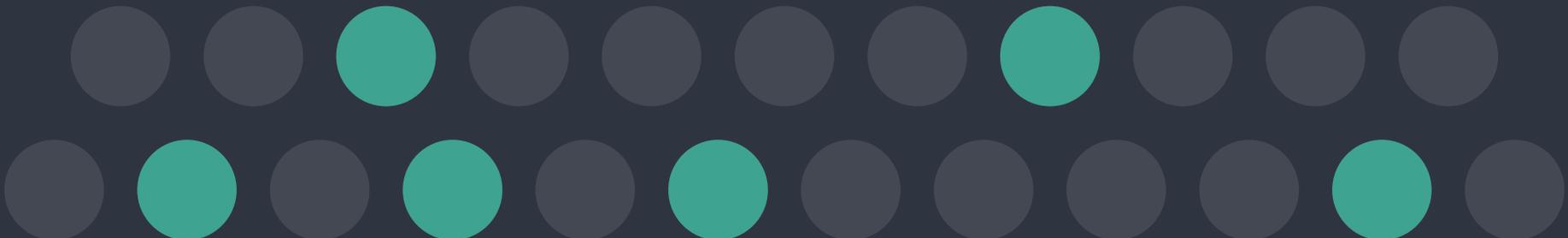


DIGITAL PRESERVATION OF FEATURE FILMS

Andrea Kalas



Principles

We spent 3 years developing and implementing a digital preservation infrastructure that is currently patent pending

Replication

Automated replication upon ingest

An exact bit for bit duplicate of EACH digital file.

All replicates must have the same checksum value

Asset Transparency

Moveable Library

*Policies set by content owners,
not by DAM developers.*

Data Integrity

Annual health check and repair at the file level

*A repeatable calculation, equivalent of a digital fingerprint
and comparison to a registered hash such as MD5 or SHA-1
ensures reportable data integrity*

Security

Unique policies per asset, per user

Each file can be set to have its own security policy.

Preservation only ends with storage



Validate & Standardize

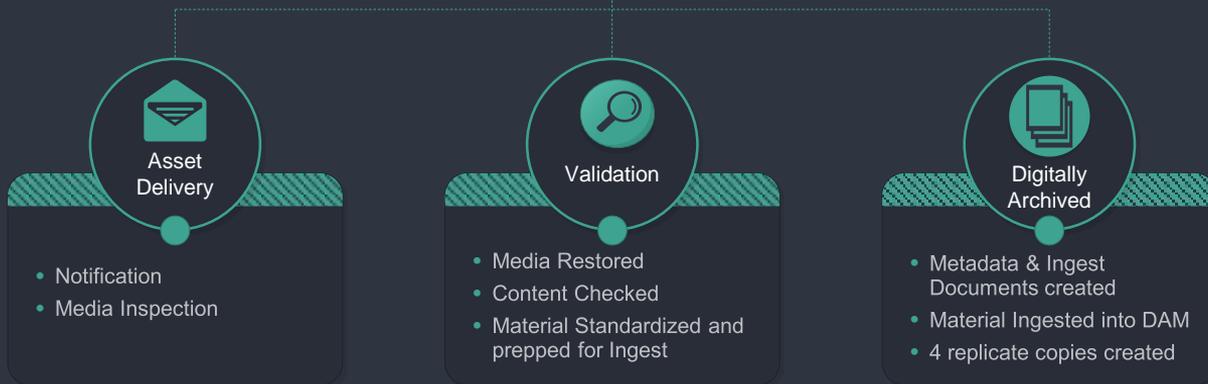
Every asset is validated prior to being ingested and archived.

Due to changing deliverable specs, some assets may be restructured prior to ingest.



Archive in Digital Management Platform

Each asset and frame goes through another set of validation as it's being ingested into the system.



Step 1: Validate & Restore Workflow



Check labels & documents

look for any difference while restoring and validating material

CHECK FORMAT

Check Media Format

Our spec takes LTOs as TAR per frame or LTFS. Each has a unique way of restoring.



Alert content owner
if errors are found

Step 2: Validate & Restore Workflow



PRORES,
AUDIO RAR,
FINAL MUSIC
SESSIONS

DPX, TIF
TAR, LTFS

DCDM, DCP

Prepped for complex
asset ingest

RAW SCANS

Specs for raw scans
are easily standardized

RESTORE

CHECK FORMAT

Restore Media

Time will vary, depending on media type.

Check Media Format

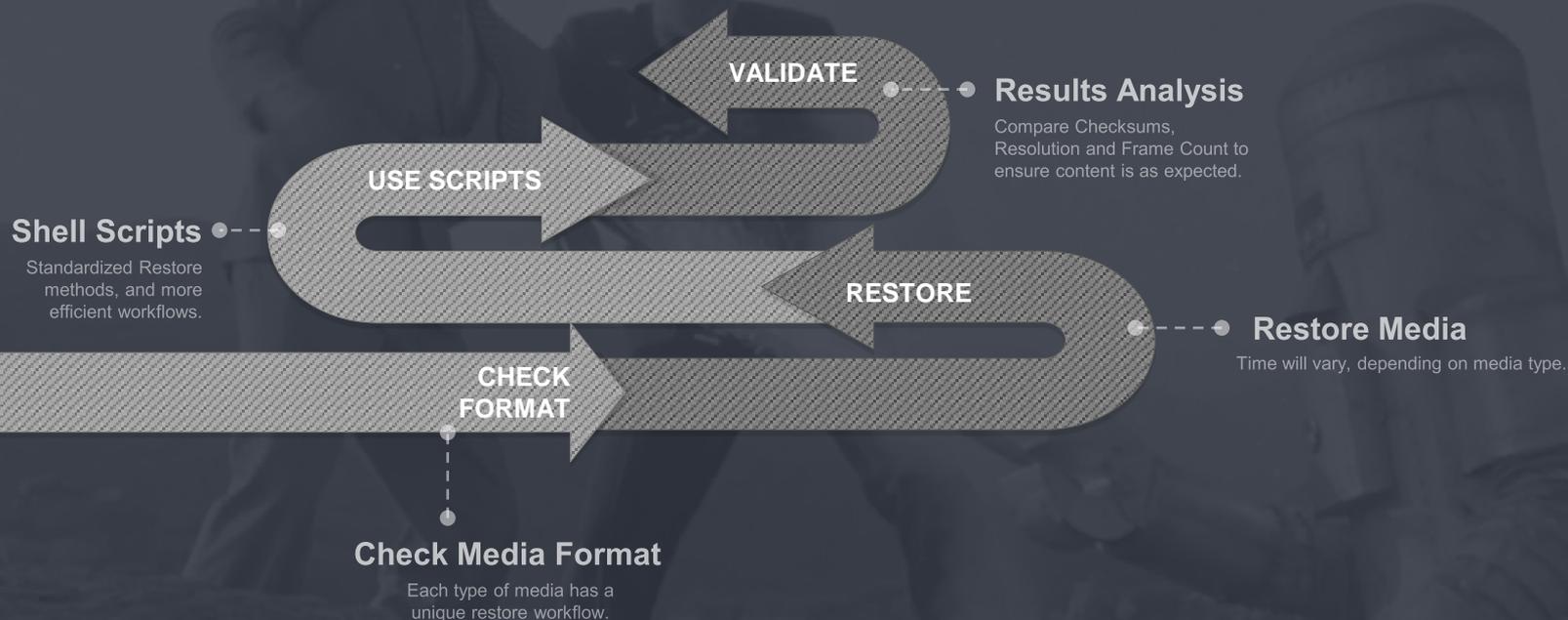
Each type of media has a
unique restore workflow.

Step 3 *Validate & Restore Workflow*

Shell scripts used to support Restore



Step 4: Validate & Restore Workflow



Step 5: Validate & Restore Workflow



Vendor Checksum

```
File Path : ~/Desktop/An_Angel_Comes_To_Brooklyn_r1_ppc.md5
An_Angel_Comes_To_Brooklyn_r1_ppc.md5
1 An_Angel_Comes_To_Brooklyn_r1/0805223.dpx |d67e1ba56164e3b8aa2e34b0d92615fd
2 An_Angel_Comes_To_Brooklyn_r1/0805224.dpx |e9a00f7e8f5cc6909ef4850dbb11c68
3 An_Angel_Comes_To_Brooklyn_r1/0805225.dpx |9d4046a7f35748062e30ba0a096506
4 An_Angel_Comes_To_Brooklyn_r1/0805226.dpx |36d5080144af5c2e0a50519bc139e0
5 An_Angel_Comes_To_Brooklyn_r1/0805227.dpx |cc88a52f32f261289e7e2b32b67971
6 An_Angel_Comes_To_Brooklyn_r1/0805228.dpx |03ba73f0a7ed9231ec3fcedf6cfd28c
7 An_Angel_Comes_To_Brooklyn_r1/0805229.dpx |1ef65c942ae415ba0bf50717bae51b
8 An_Angel_Comes_To_Brooklyn_r1/0805230.dpx |a2e9a2752301d03578081ac7ca98e
9 An_Angel_Comes_To_Brooklyn_r1/0805231.dpx |04881557aa52f208eb66f1749be4e4ce
10 An_Angel_Comes_To_Brooklyn_r1/0805232.dpx |47763c69aa8fe03f51420513f906f8b
11 An_Angel_Comes_To_Brooklyn_r1/0805233.dpx |03364c11169c106099717077c0db882
12 An_Angel_Comes_To_Brooklyn_r1/0805234.dpx |201f161008f313a754b41c3ac258a6f41
13 An_Angel_Comes_To_Brooklyn_r1/0805235.dpx |b50f2f0745ccc950931bcbc4d7186c8
14 An_Angel_Comes_To_Brooklyn_r1/0805236.dpx |4a0f6c50854305138a35c027a608f7
15 An_Angel_Comes_To_Brooklyn_r1/0805237.dpx |0a4176a02cace004f6165d64652fee
16 An_Angel_Comes_To_Brooklyn_r1/0805238.dpx |fee3a0d7e7ba0800394fd63a2d5ae
17 An_Angel_Comes_To_Brooklyn_r1/0805239.dpx |52a0280a679306f957aae2f261f8cc09
18 An_Angel_Comes_To_Brooklyn_r1/0805240.dpx |05f09430f65a995c24090a8237950c
19 An_Angel_Comes_To_Brooklyn_r1/0805241.dpx |0b8485f3d1317d7038f7719966f1a1a
20 An_Angel_Comes_To_Brooklyn_r1/0805242.dpx |677c238e5c1b3480e4041627a96d45
21 An_Angel_Comes_To_Brooklyn_r1/0805243.dpx |0c83991cc07296400103969f413156
22 An_Angel_Comes_To_Brooklyn_r1/0805244.dpx |100cc08320917933e90a3f5a517014
23 An_Angel_Comes_To_Brooklyn_r1/0805245.dpx |0c722a146f29e52f6a2698451e07e080
24 An_Angel_Comes_To_Brooklyn_r1/0805246.dpx |ad09807e080892a1a158c3c367009106
25 An_Angel_Comes_To_Brooklyn_r1/0805247.dpx |0987216331f46216f06d66f0af0e039
26 An_Angel_Comes_To_Brooklyn_r1/0805248.dpx |928f3d1cee08096a93574a7fcea07548
27 An_Angel_Comes_To_Brooklyn_r1/0805249.dpx |644c8c0df040306fbee975db40f9863
28 An_Angel_Comes_To_Brooklyn_r1/0805250.dpx |00580a62029c9a90a0974c9f1525061
29 An_Angel_Comes_To_Brooklyn_r1/0805251.dpx |f7109f49084a464575fca347151acc4
30 An_Angel_Comes_To_Brooklyn_r1/0805252.dpx |076504c3f21627604908064c0b70401
31 An_Angel_Comes_To_Brooklyn_r1/0805253.dpx |4e2c8109c2d576a50a8d8790be1e1
32 An_Angel_Comes_To_Brooklyn_r1/0805254.dpx |a326980cfff1092a11026e50b00125
33 An_Angel_Comes_To_Brooklyn_r1/0805255.dpx |26a6f000899ef1c0b3f185664dc133
34 An_Angel_Comes_To_Brooklyn_r1/0805256.dpx |9dc352137780e273bab1659dd0d83c9b
35 An_Angel_Comes_To_Brooklyn_r1/0805257.dpx |109da223a72e80df6a58e326f13a877
```



Our Checksum

```
File Path : ~/Desktop/An_Angel_Comes_To_Brooklyn_r1_T3.md5
An_Angel_Comes_To_Brooklyn_r1_T3.md5
1 An_Angel_Comes_To_Brooklyn_r1/0805223.dpx |d67e1ba56164e3b8aa2e34b0d92615fd
2 An_Angel_Comes_To_Brooklyn_r1/0805224.dpx |e9a00f7e8f5cc6909ef4850dbb11c68
3 An_Angel_Comes_To_Brooklyn_r1/0805225.dpx |9d4046a7f35748062e30ba0a096506
4 An_Angel_Comes_To_Brooklyn_r1/0805226.dpx |36d5080144af5c2e0a50519bc139e0
5 An_Angel_Comes_To_Brooklyn_r1/0805227.dpx |cc88a52f32f261289e7e2b32b67971
6 An_Angel_Comes_To_Brooklyn_r1/0805228.dpx |03ba73f0a7ed9231ec3fcedf6cfd28c
7 An_Angel_Comes_To_Brooklyn_r1/0805229.dpx |1ef65c942ae415ba0bf50717bae51b
8 An_Angel_Comes_To_Brooklyn_r1/0805230.dpx |a2e9a2752301d03578081ac7ca98e
9 An_Angel_Comes_To_Brooklyn_r1/0805231.dpx |04881557aa52f208eb66f1749be4e4ce
10 An_Angel_Comes_To_Brooklyn_r1/0805232.dpx |47763c69aa8fe03f51420513f906f8b
11 An_Angel_Comes_To_Brooklyn_r1/0805233.dpx |03364c11169c106099717077c0db882
12 An_Angel_Comes_To_Brooklyn_r1/0805234.dpx |201f161008f313a754b41c3ac258a6f41
13 An_Angel_Comes_To_Brooklyn_r1/0805235.dpx |b50f2f0745ccc950931bcbc4d7186c8
14 An_Angel_Comes_To_Brooklyn_r1/0805236.dpx |4a0f6c50854305138a35c027a608f7
15 An_Angel_Comes_To_Brooklyn_r1/0805237.dpx |0a4176a02cace004f6165d64652fee
16 An_Angel_Comes_To_Brooklyn_r1/0805238.dpx |fee3a0d7e7ba0800394fd63a2d5ae
17 An_Angel_Comes_To_Brooklyn_r1/0805239.dpx |52a0280a679306f957aae2f261f8cc09
18 An_Angel_Comes_To_Brooklyn_r1/0805240.dpx |05f09430f65a995c24090a8237950c
19 An_Angel_Comes_To_Brooklyn_r1/0805241.dpx |0b8485f3d1317d7038f7719966f1a1a
20 An_Angel_Comes_To_Brooklyn_r1/0805242.dpx |677c238e5c1b3480e4041627a96d45
21 An_Angel_Comes_To_Brooklyn_r1/0805243.dpx |0c83991cc07296400103969f413156
22 An_Angel_Comes_To_Brooklyn_r1/0805244.dpx |100cc08320917933e90a3f5a517014
23 An_Angel_Comes_To_Brooklyn_r1/0805245.dpx |0c722a146f29e52f6a2698451e07e080
24 An_Angel_Comes_To_Brooklyn_r1/0805246.dpx |ad09807e080892a1a158c3c367009106
25 An_Angel_Comes_To_Brooklyn_r1/0805247.dpx |0987216331f46216f06d66f0af0e039
26 An_Angel_Comes_To_Brooklyn_r1/0805248.dpx |928f3d1cee08096a93574a7fcea07548
27 An_Angel_Comes_To_Brooklyn_r1/0805249.dpx |644c8c0df040306fbee975db40f9863
28 An_Angel_Comes_To_Brooklyn_r1/0805250.dpx |00580a62029c9a90a0974c9f1525061
29 An_Angel_Comes_To_Brooklyn_r1/0805251.dpx |f7109f49084a464575fca347151acc4
30 An_Angel_Comes_To_Brooklyn_r1/0805252.dpx |076504c3f21627604908064c0b70401
31 An_Angel_Comes_To_Brooklyn_r1/0805253.dpx |4e2c8109c2d576a50a8d8790be1e1
32 An_Angel_Comes_To_Brooklyn_r1/0805254.dpx |a326980cfff1092a11026e50b00125
33 An_Angel_Comes_To_Brooklyn_r1/0805255.dpx |26a6f000899ef1c0b3f185664dc133
34 An_Angel_Comes_To_Brooklyn_r1/0805256.dpx |9dc352137780e273bab1659dd0d83c9b
35 An_Angel_Comes_To_Brooklyn_r1/0805257.dpx |109da223a72e80df6a58e326f13a877
```



Step 6: Validate & Restore Workflow



Confirm all metadata is labeled correctly
on both physical & digital assets.



OCN



CFG

Step 7: Prep Asset for Ingest



Standardize

Conform material to Ingest Spec and prepare Metadata.

USE SCRIPTS

Shell Scripts

Standardized Restore methods, and more efficient workflows.

CHECK
FORMAT

Check Media Format

Each type of media has a unique restore workflow.

VALIDATE

Results Analysis

Compare Checksums, Resolution and Frame Count to ensure content is as expected.

RESTORE

Restore Media

Time will vary, depending on media type.

Finally – STORAGE



Send to Digital Preservation Infrastructure

Standardize

Conform material to Ingest Spec and prepare Metadata.

VALIDATE

Results Analysis

Compare Checksums, Resolution and Frame Count to ensure content is as expected.

USE SCRIPTS

Shell Scripts

Standardized Restore methods, and more efficient workflows.

RESTORE

Restore Media

Time will vary, depending on media type.

CHECK
FORMAT

Check Media Format

Each type of media has a unique restore workflow.



Preservation Scanning



Optimized workflow for preparation of film elements for long-term preservation in a Digital Asset Infrastructure



ENTIRE PROCESS IS DOCUMENTED. ALL REPORTS PROVIDED WITH FINAL DELIVERABLES.