Getting to Know FRED

Introducing workflows for born-digital content

Alice Prael
John F. Kennedy Presidential Library
@AlicePrael

Amy Wickner
University of Maryland Libraries
@amelish

MID-ATLANTIC REGIONAL ARCHIVES CONFERENCE
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born-digital at UMD

Why develop a born-digital program? Why now?

- Born-digital acquisitions
- Campus e-records and data management
- Legacy media in collections
- New digital repository system (Fedora 4)
- New archival information management system (ArchivesSpace)

born-digital working group

CHARGE: Identify opportunities, challenges, and concrete steps forward for a program to process and maintain born-digital collections.

OUTCOME: Defined goals, staff needs, and expectations for a Special Collections born-digital records program

TIMELINE (2012 - 13 academic year)

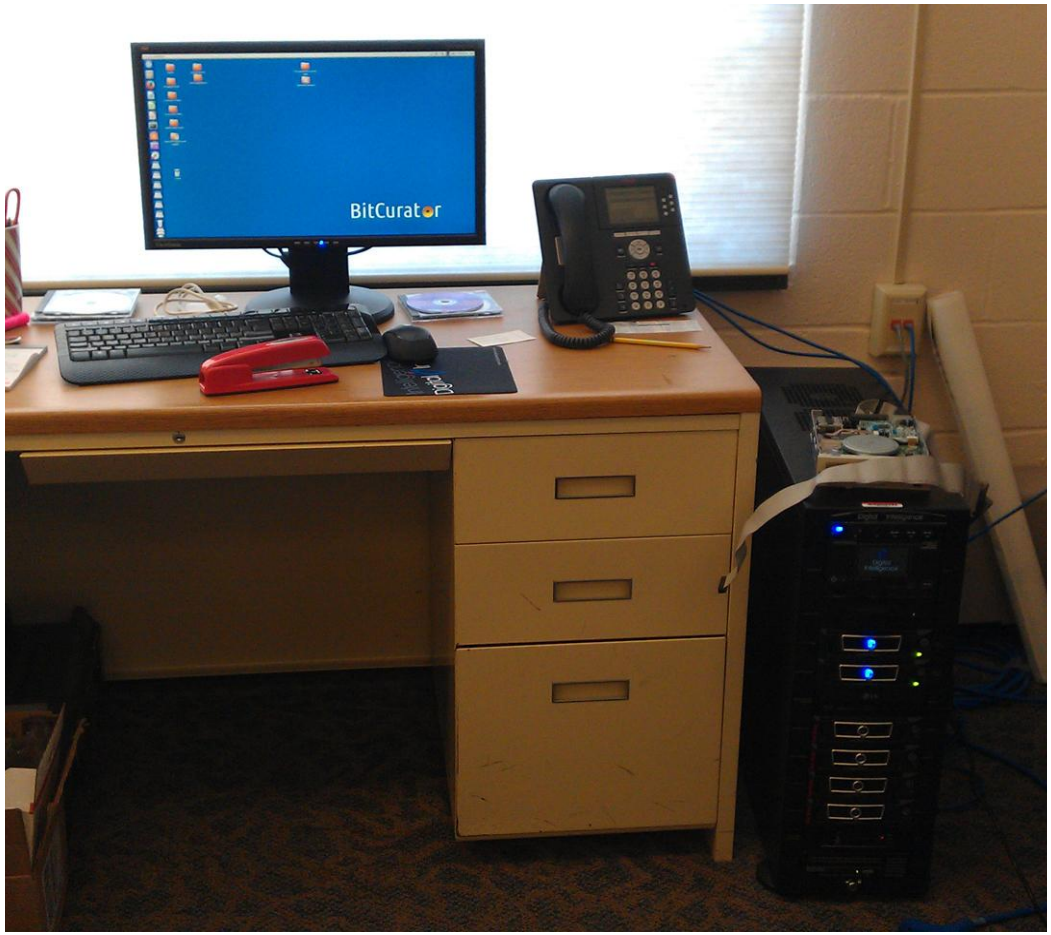
09/12 BDWG formed by UMD Libraries & Maryland Institute for Technology in the Humanities (MITH)

10/12 Processed papers of hypertext & e-lit pioneer Bill Bly

01/13 Established subgroups on Tools, Policy/Procedures, Metadata, Administration

02/13 Metadata subgroup dissolved

03/13 FRED purchased, configured



MEET FRED: a workstation for digital forensics imaging and analysis

Alice Prael *@AlicePrael* · Amy Wickner *@amelish*

FRED details

DRIVES

- Windows 7 Ultimate (64 bit) / Win98 DOS dual partition
- Ubuntu Linux 14.04.2

SOFTWARE

- FTK Imager 3.3.0 (Windows)
- BitCurator 1.2.1 (Linux)

EXTERNAL HARDWARE

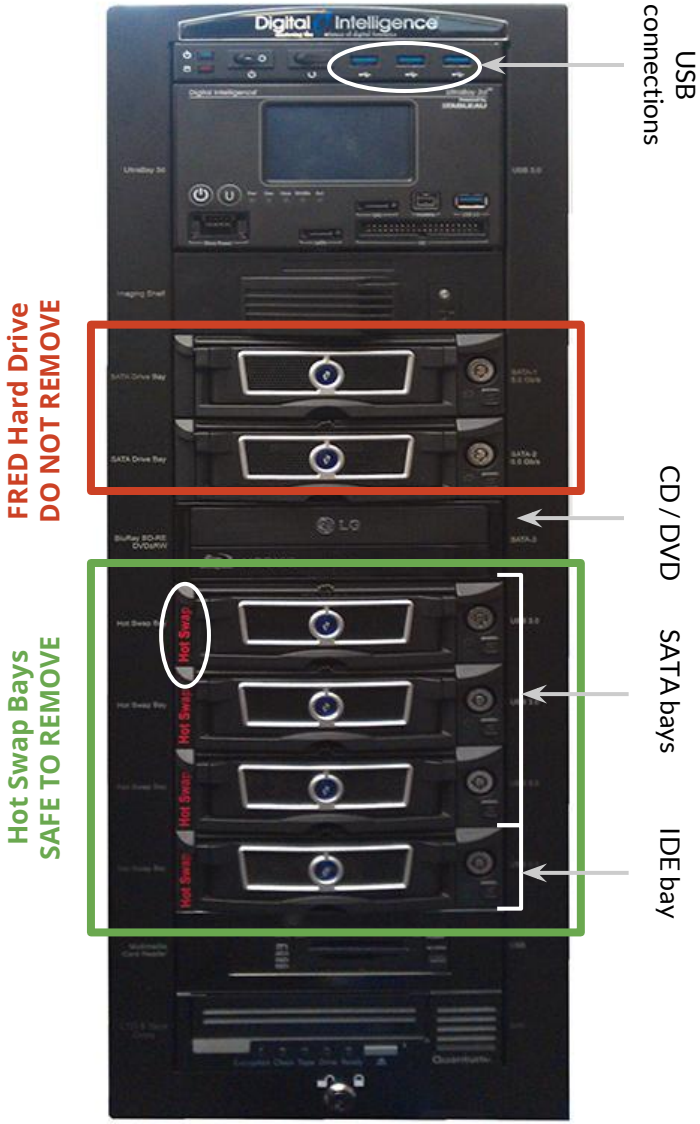
- USB-connected 3.5” floppy disk drive
- TEAC 5.25” floppy disk drive
- FC5025 5.25” floppy disk drive controller card with USB connection
- SuperCardPro controller card
- Iomega zip drive

but wait: there’s more...

FRED details

BUILT-IN HARDWARE

- Tower connects to USB-capable drives, optical media, bare hard drives



why FRED?

High-profile purchase

Clear investment in developing a born-digital program

Future plans to develop dedicated digital curation workstation

- PC workstation
- Ubuntu Linux running BitCurator

our project

Develop documentation and workflows for imaging and preserving born-digital content from physical storage media using FRED

Collaboration between Special Collections and University Archives (SCUA) and Digital Systems and Stewardship (DSS)

Sept. 2014 - Aug. 2015

WORK PRODUCTS

Draft workflow for capturing and preserving born-digital content

How to FRED: A Beginner's Guide

Processing project ideas

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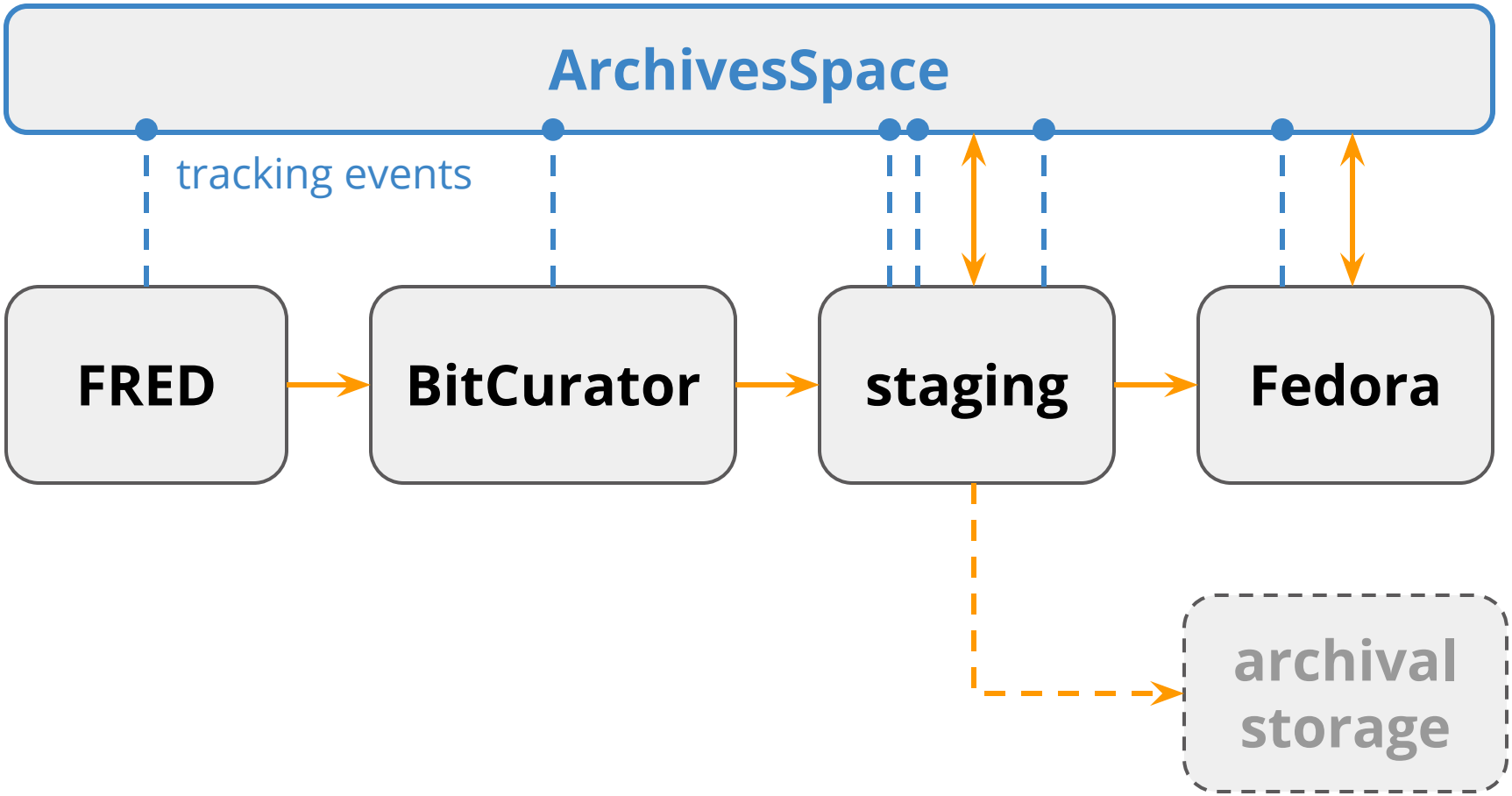
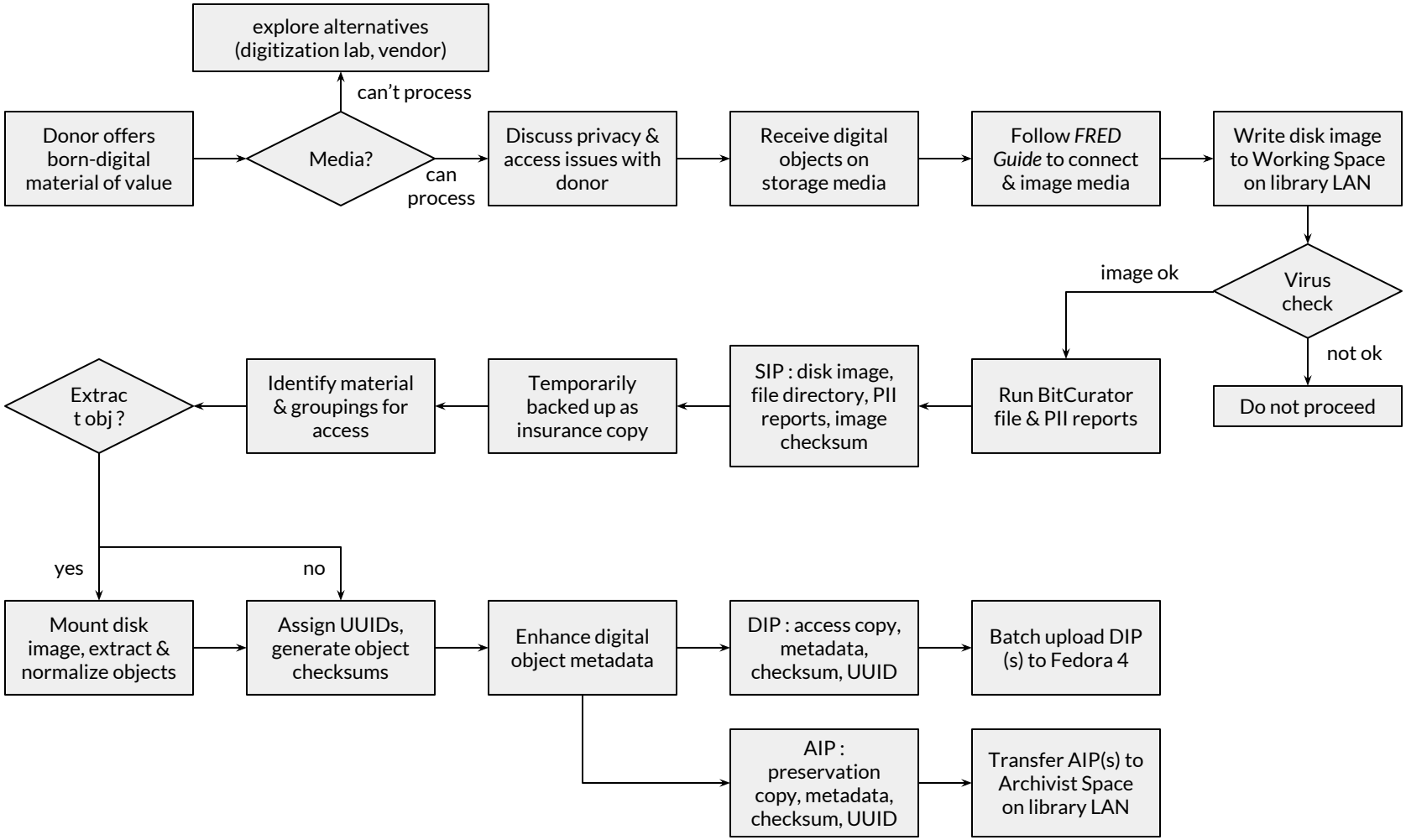


WORKFLOW FOR BORN-DIGITAL MATERIAL: early concept



WORKFLOW FOR BORN-DIGITAL MATERIAL: overview

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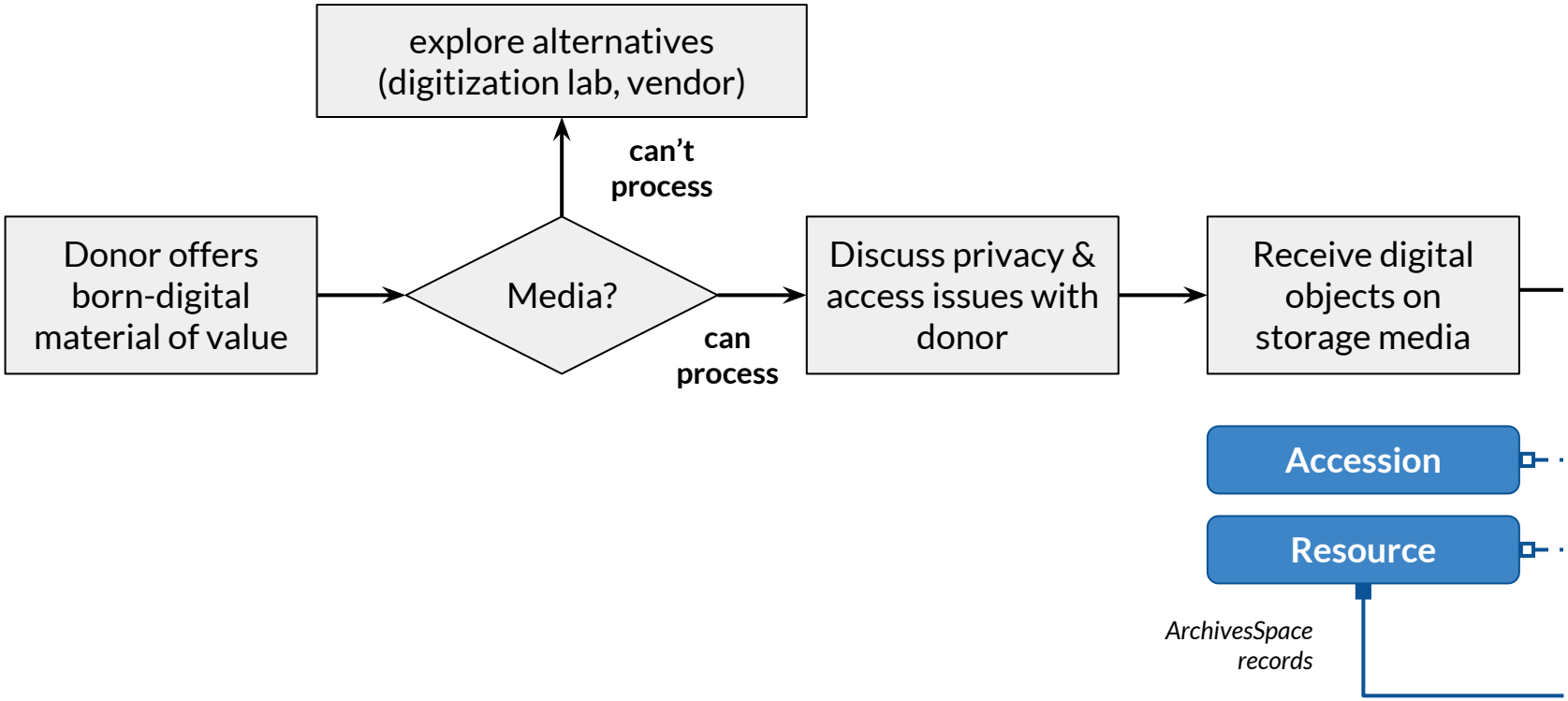

WORKFLOW FOR BORN-DIGITAL MATERIAL: detail

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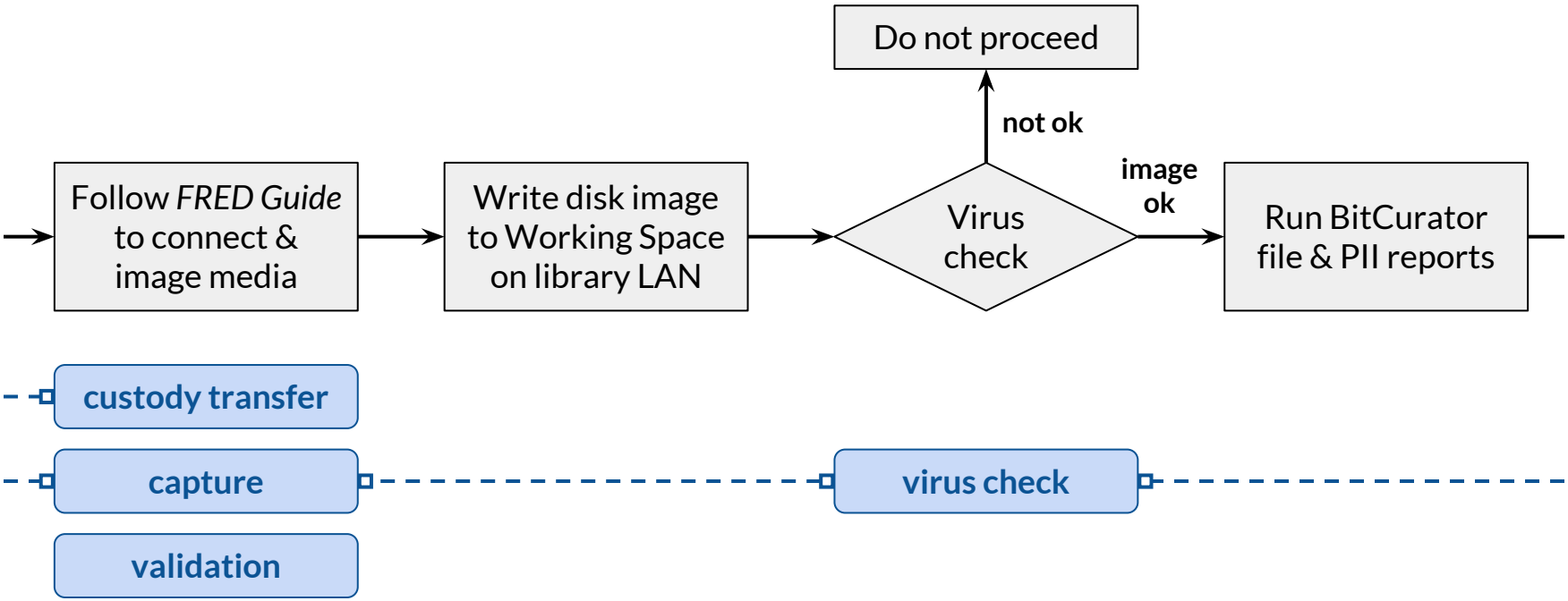
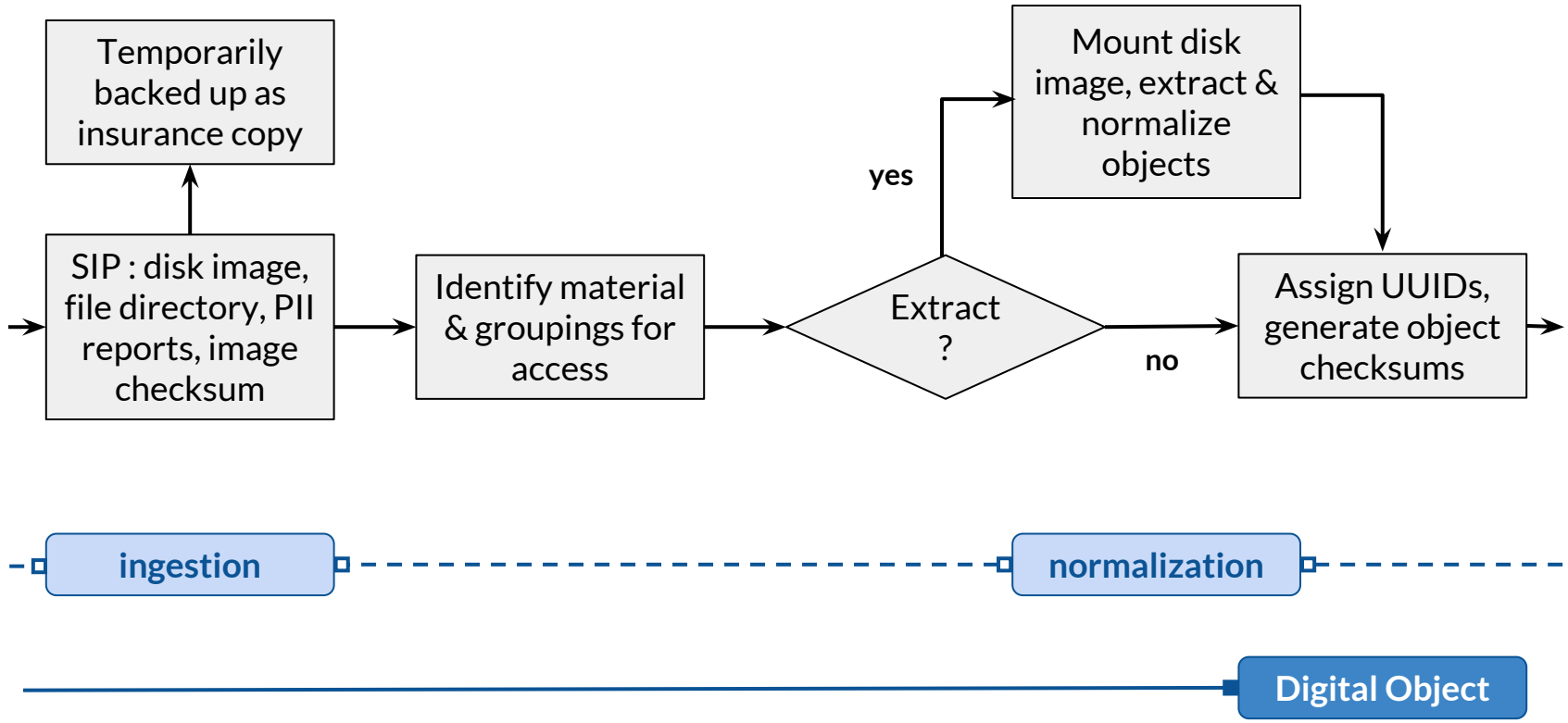


ArchivesSpace events

WORKFLOW FOR BORN-DIGITAL MATERIAL: detail



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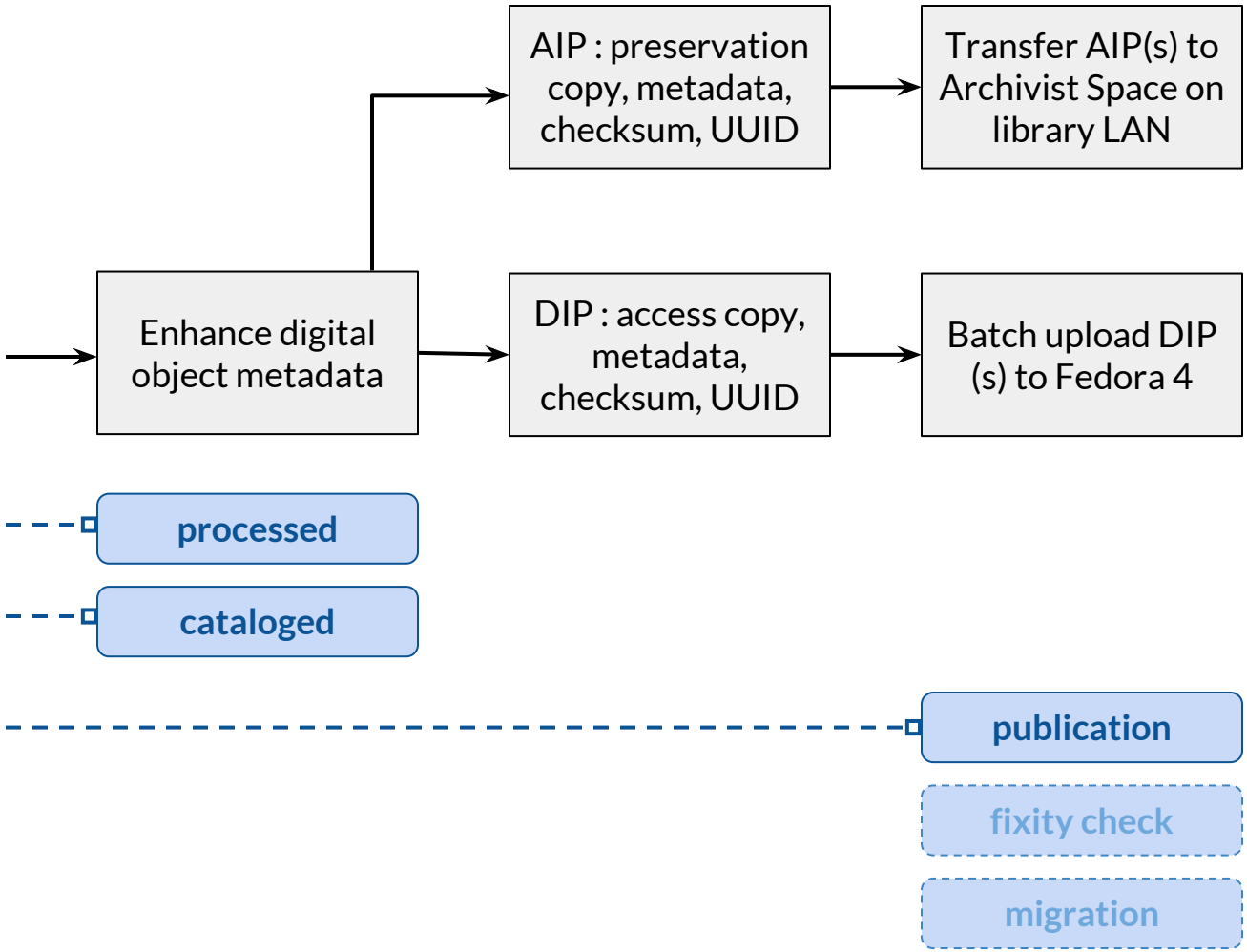


WORKFLOW FOR BORN-DIGITAL MATERIAL: detail

How To FRED

Contents

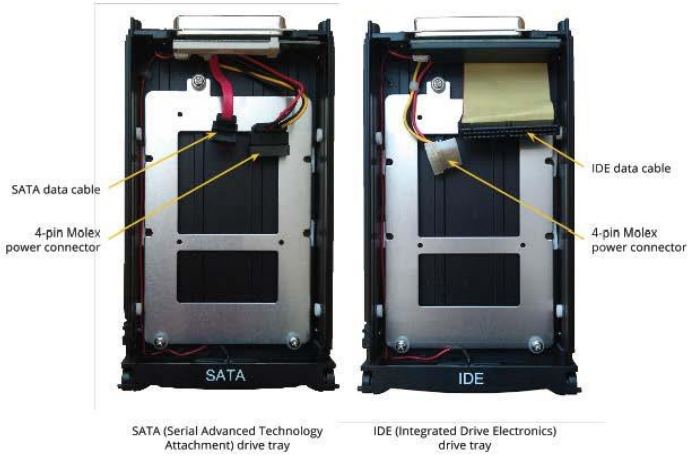
1. How to Update Bitcurator
2. How to Connect Media
   a. 3 ½ inch floppy
   b. 5 ¼ inch floppy
   c. CD
   d. USB Flash Drive and USB connected external hard drive
   e. Internal hard drive
3. How to Create Disk Images
   a. FTK Imager in Windows
   b. Guymager in BitCurator
4. How to Map Shared Drive
   a. In Ubuntu
   b. In Windows
5. How to Run Bulk Extractor
6. How to Run BitCurator Reports
7. Mounting a Disk Image
   a. in BitCurator
   b. in FTK Imager

How to Update BitCurator

1. All items saved locally (on the Ubuntu side) will be deleted in the process of updating. Save all data on LAN or other network (we used umd.box for temporary storage during updates).
2. Download ISO installation from wiki.bitcurator.net. If this download fails, try the "Download Mirror."
3. Compare checksums for the original and downloaded image files. We used the program winMd5sum to create and compare checksums.
   3.1. Download and save the MD5 checksum from wiki.bitcurator.net (the most recent checksum will be directly below the BitCurator download). Open the file in a text editor to see the checksum alongside version information, e.g.:
   1dd19958b00a04a8c5f196d675b7e4ff BitCurator-1.2.1.iso
   3.2. Create a checksum for the downloaded copy of Bitcurator Installation ISO. Right click on the downloaded disk image and select **Send to > winMd5sSum**.
   3.3. Ensure that these checksums are the same by copying the checksum downloaded in step 3.1 and pasting it into the Compare field in winMd5Sum. Click **Calculate**.
4. Create a BitCurator installation disk by burn the downloaded disk image to a blank DVD.
   4.1. Insert a blank disk. Cancel all AutoPlay options and DO NOT FORMAT.
   4.2. With a blank disk in the drive, right click on the downloaded disk image and select **Burn disc image**.
   4.3. Check the box next to **Verify disc after burning**, then click **Burn**.
   4.4. Refer to BurningIsoHowto in Ubuntu documentation for more information.
5. Insert disc into FRED and restart.

Each drive tray contains extra screws and a pair of tubular keys to lock and unlock the drive tray:

At the back of each tray are two connectors:



SATA (Serial Advanced Technology Attachment) drive tray

IDE (Integrated Drive Electronics) drive tray

HOW TO FRED: A BEGINNER'S GUIDE TO CONNECTING & IMAGING MEDIA

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processing project ideas

- hard drives v. floppy disks
- e-records (campus & external)
- digital photo
- MARAC records!
- social science data collections

Format clues from born-digital inventory

beyond imaging

Recruit curators to communicate with donors about what we can do, will do, and are doing.

Extend workflow to accommodate born-digital material that isn't transferred by imaging

- e-records
- email
- social media

Rethinking storage

- Dedicated born-digital space on library LAN
- Academic Preservation Trust

Looking ahead to ACCESS

lessons learned

Keep the lines open to IT

Be involved in the inventory process

Remember: we're all facing the same roadblocks

Let people know what you're working on

Recruit allies

Balance conceptual thinking with hands-on tinkering

IN A WORD...

COMMUNICATE!