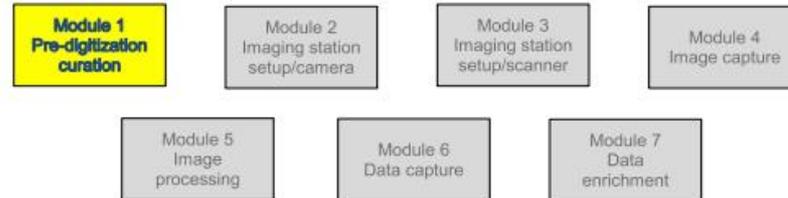


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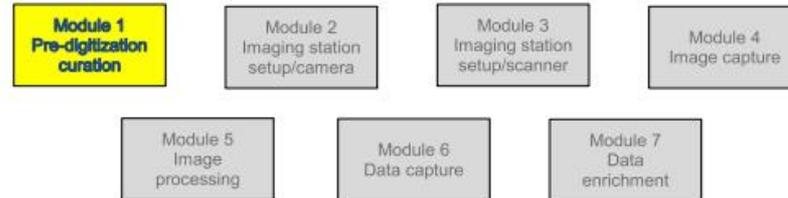


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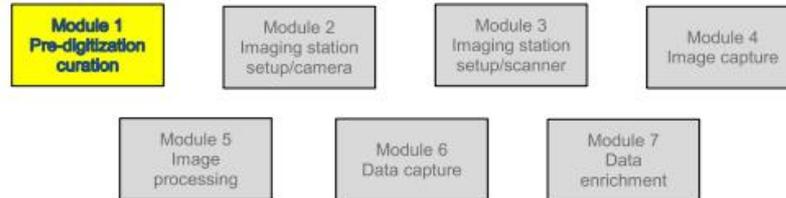


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