Workflow for Electronic Records

As with paper records, accessioning of electronic records establishes physical and legal custody, as well as physical and administrative control of records.   These steps aid in appraisal, arrangement, and description to ensure further use, management, maintenance, and long-term viability of the records. They also ensure that the integrity and authenticity of records are maintained.

However, unlike paper records, establishing control through accessioning is time sensitive as digital records have a higher risk of deterioration and data loss over time.   Thus control (distinct from custody) is concerned with reducing preservation threats. Stabilizing digital materials and moving them to long-term storage are part of establishing basic intellectual and administrative control.

The following workflow aids in establishing control of digital records.   As part of intellectual and administrative control the information gathered by various tools aids in producing high-level description, estimating the extent of and dates of creation, the intellectual property status, and creates an overview of the contents (such as gathering information on formats). The information gathered contributes to the inventory for basic intellectual control while maintaining authenticity, reliability or viability of records. Furthermore, it creates documentation of these actions.

This workflow focuses on the archival principles at work in each step of processing an electronic accession. For more on working with the individual tools, see the "Workflow Tools Procedures" document. The tools and steps used to create this workflow were influenced by:

- The work done by the Digital POWRR project, including their tool grid evaluation (http://digitalpowrr.niu.edu/);
- The Open Archival Information Systems (OAIS) model (http://public.ccsds.org/publications/archive/650x0m2.pdf);
- The National Data Stewardship Alliance (NDSA) levels of digital preservation (http://www.digitalpreservation.gov/documents/NDSA_Levels_Archiving_2013.pdf);
- ISO 16363 (Trusted Digital Repositories) (https://www.crl.edu/archiving-preservation/digital-archives/metrics-assessing-and-certifying/iso16363) ;
- OCLC's "Demystifying Born-Digital" research collection (http://www.oclc.org/research/themes/research-collections/borndigital.html) ;
- And the Digital Preservation Coalition's Digital Preservation Handbook (http://handbook.dpconline.org/).

Accessing

For the purposes of Minimal Processing, all steps in the Accessioning Phase should be considered required. Steps in later phases should be considered full processing.

All electronic accessions must have a ***Submission Information Package (SIP).*** The location for creation and storage of SIPs is H:\Departments\Archives\e-records-unprocessed .

The top level folder of each SIP *is required to* include

1. The accession number (ex. 2012-023)
2. A descriptive title for easier browsing. Make this short if possible to avoid file name issues (ex. "ChancOff" instead of "Office of the Chancellor").

Each SIP *is also required to* include the following sub-folders as components:

- **Originals:** Accessioned materials should be initially deposited in this folder. Once deposited, the folder should be made read-only to prevent inadvertent alterations to the data and files within.

- **Working Copies:** Copies of the accessioned files—all arrangement, renaming, normalization, and weeding should take place in this folder. (For ease of use, this document will clearly indicate processes that are enacted upon the working copy, and processes enacted upon the originals.)

- **Metadata:** Any metadata files created as a part of the processes described below should be placed in this folder.

All of these processes should optimally be performed on a "clean" computer with up-to-date antivirus software and definitions, which is used only for processing electronic records. As of February 2016, Library Systems maintains such a computer, but asks that it be used for only high-risk accessions because of resource limitation. For the purposes of this document, a **high risk accession is any accession of material from a network or hard-drive that is not actively protected by firewalls and virus-scanning software, or any such material with no indication of its original provenance.** Examples of such high-risk accessions include hard drives or portable media collected from external donors, or materials sent by email or a cloud storage platform.

For preservation reasons, electronic records received on physical media (flash drives, floppy disks, etc.) **should be moved to network storage as soon as possible**. Metadata collected will become part of a database for preservation and access for staff as well as for user access. As of June 2016, retaining metadata in XML format is preferred for eventual migration to a trusted digital repository. *These tools should be used on the original records.*

1. Scan for viruses using the software on the "clean" computer as appropriate. If a virus/malware is found, consult with Library Systems before moving forward.

2. Prepare records for ingest from original media onto H: drive. This is the first step for SIP creation. **Tool needed: Exactly** or **Data Accessioner.**
   a. Use **Data Accessioner** for most collections to create an XML PREMIS metadata file.
   b. Use **Exactly** for large (> 1 GB) collections, or for collections on which Data Accessioner consistently freezes. This program will create a "bag" for records to establish and maintain fixity at the start and end points of the transfer.
3. Add initial collection-level metadata. Regardless of which tool is being used, the following fields should be completed for bundling with the SIP:
   a. **Creator**: Name of Transferring Office or Individual.
   b. **Date**: Approximate Date Range of Materials.
   c. **Description**: Short description of the materials. This may or may not track your description in your accession report. **If you are transferring materials on physical media, indicate any labels/notes in this field.**
   d. **Title:** A formal title of the materials to be transferred. This is especially useful for transferring published DVD content.
   e. **Identifier:** The accession number of the materials.
   f. **Source (physical media only):** If electronic records are separated from physical folders, indicate the folder title here. Place a "Separated materials" form in the original folder.
4. Complete the transfer to a folder labeled "Originals" within your SIP folder. Both tools will automatically create metadata regarding the size of the accession, number of files, and date of transfer. Move these files to the "Metadata" folder in your SIP.

QC OPPORTUNITY: CONFIRM THAT THE FILES ARE IN A PROPERLY-NAMED FOLDER IN E-RECS-UNPROCESSED AND THAT THE FOLLOWING COMPONENTS, AT MINIMUM, ARE PRESENT:

- ORIGINALS DIRECTORY
- WORKING COPIES DIRECTORY
- METADATA DIRECTORY CONTAINING AN XML FILE OF THE FORM "20XX-YY.XML", OR 4 TEXT FILES COMPRISING A BAGIT MANIFEST

FOR COLLECTIONS TRANSFERRED WITH DATA ACCESSIONER, MAKE SURE THAT THE DC METADATA WAS APPLIED AT THE *ACCESSION* LEVEL. YOU WILL BE ABLE TO TELL THAT THIS IS THE CASE BY OPENING THE XML FILE; IF THE TAGS OF FORM <dc:[Dublin_core_field] xmlns:dc="http://purl.org/dc/elements/1.1/"> ARE AT THE TOP LEVEL FOLDER OF THE XML HIERARCHY, THEY HAVE BEEN APPLIED CORRECTLY. IF NOT, YOU CAN MOVE THE TAGS CONTAINED WITHIN THE <dcx:description xmlns:dcx="http://purl.org/dc/xml/"> WRAPPER DIRECTLY UNDER THE TOP LEVEL FOLDER OPENING TAG.

Appraisal—QA/Inventory/Fixity

This phase of the workflow is intended to identify potential problems with preservation/access, to create a preliminary inventory of the files and file formats in use, and to establish a baseline fixity check to protect files against bit rot. At this point, you are checking only for **technical** issues—for appraisal issues, see the next section.

1. Identify and validate file formats. This step will help determine if there are any misidentified files in the collection, which will need to be corrected during processing. **Tool needed: DROID.**
2. Create a "Comprehensive Breakdown" report from **DROID** for a bird's eye-level appraisal of the size of the collection, the dates of files contained within, and file formats. Save this file to your metadata folder as "DROID[Accession_Number].pdf".
3. Export the DROID data to a CSV file, also named "DROID[Accession_Number].csv. This file serves as a preliminary inventory and will allow sorting/filtering for misidentified files, files with more than one identification, etc.

QC OPPORTUNITY: THE DROID CSV FILE CONTAINS TWO FIELDS WHICH CAN BE FILTERED TO IDENTIFY FILE FORMAT PROBLEMS:

- EXTENSION_MISMATCH: FILTER FOR "EQUALS TRUE". THESE ARE USUALLY SIMPLE FILE EXTENSION FIXES.
- FORMAT_COUNT: FILTER FOR "DOES NOT EQUAL 1". THIS USUALLY SUGGESTS A CORRUPT OR OTHERWISE UNREADABLE FILE, ONE THAT IS A CANDIDATE FOR DELETION.

WHEN CHANGES ARE MADE TO FILES AS A RESULT OF THE DROID RESULTS, THEY SHOULD BE DOCUMENTED IN A TEXT FILE OR SPREADSHEET IN THE METADATA FOLDER. RENAMER ALLOWS YOU TO AUTOMATICALLY CREATE THIS LIST, WHICH SHOULD BE CHECKED BY THE SUPERVISOR.

4. Run a file fixity baseline. This allows future changes in checksums to be identified for restoring from backup. **Tool needed: Fixity.** (See also the Fixity workflow.)
5. Create a copy of all files and folders from your "Originals" directory to the top level of your Accession Directory. Rename this folder "Working Copies".
6. Set the "Originals" directory as Read-Only. To do this, Right click the folder, select "Properties", and check the "Read Only" box. If the box is filled in with a solid square, the folder is not read-only—you need to click until you get an actual check mark.

QC OPPORTUNITY: OPEN PROPERTIES AND CONFIRM THAT THE ORIGINALS ARE SET TO READ-ONLY. AS NOTED IN STEP 6 ABOVE, THE "READ-ONLY" BOX FOR THE TOP-LEVEL FOLDER SHOULD HAVE A CHECK MARK; A BLUE SQUARE MEANS THAT SOME, BUT NOT ALL, FILES HAVE BEEN SET READ ONLY .

7. Move all metadata files created to the "Metadata" folder in your accession directory.
8. Update the Locator with information about the files, particularly for files that have been moved from physical media. For file size/counts, only count the size of the Originals folder for now (in MB). Location should be set to "LAN" and Status to "MIN", unless further processing the records at this time.

QC OPPORTUNITY: ENSURE THAT ELECTRONIC ACCESSIONS HAVE THEIR SIZE AND NUMBER ACCURATELY REPRESENTED IN THE LOCATOR.

9. If the archives maintains custody of the transfer media, keep the original media as a backup copy for as long as practicable. However, because of the unstable nature of CDs. DVDs, and other physical media, priority should be to transfer records to the H drive.

Appraisal—PII/Other Qualitative

These steps, and the ones following, should be taken on the working copies. However, depending on the accession, it may be useful or necessary to weed originals based on work taken during this phase.

This phase is analogous to reviewing paper records for non-records, non-archival records or records with confidential information that needs to be restricted. However, the nature of electronic records means that certain steps of this process can be automated, as described below.

1. Search for pattern-based PII, such as Social Security Numbers, Credit Card Numbers, or certain key words (e.g. "Grades", "Student", or "Personnel"). Flag or delete files/folders. **Tool Used: Bulk Extractor.**

QC OPPORTUNITY: REVIEW THE "PII.TXT" AND "CCN.TXT" FILES CREATED BY BULK EXTRACTOR AND ENSURE THAT FILES GENUINELY CONTAINING SOCIAL SECURITY NUMBERS OR CREDIT CARD NUMBERS HAVE BEEN WEEDED OR RESTRICTED. MANY FILE TYPES WILL CONTAIN LOTS OF FALSE POSITIVES, SO IN MOST CASES A QUICK SCAN THROUGH THE FILE WILL SUFFICE.

2. Search for exact duplicates of files within the SIP. In general this step only needs to be completed for complex collections with numerous files/folders. Examine the duplicate sets and delete any exact or functional duplicates. **Tool Used: DupeGuru.**
3. Conduct a qualitative review for information protected by FERPA, HIPAA, or UWM's Personnel File policy. As with paper records, it is not necessary to examine every file, but every folder in the accession should be looked at. Be particularly aware of poorly-named spreadsheets in academic collections, which have in the past contained grades and other student information. Flag or delete folders.
4. If any of the records you have identified as including restricted information are in fact archival, add "-RESTRICTED" to the end of their folder names. These folders will be copied with the rest into the E-Records_Preservation Masters folder but should not be moved to the E-Records_Access Copies folder.

QC OPPORTUNITY: MAKE SURE STEP 4 HAS BEEN DONE. MOST OF THE TIME THIS WILL BE ON "USUAL SUSPECTS" FOLDERS SUCH AS EXECUTIVE COMMITTEE MINUTES, PERSONNEL-RELATED FOLDERS, ETC.

Arrangement

The major difference between digital records arrangement and traditional arrangement is that arrangement in the digital world is largely representational. The 'folder' and 'file' system is symbolic only; the data of the digital objects themselves are not organized this way in the hard disk or other storage medium. Digital materials can be represented through multiple arrangements and files can even be re-organized through manipulation of the metadata and through searching and sorting. Because of the searchability of digital records, original order is not as critical to digital materials arrangement as it is to paper records.

1. Arrange folders in usable and logical order according to archival arrangement best practices. **Tool used: Any file explorer, but one with 2 windows (e.g. FreeCommander) is preferable.** Some hints for arranging electronic folders in particular:
    a. It is generally not necessary to open every, or even most, files in an electronic records accession. However, you may want to open a sample to ensure that records are readable and archival in nature. The File previewer in **FreeCommander** may help with this for certain file types (PDFs, image files, AV files, and some Office documents).
    b. Electronic Folder titles, more even than paper folder titles, tend to have inconsistent folder names for documents in the same series. Create a parent folder for these with a standardized name and move the related folders within the parent.
    c. Electronic Folders may contain the date range of their files in the title, but do not have to. Use the system-provided date created or date modified (whichever appears more accurate) to provide this information. If both date created and date modified have been apparently altered for a significant number of the files, use context clues in the text of the documents themselves to approximate a date.
    d. Where possible, folder names should reflect the intended unittitle in the EAD. If a folder contains a subset of a larger series, or only contains technical files (e.g. to support an HTML page), it should not get its own component and therefore does not need a name change.
2. Sanitize file names to remove forbidden characters (!@#$%&*/) and fix file extension issues. **Tool Used: ReNamer**
3. Sanitize and/or standardize folder names as necessary. **Tool Used: ReNamer**

QC OPPORTUNITY: INSPECT THE ARRANGEMENT WORK MOSTLY AS YOU WOULD ARRANGEMENT OF PAPER RECORDS. A FEW KEY DIFFERENCES:

- IF RECORDS ARE ARRANGED IN SERIES, FOLDERS WITH THOSE SERIES' TITLES SHOULD BE JUST BELOW THE COLLECTION FOLDER, AND SHOULD CONTAIN THE RECORDS WITHIN EACH. (SEE THE CHANCELLOR'S FILES (H:\DEPARTMENTS\ARCHIVES\E-RECORDS_PRESERVATION MASTERS\UWM AC\UWM. OFFICE OF THE CHANCELLOR (UWM AC 046)) FOR AN EXAMPLE OF WHAT THIS LOOKS LIKE.)
- FOLDERS THAT ARE IN PLACE TO MAINTAIN HIERARCHY SHOULD NOT THEMSELVES CONTAIN FILES. FOR EXAMPLE, IF THERE IS A FOLDER FOR MEETING MINUTES, AND THERE ARE FOLDERS FOR EACH YEAR OF MINUTES, THERE SHOULD NOT BE ANY FILES IN THE MEETING MINUTES FOLDER. MOVE THEM TO EXISTING SUBFOLDERS OR CREATE A "GENERAL" SUBFOLDER FOR MISCELLANEOUS FILES.
- PURELY "TECHNICAL" FOLDERS (E.G. A FOLDER WITHIN AN EVENT FILE FOR IMAGES ETC.) DO NOT NEED TO BE DESCRIBED IN THE FINDING AID.

4. Once arrangement work is completed, the records are ready to move to their permanent homes. Depending on the file format, this step can play out one of three ways (See the Preferred Formats for Electronic Records document):
    a. **If the files are in an *active* proprietary or compressed format**: Move the working copies folder to e-records_access copies. If these are the first e-records in a given collection, rename the master folder with the name and call number of the collection;

otherwise, arrange within existing collection as is appropriate. Create copies in open preservation formats (see below) in e-records_preservation masters. Move remainder of SIP (including originals) to H:\departments\archives\e-records workspace\processed raw accessions.

    b. **If the files are already in an open preservation format**: Create access copies in more user-friendly formats as necessary in e-records_access copies. If these are the first e-records in a given collection, rename the master folder with the name and call number of the collection; otherwise, arrange within existing collection as is appropriate. Move the working copies folder to e-records_preservation masters and rename as needed.

    c. **If the files are in an obsolete format**: Create access copies in user-friendly, active formats in e-records_access copies. Create copies in open preservation formats (see below) in e-records preservation masters. Move remainder of SIP (including originals) to H:\departments\archives\e-records workspace\processed raw accessions.

5. Once you have moved any derived copies to their appropriate folder, **Run Fixity** on any preservation masters so created, following the Fixity Workflow for new collections.

Description

Description of electronic records consists of file-level description (automated) and traditional archival description (manual). Because the nature of migration-based preservation necessarily alters file-level metadata, ***perform these steps on the untransformed working copies following archival arrangement.***

1. Extract descriptive and technical metadata from the files and save to a metadata folder within the collection folder in e-records_preservation masters as [DateProcessed]_Preservation.csv. **Tool Used: EXIFTool.**
2. Save a copy of your newly-created Preservation CSV file in a metadata folder in the relevant e-records_access copies folder as [DateProcessed]_access.xlsx.
3. Delete non-descriptive fields from your new access spreadsheet. You should be left with some combination of the following required (R) and optional (O) fields:
   a. Filename (R)
   b. Path (R)
   c. Date Created and/or Date Modified (R, but if one of these fields is obviously altered, keep the one that most closely reflect the actual date of the document)
   d. File Format/MIMEType (R)
   e. File Size (R)
   f. Title (O)
   g. Author (O)
   h. Subject/Keywords/Description (O, may be spread across multiple fields)
   i. Page Count (O, documents only)
   j. Duration (O, audio/video)
   k. Image Dimensions (O, images)
4. Update the EAD and MARC records for the collection. See the department manuals [on EAD](#) and [MARC](#) for guidance on describing e-records in finding aid and catalog records.

Preservation

Preservation is largely concerned with the final disposition of the originals, which should be kept as long as practicable for further production of derivatives, and with disposition of the preservation masters, which serve as the Archival Information Package.

The goal for preservation is to provide an environment where files can be accessed and/or reconstructed at maximum levels of authenticity for the foreseeable future. In most cases, this will involve migration or normalization of files to preservation formats and storing those files in appropriate preservation environments. Ideally, this environment will take the form of a trusted digital repository system, which will automatically monitor electronic records for bit rot and obsolescence and continually update the preservation environment according to current best practices. Failing that, normalization and file monitoring and storage on distributed computing space, including the H: drive, is an acceptable medium-term solution. As our storage needs increase, we will need to explore additional storage options.

1. Normalize standard file formats with **XENA.** This tool from the National Archives of Australia will automatically XML-encapsulate many, but not all, file formats typically received in the Archives. Save these files in their own folder in the E-records _Preservation Masters collection folder, labeled "XENA Files".
2. Export encapsulated files using **XENA Viewer** to re-create the file structure of the collection with normalized files.
3. Because XENA does not normalize all formats, and in some cases does not normalize to our preferred format, It may be necessary at this point to use other tools to create preservation and access copies of files. See "Migration Policy for Electronic Records" and "Preferred File Formats for Archival Electronic Records". Below is a table of major format types, target formats, and tools used for conversion.

Format Type	Target format	Conversion Tool
Text Documents	Open Document Text (ODT)	XENA (LibreOffice)
Vector Image	Scalable Vector Graphics (SVG)	Adobe Illustrator
Raster Image	Tagged Image File Format (TIFF)	XENA (ImageMagick)
Audio Files	Broadcast Wave (WAV)	XENA (FLAC Encoder)
Video Files	MPEG-4, h.265 Codec (.mp4)	Handbrake (or FFMPEG?)
Email	MBOX	IMAP Clients?
Presentation Files	Open Document Presentation (ODP)	XENA (LibreOffice)

Final Cleanup

1. If not already done, move the SIP folder to the processed raw accessions folder in the e-records workspace. The SIP should now consist only of the Originals folder, the Metadata folder, and the Accession Info folder.
2. **Run Fix**ity on the originals in their new location to reflect their new paths and checksums. SIPs should be retained for as long as is feasible (with respect to storage needs, software obsolescence, etc.) to allow for future migration to more sustainable file formats, as needed. Re-run checksums on the original files at least once every six months to ensure that they retain fixity; if checksums have been altered, restore the affected file from a backup or designate a preservation or access copy as the copy of record.
3. **Run Fixity** on any preservation copies generated to create checksums for these files. Set the period for checking these files at one time per month. If these checksums have been altered, contact libauto@uwm.edu to restore the affected file from a backup or create another preservation copy from the originals or access copies (if possible). Access copies do not require checksums unless they are the only other copy of the record available (not recommended).
4. Update the Locator Database. Create entries for both Preservation and Access Copies (make note of each in the COLLECTION field). Access copies should have TYPE as "OTH" to distinguish them from the copy of record on the LAN. SIZE AFTER (MEGABYTES) should be entered for each, but the only the Preservation Master should be counted in end-of-year statistics. For adding to collections with existing electronic records, update the total number of files and file size in one record, even if adding a new accession to the collection.

QC OPPORTUNITY: MAKE SURE THERE ARE COPIES IN BOTH ACCESS COPIES AND PRESERVATION MASTERS AND THAT BOTH HAVE BEEN APPROPRIATELY ENTERED INTO THE LOCATOR WITH FILE NUMBER AND SIZE INFORMATION.

TYPE	COLLECTION	ITEMS	STATUS	ROOM	SIZE AFTER (MEGABYTES)
OTH	UWM. Center for International Education. [Access copies]	594 digital text files	MAIN	LAN	15.7
UWM AC	UWM. Center for International Education. [Preservation masters]	594 digital text files	MAIN	LAN	15.7

CALL NUMBER	COLLECTION	ITEMS	STATUS	ROOM	SIZE AFTER (MEGABYTES)
UWM Mss 139	American Academy of Allergy, Asthma, and Immunology (AAAAI). [Preservation masters]	982 digital text files	MAIN	LAN	700

CALL NUMBER	COLLECTION	ITEMS	STATUS	ROOM	SIZE AFTER (MEGABYTES)
UWM Mss 139	American Academy of Allergy, Asthma, and Immunology (AAAAI). [Preservation masters]	115 digital audio files	MAIN	LAN	13721.6

5. Confirm that the extent listed in the locator for the *preservation copy* is the same as the extent noted in the Finding Aid. Make sure you are not inadvertently counting metadata files in the extent. Adjust any incorrect figures accordingly.

6. Confirm that you have added all components of an electronic records addition to the finding aid:
   a. Extent (updated)
   b. Other Finding Aid note (to indicate existence of access spreadsheet)
   c. Physical Characteristics and Technical Requirements note (File Formats)
   d. Preservation Information (if needed)
   e. Access Restrictions (boilerplate language on electronic records)
   f. Contents list additions/changes

7. Notify the Collections Manager of any MARC record changes (Usually: Extent and Access Restrictions, plus removing accession notes).

Maintenance

1. Re-evaluate the continued usability of file formats in the collection at least **once every three years**. If a particular file format or version of a file format is likely to become obsolete or otherwise unreadable soon, normalize it **using XENA** or another conversion tool.
2. Re-evaluate the tools and procedures used in this document **at least once a year**. To the extent possible, this workflow should reflect up-to-date information, best practices, and technology for preserving digital records. As a minimum, make sure you are using the most up-to-date stable version of the tools listed here; if a tool is not frequently updated, consider finding another tool with similar functionality.

APPENDIX A: List of Tools Used

This list of tools, arranged by function and cited in the above workflow is up to date as of **September 12, 2016.** Although most of these tools can be run from network storage, a few will require downloading onto the processing computer, so this list includes the project page for each where copies can be downloaded. The responsible person for updating this workflow should consult tool registries such as COPTR (http://coptr.digipres.org/Main_Page) for the most recent and effective tools.

Accessioning

- **Data Accessioner**: http://dataaccessioner.org/da-version-notes.htm
- **Exactly** and **Fixity:** https://www.avpreserve.com/avpsresources/tools/

Appraisal

- **DROID:** http://www.nationalarchives.gov.uk/information-management/manage-information/preserving-digital-records/droid/
- **Bulk Extractor:** https://github.com/simsong/bulk_extractor/wiki/Downloads

Arrangement

- **FreeCommander**: http://freecommander.com/en/downloads/
- **DupeGuru** https://www.hardcoded.net/dupeguru/ **NO LONGER SUPPORTED FOR WINDOWS—MAY NEED SUBSTITUTE**
- **ReNamer**: http://www.den4b.com/?x=downloads

Description

- **EXIFTool**: http://www.sno.phy.queensu.ca/~phil/exiftool/
- **EXIFTool GUI add-on**: http://u88.n24.queensu.ca/~bogdan/

Preservation

- **XENA (XML Electronic Normalizing for Archives)**: http://xena.sourceforge.net/

APPENDIX B: Sample Folder Configurations

This workflow is based on the Open Archival Information Systems reference model (ISO 14721:2012), which organizes information in "packages" based on their role. The Submission Information Package (SIP), Archival Information Package (AIP), and Dissemination Information Package (DIP) each have different requirements and thus different folder structures. The below are generic examples of what folder configurations for each type of information package should look like, with key metadata and other files indicated where appropriate. Each folder/file has an (M), (R), or (O), to indicate if they are mandatory, recommended, or optional, respectively.

Submission Information Package (Data Accessioner Ingest)

- 20XX-YYDeptShortName
  - Originals **M**
  - Working Copies **M**
  - Processing Space **O**
  - Preservation Masters **O**
  - Metadata **M**
    - 20XX-YY.xml **M**
    - 20XX-YYDROID.csv **R**
    - 20XX-YYDROIDReport.pdf **R**
    - **[**Any Separation or other processing notes**]**
    - BE_Output **O**
      - Report.xml **M**
      - ccn.txt **O**
      - pii.txt **O**
      - [Other feature files as appropriate]

Submission Information Package (Exactly Ingest)

- 20XX-YYDeptShortName
  - Originals **M**
  - Working Copies **M**
  - Processing Space **O**
  - Preservation Masters **O**
  - Metadata **M**
    - Bag-info.txt **M**
    - Bagit.txt **M**
    - Manifest-md5.txt **M**
    - Tagmanifest-md5.txt **M**
    - 20XX-YYDROID.csv **R**
    - 20XX-YYDROIDReport.pdf **R**
    - **[**Any Separation or other processing notes**]**
    - BE_Output **O**

- Report.xml M
- ccn.txt **O**
- pii.txt **O**
- [Other feature files as appropriate]

Archival Information Package

- Collection Title (UWM AC/MSS XX)
  - Metadata **M**
    - [all relevant metadata from SIP] **R**
    - Preservation[date1].csv **M**
    - Preservation[date2].csv
    - Preservation.xlsx **R**
  - XENA Files **O**
    - [XENA Files, Flat folder structure] **O**
  - Normalized **R**
    - 1. Series 1 Title
      - Folder Title
      - Folder Title
      - Folder Title [RESTRICTED]
    - 2. Series 2 Title
      - Folder Title
      - Folder Title
    - 3. Etc.

Dissemination Information Package

- Collection Title (UWM AC/MSS XX)
  - Metadata **M**
    - Access.xlsx **M**
    - **[**Other useful public-facing information not covered in EAD]
  - 1. Series 1 Title
    - Folder Title
    - Folder Title
  - 2. Series 2 Title
    - Folder Title
    - Folder Title
  - 3. Etc.