

Processing Camera Files in Vantage

This App Note
applies to
Vantage version
6.3 UP4 or later

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Overview

Vantage's Camera Ingest option enables hands-free batch ingest and processing of field camera media. The Camera Ingest option allows you to create camera-specific hot folders, supporting both card readers and Windows directories. Camera Ingest supports market-leading complex camera file formats, and allow you to set up your rules for shot detection, stitching, and ingest. Camera Ingest workflows automate the ingest, transcoding, and delivery of shots for importing into your editing system.

Vantage Camera Ingest frees editors to focus on editing, instead of manually finding, importing, and stitching shots. Operators can insert cards or copy camera files directly into a hot folder. Vantage detects shots, and automatically links spanned shots to ensure that each shot is correctly ingested and processed. When a complete shot is available, it is automatically processed and prepared for editing.

For Avid environments, compatible MXF Op Atom and AAF files can be created for Media Composer. For Interplay environments, multi-resolution assets and associated metadata can be created and automatically checked into Interplay, allowing for immediate Frame Chase editing.

In addition to processing one job per shot, many projects create camera shots which need to be time-aligned or stitched, requiring more labor to find and prepare the media before actual editing begins.

Performing these tasks manually, shots may easily be lost or placed in the wrong order—this combination of manual import and alignment can waste precious editing hours every day. Camera Ingest reduces this labor by automatically performing both stitching and time-alignment of shots during processing.

Note: This guide is written for video professionals who are familiar with using Vantage. To use the Camera Ingest option effectively in Vantage, you should know how to create workflows and submit jobs. If you aren't familiar with Vantage, we suggest that you review the Vantage User's Guide.

Camera Ingest Features

Camera Ingest is implemented by the Camera Ingest action, which you place at the start of each camera file processing workflow.

Automated Complex File Ingest

The Camera Ingest action automatically ingests both spanned and split files, self-contained single and multi-file shots, and referenced (XML) single- and multi-shot files.

For multi-file camera files, the Camera Ingest action waits until the directory is stable and all multi-shot media files are present before submitting a job. For split and spanned files, the Camera Ingest action also waits until all files are present before submitting a job (for example, inserting cards into a card reader).

Spanned Shots

A spanned shot is a shot where the video is split across multiple files, across multiple locations. Files may physically be on different cards (in a camera card reader) or in different directories (if copied to a computer). Generally speaking, you don't need to know the underlying file structure; Vantage automatically detects this for you and composes the shot for all cases.

Split Shots

A split shot refers to media that is split temporally, across multiple files within the same directory or on the same storage medium (card). For example: *SHOT001.mxf* and *SHOT002.mxf*, stitched together, form a single shot.

Single File and Multi-Shot Files

A single-file or self-contained shot is video that is entirely captured in a single media file. The key characteristic of a single-file shot is that the media does not need to be stitched together from multiple files (although audio and data tracks may be stored in separate files).

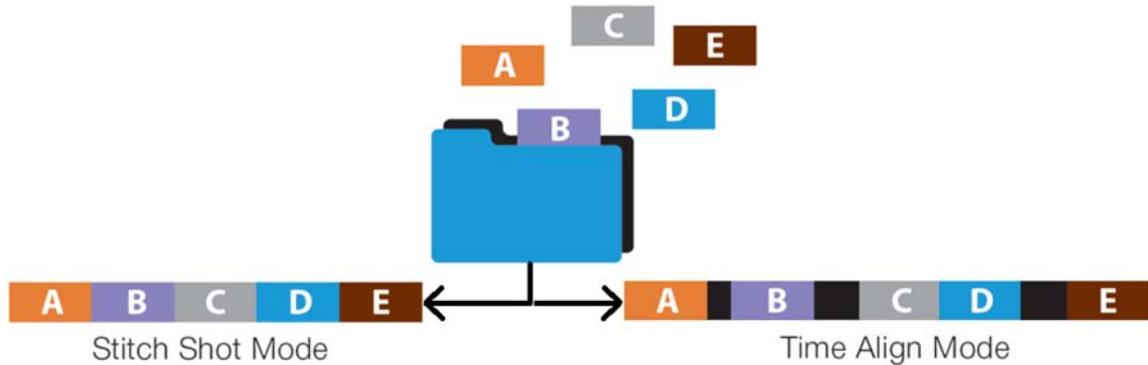
Single File Example: *SHOT001.mxf* contains both audio and video

Multiple File Example: *SHOT001v.mxf* and *SHOT001a.mxf* contain video in one file and audio in another file. This is considered a single or self-contained file because the shot will always be contained in a single location and the video is entirely in one file.

Automated Single, Stitched, and Time-aligned Shot Processing

You can use Camera Ingest to automatically perform single-file shot processing, as well as stitch processing and time-aligned shot processing.

Figure 1. Camera Ingest automates stitching and time-aligned processing.



One Job Per Shot

In One Job Per Shot mode, for each logical shot, the Camera Ingest action submits one job to the workflow for processing as a single item.

Stitch Shots

In Stitch Shots mode, all shots saved in a common root folder with common temporal and spatial characteristics are stitched together into a continuous output file.

Time-align Shots

In Time-align Shots mode, all shots saved in a common root folder which relate to one another temporally are submitted to a single job for stitching.

Transcoding Camera Files

The Camera Ingest action gathers all relevant information contained in each camera folder it is configured to monitor. This information, which includes references to media files and metadata, are output by the Camera Ingest action as a SMIL-formatted XML media file for processing by downstream encoder actions. In order to properly parse the SMIL file and process the media, the encoder action (Flip, IPTV, or Multiscreen) must have its decoder set to Camera.

See [Hardware and Software Requirements](#) for the respective encoder revisions supporting Camera Ingest.

Hardware and Software Requirements

The Camera Ingest option requires the following Vantage components:

- Vantage version 6.3 with Update Pack 4 or later
- Transcoder update 2015.10 or later
- Vantage Analysis update v6.3.620.4 or later

The Camera Ingest service is compatible with both Lightspeed and standard Vantage servers.

If your Vantage domain is licensed for IPTV VOD or Multiscreen and you have connected the IPTV VOD or Multiscreen actions directly to the Camera Ingest action, you must install these updates:

- IPTV VOD update 6.3.9 or later
- Multiscreen update 6.3.9 or later

Contact Enterprise Systems Support to obtain these updates.

Follow the installation directions that accompany each component and ensure that the Vantage domain meets their requirements.

Licensing

Camera Ingest is a licensed Vantage option. To purchase the required licenses to use Camera Ingest, please contact Telestream or your authorized Telestream reseller.

Each Camera Ingest license enables camera ingest for one Transcode node. To enable camera ingest for multiple nodes, one Camera Ingest option must be purchased for each node.

Camera Ingest Action Overview

The Camera Ingest action is located in the Monitor category in Vantage Workflow Designer. (For details on creating and managing workflows using Workflow Designer, see the Vantage User's Guide).

The Camera Ingest Action is an origin action and can only be used as the first action in a workflow. It uses the Monitor Service to regularly poll the specified target location (a Windows directory or share, for example) or card reader device to discover new camera files of supported formats, including reference files. You can also manually submit jobs to workflows the begin with a Camera Ingest action.

Note: Each Camera Ingest action is configured to detect a specific camera file format. If the target location contains both P2 AVC-Intra and XDCAM EX files, for example, then two Camera Ingest actions are required. Usually, the best strategy is to create two separate workflows, one for ingesting each file format.

When a workflow is activated, the Camera Ingest action continually polls the target location. When a new file or shot is discovered, the Camera Ingest action submits a job for processing. The Camera Ingest action can be configured to stitch individual shots (including self-contained, split, and spanned shots), and control whether camera content is broken into individual sections, or treated as a single unit.

Camera Ingest actions enable workflows to control whether each shot is processed alone or whether multiple shots are stitched together in a single job. In the context of the Camera Ingest action, a shot is the media which is created by a recording action on a camera between a start and stop event, stored in one or more files created as necessary, under control of the camera's file system.

Configuring Camera Ingest Actions

To configure a Camera Ingest action, drag the action onto your work area.

Figure 2. Drag a Camera Ingest action onto your work area to begin a Camera Ingest workflow.



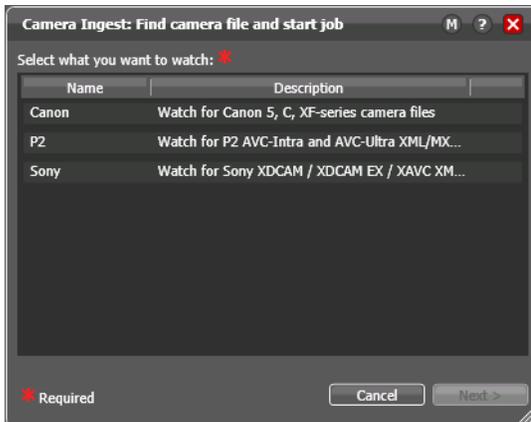
Click the  icon (at top left corner) or double-click the action to display the inspector.

Review and configure each panel, then click Next to proceed to the next panel in the wizard. On the last panel, click Save to update the action in the workflow and close the inspector.

Selecting the Camera type

Each camera's file structure differs. Select the camera type for this action from the list of supported camera formats.

Figure 3. Select the Camera file system that applies to this workflow.



The camera type you select enables the Camera Ingest action to properly detect the file or files, and process them correctly.

The Camera Ingest action can detect and process camera files for the following cameras:

- [Canon Detector](#)
- [P2 Detector](#)
- [Sony Detector](#)

Canon Detector

The Canon Detector component identifies and processes media files created on Canon cameras—specifically 5D Mark II, Mark III, and C300 cameras.

The Canon Camera Detector provides the ability to identify and process the structure of Canon shots, associate them based upon the rules of the file system component, and then submit jobs for processing by Vantage.

A Canon shot is either a single file or a sequence of files created when the media was originally recorded on the camera. The Canon Camera Detector determines whether a shot is comprised of a single file or multiple files (a spanned shot).

The Canon Camera Detector monitors the specified Windows directory for existing or new media files.

P2 Detector

The P2 Detector is responsible for identifying new files in the target directory, and processing them.

P2 storage cards are used by many Panasonic cameras. Each shot on P2 storage has a single XML file which defines the shot and has supporting media files containing video and audio. Panasonic cameras support both AVC-Intra and AVC-Ultra MXF video codecs. For different cameras, the directory structure is fundamentally the same but there may be differences in the XML syntax, depending upon which camera is used.

When a Panasonic P2 Detector is specified, workflows can process media from a Panasonic P2 camera/memory drive/player/recorder or other P2 device. The Camera Ingest action can be configured to ingest from a directly-attached card reader, or by copying the CONTENT folder into the target local folder on the local Vantage server or into a share folder on a network-accessible Windows server.

When reading from a card reader, Vantage accesses P2 cards as mounted individual drives identified by drive letter; multiple P2 cards may be presented at the same time (for example, the AJ-HPM200 card reader may present five drives, one for each card). Older Panasonic cameras impose a 4GB limit on file sizes, so a single shot may span multiple files. A single shot may also span multiple cards. Vantage will reconcile spanned shots but does require that all cards are available at the same time before the job can be submitted, and requires that cards remain available until the media has finished being copied locally or processed.

When reading from a network folder, when a new XML file is detected in the monitored folder, a job is automatically submitted. Vantage uses the contents of the XML file to process the associated media files. Spanned shots will be reconciled across multiple subfolders, allowing you to copy the contents of multiple cards to a network folder without keeping cards in the card reader during processing.

Sony Detector

The Sony Detector is responsible for processing media from Sony cameras. The supported formats are XDCAM, XDCAM EX, and XAVC.

XDCAM and XDCAM EX format content is created in a directory structure containing BPAV\CLPR files. The Sony Camera Detector examines this directory structure to identify XDCAM/XDCAM EX files. Therefore, when copying XDCAM or XDCAM EX files into a Windows directory that is a

watch folder, the directory structure must be preserved. To watch for XDCAM and XDCAM EX files, the file accept pattern should be configured to look for *.SMI files.

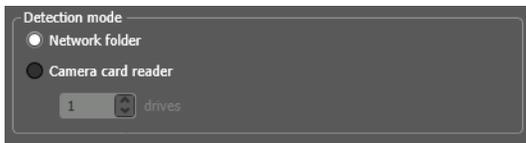
XAVC format content is stored in a directory structure containing XDROOT\Clip files, and the component examines this directory structure to identify XAVC files. Therefore, when copying XAVC files into a Windows directory that is a watch folder, this directory structure must be preserved. To watch for XAVC files, the file accept pattern should be configured to look for *.XML files.

Sony shots may be spanned across multiple media files. The Sony Camera Detector determines which media files are part of the same shot and submits them as a single shot.

Selecting Detection Mode

When P2 is selected as the Camera type, the Camera Ingest action displays the Detection Mode panel. If you selected a camera type other than P2, proceed [Selecting the Network Path](#).

Figure 4. Specify whether the camera files are located on a Windows file system or card reader.



Select which type of file system to monitor.

Network Folder

When checked, the monitor polls the specified server and directory, including portable hard drives, for new media files.

Card Reader

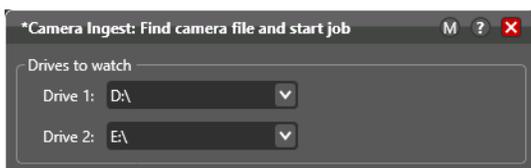
When checked, specify the number of slots in the card reader. The monitor polls the specified card reader directly, for new media files, detecting insertions and removal, processing new files on insertion.

Note: When a card reader is specified, the transcode service that executes the encoding action in the workflow must be hosted on the same server as the card reader. If you want to access the files over the network via a UNC path to a share, use the Network Folder option.

Selecting the Drives to Watch

When P2 is selected as the Camera type and Detection Mode is set to Camera Card reader, the Camera Ingest action displays the Drives to Watch panel. If you selected Network Folder, proceed to [Selecting the Network Path](#).

Figure 5. Specify the Drive Letter for the specified drives in the card reader.



For the number of drives specified in your card reader, identify the drive letter of each drive to monitor.

Selecting the Network Path

When Network Folder is selected as the Detection Mode, use this panel to specify the target Windows directory to monitor for media files.

Figure 6. Enter the fully-qualified path to the hot folder (UNC is ideal, especially in an array).



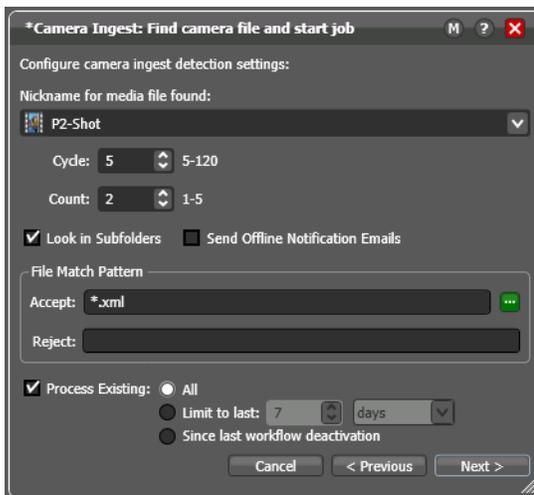
Enter the fully-qualified path to the Windows server and directory, or click Browse to navigate to and select the server and directory. Telestream recommends the use of UNC paths to assure access to the file. Only use local paths when the service executing this action is running on the server where the target directory is located.

Note: If the network drive goes off-line, when it comes back online, the Camera Ingest action will scan it again to determine if any new shots have been placed in the directory during the off-line period.

Camera Ingest Detection Settings

Configure the camera ingest settings to specify how new files are detected and processed.

Figure 7. Configure your camera file ingest settings for this workflow.



How New Shots are Discovered

In the context of the Camera Ingest action, a shot is the media which is created by a single, continuous recording action on a camera, and is stored in one or more files created as necessary, under control of the camera's file system. The file system structure will differ from one camera manufacturer to another.

A shot is considered new if at least one of the following conditions is met:

- The shot file itself was not present on server during the last file detection scan.
- The size of the shot file has changed during the scan counts specified.
- The modification date of the shot file has changed since last file detection scan.

A new job is submitted for a shot (or a collection of shots, depending on your configuration) when all of the following conditions are met:

- The size of the shot file(s) and associated media files has not changed during the scan counts specified.
- The modification date of the shot file(s) and associated media files has not changed during the scan counts specified.
- All media files required for the shot(s) are ready for ingest and processing.

Settings

Configure the following settings as appropriate for your workflow:

Nickname—Specifies the nickname to assign to the specified shot, which you can use to reference this shot in all subsequent actions in the workflow.



Cycle and Count—Determines how many seconds occur between polls, and how many polls the shot file(s) must remain at the same size before being submitted (ensure that the file system has closed new files after writing is complete).

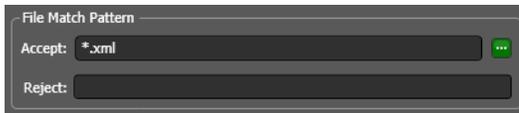


Look in Subfolders—Indicates that you want all sub-folders in the target location to be polled for new media as well (see [Folder and Subfolder Path Variable Examples](#)).

Send Offline Notification Emails—Indicates that you want an email sent to the administrator when this action fails.



File Match Pattern—Limits file selection to files that adhere to the specified pattern.



In the Accept and Reject fields, optionally enter one or more patterns, separated by an OR bar (|). No spaces are allowed. To accept all files, do not enter a pattern. Typically, you enter patterns in either the Accept or Reject field, not both. Ideally, select the easiest pattern to describe. The Accept field is automatically populated with the appropriate file pattern based on the Camera type selected:

- For Canon systems, the default pattern is *.xml|*.mov.
- For P2 systems, the default pattern is *.xml.

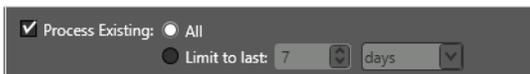
- For Sony systems, the default pattern is `*.xml|*.smi`.
 - For XDCAM and XDCAM EX files, use `*.smi`.
 - For XAVC files, use `*.xml`.

Filename patterns are not case sensitive. They can contain the standard wild card characters `?` and `*` and can include multiple patterns, separated by the `|` (OR bar) character. For example, to filter files having an MPEG extension, enter `*.mpg`. To filter all files with the extension `.fpk`, enter `*.fpk`.

To filter all files beginning with the letters `TESTBARS` or containing the word `BLACK`, enter `TESTBARS* | *BLACK*`.

To filter files by a single character, use the `?` wild card character. You can use the `?` repeatedly; one for each wildcard character. For example, to filter all MXF files with the same root name plus a four-character sequence, enter `Clip????.mxf`.

Process Existing—Indicates that you want the workflow to process all existing media in the specified directory that has not yet been processed. For example, if this is the first time that a workflow has been put into production, you may want all media files submitted the first time.



When enabled, you can limit the age of the file in the hot folder to a certain number of days.

Active Only—Indicates that you want the workflow to monitor the specified hot folder on the specified days and times.



Camera Shot Submission Mode Settings

The Camera Ingest action can be configured to submit jobs in one of three modes:

- One Job Per Shot
- Stitch Shots
- Time-align Shots

Regardless of the mode, the camera ingest detection settings on the previous panel determine how new shots are discovered.

The mode specifies the how this action should process the new shot or shots identified. Proceed to the topic below for the mode you want to use, to learn how it works and how to configure it for your requirements.

One Job Per Shot

When you specify that the Camera Ingest action should submit one job per shot, there are no controls to configure.

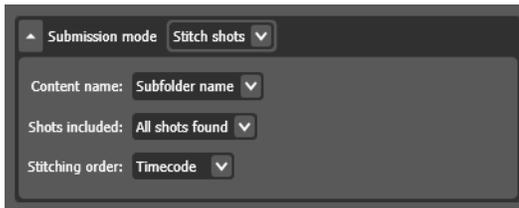


A shot may be a single file or may be comprised of multiple files in a folder. For example: You are shooting with a Canon C300 camera and you record continuously for an extended period of time; the media will be written as multiple MXF files in a specific folder. These files are all considered to be part of a single shot and in this mode will be submitted as a single job. If you have multiple shots on the camera, each will be submitted as a single job.

The default name of the output file for One Job Per Shot is always the base name of the input file.

Stitch Shots

Stitch Shots specifies that all shots identified on a card or a Windows network location should be stitched together into a single file. When you specify that the Camera Ingest action should Stitch Shots, configure the controls as described here.



All shots saved in a common root folder AND which share common temporal and spatial characteristics are stitched together. For example, you have both NTSC and PAL shots in a single folder. All of the NTSC shots of the same resolution are stitched together and all of the PAL shots of the same resolution are stitched together. The same is true for NTSC SD and HD shots - they would not be stitched together.

Content Name—Specifies how jobs and output files are named:

- **Subfolder Name:** Use the name of the containing folder that is not unique to a given camera format. When Submission Mode is Stitch Shots and Content Name is set to Subfolder Name, the name the same value as the Subfolder variable value, unless the Subfolder is null - then the job name is set to the lowest folder name in the target directory.
- **First Shot:** Use the name of the first shot (ordered by SOM)
- **Date/Time:** Use the file date/time of the first shot (ordered by SOM).

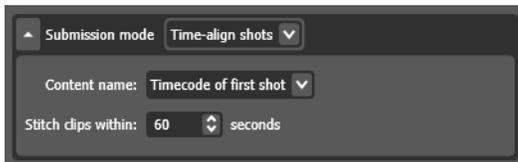
Shots Included—Specifies which shots to include:

- **All shots found.** Include all shots in different subfolder branches down to the lowest level subfolders above the camera file system.
- **All shots in Subfolder.** Include only shots in a single subfolder, down to the lowest level subfolder above the camera file system.

Stitching Order—Specifies that the shots are stitched in order of timecode.

Time-align Shots

Time-align Shots specifies that all shots identified on a card or a Windows network location should be stitched together into a single file. Those shots which relate to one another temporally are submitted to a single job for stitching. When you specify that the Camera Ingest action should stitch multiple shots by time alignment, configure the controls as described below.



All shots saved in a common root folder AND which share common temporal and spatial characteristics are stitched together. Thus, if for example, you have both NTSC and PAL shots in a single folder, all of the NTSC shots of the same resolution are stitched together and all of the PAL shots of the same resolution are stitched together. The same is true for NTSC SD and HD shots - they would not be stitched.

Content Name—Specifies how jobs and output files are named:

- Timecode of First Shot: Use the file date/time of the first shot (ordered by SOM)..
- Name of First Shot: Use the name of the first shot (ordered by SOM)

Stitch Clips Within—Specifies the threshold of time (in seconds) between shots that should be stitched (for example, Stitch shots less than 90 seconds apart). This threshold is the elapsed time from the EOM of one shot to the SOM of the next shot. This allows you to control the maximum amount of black added between shots. Maximum threshold: 1800 seconds - 30 minutes. Eligibility for inclusion rolls over at midnight.

Clips stitched in this manner will have Black inserted for the duration of any gap between shots, to recreate the time-of-day of the original shoot.

For multi-camera editing, when multiple cameras are creating shots over a period of time, Vantage simplifies the process of aligning shots across cameras by creating one large media file per camera with all shots contained, and pre-aligned to real time. This allows editors to align one file per camera, instead of having to align all shots individually.

For example, three 29.97 shots are in a folder: ClipA, ClipB, and ClipC. ClipA runs from 00:00:10:00 to 00:00:12:00; ClipB from 00:00:12:30 to 00:00:14:00 and ClipC from 00:00:18:00 to 00:00:20:00. An interval of 60 is specified. Thus, a single job will be created for ClipA and ClipB, since the end of ClipA is less than 60 seconds from the start of ClipB, and the 30-second gap between the shots will be filled with Black. However, since the start of ClipC is more than 60 seconds from the end of ClipB, ClipC will be submitted by itself, as a second, single job.

Camera Variables and Logging Settings

Use this panel to generate variables for various shot metrics, for use in downstream actions. You can also create a log for the Camera Ingest action by job.

Generating Variables

Check each item that you want assigned to a variable for use in downstream actions, and select the variable to use. Metadata varies, depending on the camera file format you are processing.

Clip Name—The base name of the file, or the first file in the shot, if stitching.

Shoot Start Date—The date/time stamp of the file, or the first file in the shot, if stitching.

Shoot End Date—The date/time stamp of the file, or the last file in the shot, if stitching.

SOM—The starting timecode of the shot. In a job which comprises multiple shots, the SOM always corresponds to the SOM value of the first shot in the shot - the earliest SOM.

Subfolder—When the target is a network directory, the folder structure between the monitored location and the location that is unique to a camera format. This value will be null when camera files are store directly in the monitored folder.

Subfolder Path—When the target is a network directory, the fully-qualified path down to the lowest subfolder that is not unique to the camera format.

The goal of publishing the Subfolder and Subfolder path variables is to provide the name of the folder or folders, as well as the fully-qualified path of the shot or shots being transcoded (and possibly stitched) for use in downstream actions that may need to operate on these files. These values will generally not include the underlying file structure of the camera file system.

Folder and Subfolder Path Variable Examples

The following examples illustrate the values that the Subfolder and Subfolder Path variables will be populated with in various situations.

Note: In Card Reader Mode (P2 Only), the Camera Ingest action reads the card drives directly and thus folders have no meaning. As a result, the Subfolder Path and Subfolder variables are not enabled.

One Job Per Shot Example #1

In this example, relevant controls are set as follows:

- Path to Watch: C:\IN\
- Camera Ingest Detection Settings > Look in Subfolders enabled
- Submission Mode: One Job Per Shot

One of the following folder structures is detected:

- C:\IN\HurricaneSandy\XDROOT\... for Sony XDCAM shots, where XDROOT is part of the Sony file system.
- C:\IN\HurricaneSandy\BPAV\... for Sony MP4 shots, where BPAV is part of the Sony file system
- C:\IN\HurricaneSandy\CONTENTS\... for Panasonic shots, where CONTENTS is part of the Panasonic file system.
- C:\IN\HurricaneSandy\CONTENTS\CLIPS001... for Canon MXF shots, where CONTENTS\CLIPS001 is part of the Canon file system.
- C:\IN\HurricaneSandy\... for Canon or GoPro MP4 files where they are simply located in the directory without file a camera system structure.

For this example the Subfolder and Subfolder Path variables are set to the structure immediately prior to the camera ROOT folder. Therefore the action will publish these values in the Subfolder and Subfolder Path variables for each shot being transcoded:

- Subfolder: HurricaneSandy
- Subfolder Path: C:\IN\HurricaneSandy\

One Job Per Shot Example #2

In this example, relevant controls are set as follows:

- Path to watch: C:\IN\

- Camera Ingest Detection Settings > Look in Subfolders enabled
- Submission Mode: One Job Per Shot

A nested subfolder structure is detected. Nested subfolders return the entire subfolder structure, as shown in this example:

- C:\IN\Week23\Monday\HurricaneSandy\XDROOT\... for Sony XDCAM shots, where XDROOT is part of the Sony file system and may contain multiple shots

The action publishes these values in the Subfolder and Subfolder Path variables for each shot being transcoded:

- Subfolder: Week23\Monday\HurricaneSandy
- Subfolder Path: C:\IN\Week23\Monday\HurricaneSandy\

Stitching Examples

When stitching shots together the common root subfolder and subfolders (if any) for the shots being stitched is published into the Subfolder variable. The fully-qualified path prior to the lowest common folder is published in Subfolder Path.

Each of these examples also describes how the Clip Name variable is set when the Submission Mode Content Name setting is set to Subfolder name.

Stitching Example #1

In this example, relevant controls are set as follows:

- Path to Watch: C:\IN\
- Camera Ingest Detection Settings > Look in Subfolders enabled
- Submission Mode: Stitch Shots
- Content Name: Subfolder name
- Shots Included: All Shots Found

The following folder structures are detected:

- C:\IN\Week23\Monday\HurricaneSandy\XDROOT\...
- C:\IN\Week23\Monday\CountyFair\XDROOT\...

The action submits one job, which stitches both HurricaneSandy and CountyFair shots, because both have a common subfolder of ..\Monday.

The action publishes these values in the Subfolder, Subfolder Path, and Content Name variables:

- Subfolder: Week23\Monday
- Subfolder Path: C:\IN\Week23\Monday\
- Clip Name: Monday

Stitching Example #2

In this example, the same settings apply, but the following directory structure exists:

- C:\IN\Week23\Monday\HurricaneSandy\XDROOT\...
- C:\IN\Week23\Monday\CountyFair\XDROOT\...

- C:\IN\Week23\Tuesday\CarCrash\XDROOT\...

In this case, the action again submits one job, which stitches the HurricaneSandy, CountyFair, and CarCrash shots as expected, because all are subfolders of ..\Week23.

The highest common path is \Week23 because the CarCrash files are in \Tuesday, so the action publishes these values in the Subfolder, Subfolder Path, and Content Name variables:

- Subfolder: Week23
- Subfolder Path: C:\IN\Week23\
- Clip Name: Week23

Stitching Example #3

In this example, the same settings still apply, but a third directory structure exists:

- C:\IN\Week23\Monday\HurricaneSandy\XDROOT\...
- C:\IN\Week23\Monday\CountyFair\XDROOT\...
- C:\IN\Week42\XDROOT\...

In this case, the action again submits one job, which stitches the HurricaneSandy, CountyFair, and Week42 shots as expected; all are subfolders of ..\IN.

However, the highest common path in this example is the root folder \IN, so the action publishes these values in the Subfolder, Subfolder Path, and Content Name variables (note that Subfolder is empty):

- Subfolder: NULL
- Subfolder Path: C:\IN\
- Clip Name: IN.

Stitching Example #4

In this example, relevant controls are set as follows:

- Path to Watch: C:\IN\
- Camera Ingest Detection Settings > Look in Subfolders enabled
- Submission Mode: Stitch Shots
- Content Name: Subfolder Name
- Shots Included: All Shots in Subfolder

The target directory is again C:\IN\, but Shots Included is set to All Shots in Subfolder. The following directory structure is discovered:

- C:\IN\Week23\Monday\HurricaneSandy\XDROOT\...
- C:\IN\Week23\Monday\CountyFair\XDROOT\...
- C:\IN\Week23\Tuesday\CarCrash\XDROOT\...

Therefore, the action submits three jobs—one each for HurricaneSandy, CountyFair, and CarCrash.

The action publishes these values in the Subfolder, Subfolder Path, and Content Name variables:

For the HurricaneSandy job...

- Subfolder: Week23\Monday\HurricaneSandy
- Subfolder Path: C:\IN\Week23\Monday\HurricaneSandy\
- Content Name: HurricaneSandy

For the CountyFair job...

- Subfolder: Week23\Monday\CountyFair
- Subfolder Path: C:\IN\Week23\Monday\CountyFair\
- Content Name: CountyFair

For the CarCrash job...

- Subfolder: Week23\Tuesday\CarCrash
- Subfolder Path: C:\IN\Week23\Tuesday\CarCrash\
- Content Name: CarCrash

Logging

To log activity on this action, check Log Activity and specify the directory where you want the action to write log files, optionally specifying a file name pattern. The information includes information about why certain files were not submitted. For example, a Canon-configured Camera Ingest action would log an error if a C300 shot was encountered which did not have SOM material.

This also provides a complete history of all files that have been submitted. You can use this information to compare it against producer notes and make sure that all shots have been accounted for and processed.

Camera Ingest Workflow Examples

The following workflow examples depict typical use of Camera Ingest in Vantage workflows to simplify and automate camera shot ingest, processing, and delivery.

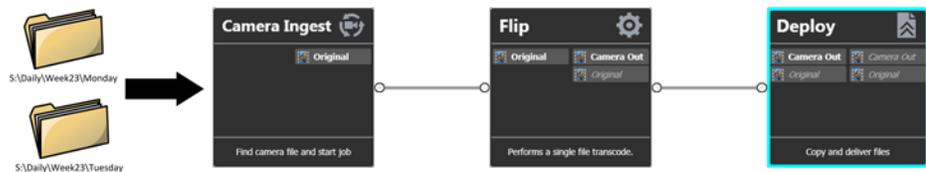
Daily String Out Creation

This workflow takes footage shot over several days and stitches shots from each day into separate files named for the day of the week. It then transcodes each days content into the desired edit format, then deploys (delivers) the stitched file, ready for immediate edit, to the share storage used by the creative edit team.

This workflow assumes that the content of the Camera(s) has been copied to a network location accessible by Vantage. Media files from Monday are copied into the S:\Daily\Week23\Monday folder and media from Tuesday copied into S:\Daily\Week23\Tuesday folder.

The Camera Ingest Action is the first action in the workflow. In the case of this example it is configured with the P2 Camera Detector watching a Network Folder with a base folder of S:\Daily\Week23. The Submission Mode is set to Stitch shots and will process All shots in subfolders. In the case of this example all media shots found in the \Monday subfolder will be stitched together and all media shots found in the \Tuesday subfolder will be stitched together.

Figure 8. Typical Daily String Out Workflow.



The Flip Action is configured with its decoder set to Camera, and transcodes each day's content into individual QuickTime ProRes 422 files, naming them *MondayShoot.MOV* and *TuesdayShoot.MOV* respectively.

The final action deploys (delivers) each stitched file, ready for immediate edit, to the share storage location where the creative edit team can begin editing.

Multiple Camera Alignment into Avid Interplay (Reality Shoot)

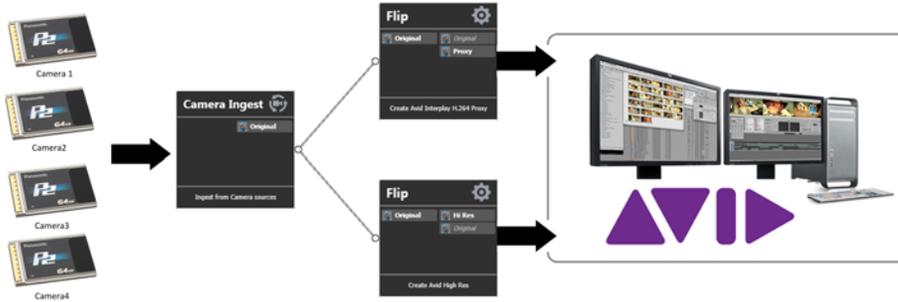
This workflow takes footage shot on multiple cameras over a single reality show's production day. Each Camera's content is stitched together and time-aligned into separate Avid media files allowing for multiple camera editing. The stitched shots from each camera are used as the source for creating high res and H.264 edit proxy assets for Avid Interplay. Using Avid's Frame Chase editing a multi-cam edit session can begin immediately as all of the camera's content is being ingested and checked into Avid Interplay.

This workflow assumes that the content shot by each Camera resides on the original memory card inserted into a multiple slot card reader. Each card is mounted as a drive letter on a single node Vantage system. They will appear as the W:/ X:/ Y:/ and Z:/ drives.

The Camera Ingest Action is the first action in the workflow. In the case of this example it is configured with the P2 Camera Detector watching a Camera card reader configured with 4 drive slots which will appear as drives W:/ X:/ Y:/ and Z:/. The Submission Mode is set to Time

align. In the case of this example all media shots found in each of the ..\Camera[nn] subfolders will be stitched together based on their time code with black frames inserted into spaces where the camera was not recording. This assures the single camera file will have accurate time code for all recorded material for that day's production shoot.

Figure 9. Typical Time-align Stitching Workflow.



The Flip Action in this workflow has its decoder set to Camera and uses the Avid AAF Encoder's Interplay container to transcode each camera's content into individual Avid MXF OP Atom files, write them to ISIS storage, while simultaneously checking each resolution into Interplay.

This workflow allows a multi-cam edit to begin immediately as all camera shots are move onto the Avid Interplay system, eliminating the need for waiting until the processing is complete.

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