Vantage
Application Note

Using Nielsen Watermarking with Vantage

This App Note applies to Vantage versions 7.1 and later

telestream

Overview

Television viewing has come a long way since measurement of audiences began. Today, the ability to watch shows at anytime, anywhere, and on a multitude of devices magnifies the importance of understanding your audience. Telestream's Vantage integration with Nielsen® technology provides the tools you'll need to measure your audience and monetize your content.

In the media and entertainment world, for both traditional and new media, content producers and distributors spend valuable time and resources developing content and planning media strategies. The constant question has always been whether you are reaching the right audiences, on the right devices, at the right time. Nielsen audience measurement solutions provide a comprehensive picture of the times, places, and methods media consumers are using to connect with content and advertising.

Telestream's Vantage Media Processing Platform with the integrated Nielsen technology provides the on-ramp that helps you gather the data required to understand how valued content is viewed.

Software Requirements

You will need the following software for Vantage with integrated Nielsen functionality:

- Vantage Transcode, Vantage Transcode Pro, Transcode IPTV Video on Demand (VOD) or Transcode Multiscreen.
- Vantage version 7.1 UP1 and later.
- Windows Server 2012 R2 or Windows Server 2016 (64-bit) Standard or Data Center Edition Please refer to the Vantage specification sheet for the Vantage version you have or are installing.
- Vantage license that includes a Nielsen Watermarking option(s) key (see Licensing).

Licensing

The Nielsen watermarking option for Vantage is enabled using the Vantage Nielsen Watermarking option product key. This license enables Nielsen Watermarking.

Server Communication and Port Settings

The following information concerning the Nielsen Source Identification (SID) TIC Server and the Vantage Server is provided for your reference and guidance.

Nielsen Source Identification (SID) TIC Server

On the Nielsen SID TIC server, the Nielsen VOD File Trigger Service should be disabled.

The latest version of the File Transfer Manager, which is 6.0.x, only supports ZIP file transfers and not individual XML files. However, the older version of File Transfer Manager, which is 4.x, can be used for XML only transfers.

Port 6543 is used for communication with the Discovery Service and Port 7999 is used for communication with the SID/TIC service. These ports must be open and the following protocol setup:

nnetsh firewall set portopening protocol = TCP port = 7999 name = Nielsen_STS mode = ENABLE scope = ALL

nnetsh firewall set portopening protocol = UDP port = 6543 name = Nielsen_DISCOVERY mode = ENABLE scope = ALL

Vantage Server

On the Vantage server, port 22 must be open so the ZIP file and metadata can be sent to the Nielsen Collection server at Nielsen.

Using Nielsen Watermarking in Vantage

A watermark is a sequence of bits that the Nielsen Watermark software inserts periodically into an audio stream, also referred to as an audio code. The components of the watermark (SID, TIC, and watermarking level) uniquely identify the portion of audio from which the watermark is extracted and the distribution source to which the audio content can be credited.

The Nielsen Watermarking Filter is available within the audio encoder when using the Flip (General Purpose), Flip64, IPTV VOD, and the Multiscreen encoder actions.

You can add the Nielsen Watermarking Filter to the audio encoder as follows:

1. Open the Audio Filter selection (Flip: drop down or Flip64/IPTV/Multiscreen: check box).
2. Select the Nielsen Watermarking Filter.
3. Open the Nielsen Watermarking configuration panel from the Audio setup.
4. Enter parameters, depending on the type of watermarking desired.

The configuration panel's controls and respective parameters vary depending on the encoder and the type of watermarking to be performed.

Specific metadata parameters used to populate associated metadata files can also be added. Metadata can come from accompanying XML or text files where it can then be associated with Vantage variables, or you can enter metadata directly into a workflow.

Note: Any configuration parameter that displays a green Variable Browse button can be supplied a value using a Vantage variable that has been assigned the value in an upstream action.

Flip Action Configuration

If your workflow uses the Flip Action (General Purpose), you can set the Nielsen Watermarking configuration parameters as described here.

Adding the Nielsen Watermarking Filter

To add the Nielsen Watermarking Filter:

1. Select the Audio Stream.

2. Open the Audio Filter menu and select Nielsen Watermarking.

3. In the Audio Stream panel, select the Nielsen Watermarking controls to display the configuration groups (General, Channel Settings, and Content Type) and the associated configuration settings.

4. Enter all parameter settings as they apply to your desired workflow.

Audio Filters

Audio Stream   Nielsen Watermarking Filter
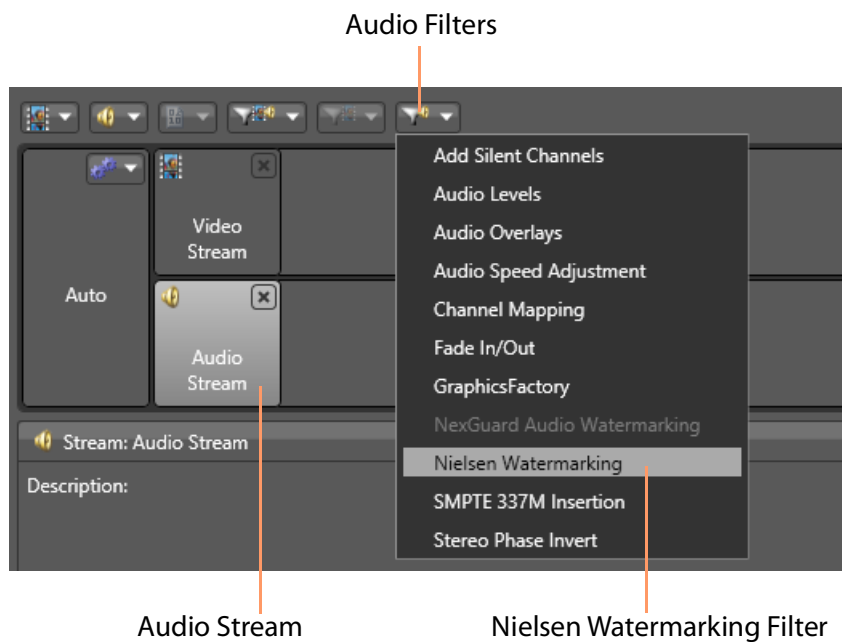
General Group

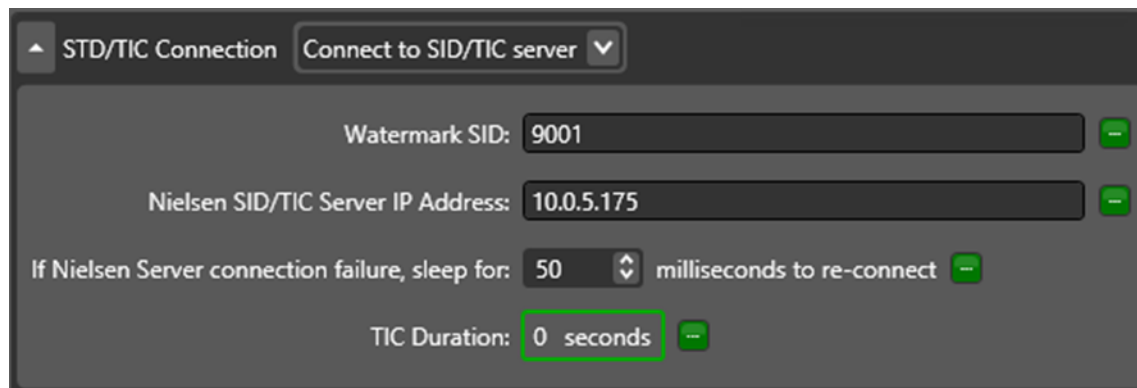The General group contains the following configuration parameters.
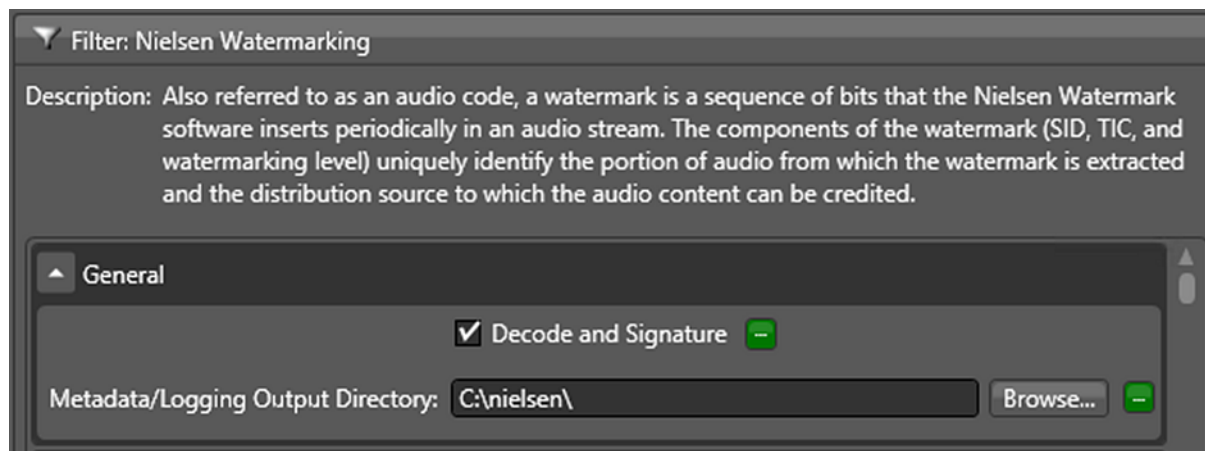
Decode and Signature: When selected, the transcoder decodes specific channels and Nielsen Watermarking generates signature files. You can bind this setting to a Boolean variable to enable or disable it dynamically, at run time.

Metadata/Logging Output Directory: Specify a fully-qualified directory (from the perspective of the Vantage domain server) where Vantage writes the metadata, log, and signature output files containing information about the transcode and the watermarked content. Enter or browse to select the directory path—usually a share—which is required, if you have a distributed (multi-server) domain. The Vantage service requires write permission for this directory.

You can send the resulting metadata files to Nielsen using the Nielsen secure delivery application.

SID/TIC Connection

Watermark SID: Nielsen assigns one or more SIDs to each content provider or distribution source. The SID uniquely identifies the distribution source and is included as a component of each watermark.
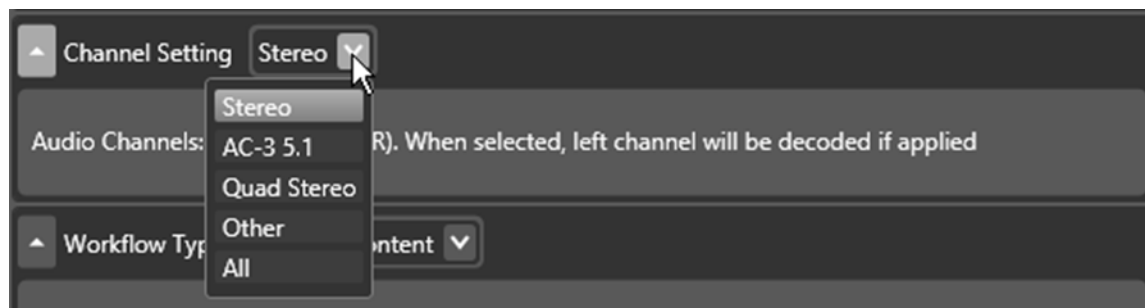
Nielsen SID/TIC Server IP Address: The IP address of the computer hosting the Nielsen licensing SID/TIC server system, which is required to execute the Nielsen Watermarking. Contact Nielsen to obtain their licensing SID/TIC server system.

If Nielsen Server connection failure, sleep for: Retry delay value (in milliseconds) for the connection to the Nielsen SID/TIC server. If a connection attempt fails, Vantage waits the prescribed time until it attempts another connection. Upon failing a second time, the transcode action aborts.

TIC Duration: Approximate duration (in seconds) of the source media file. The SID/TIC Server uses the duration to allocate the proper range of TICs. The duration can be extracted and assigned to a variable by using an upstream Analysis action.

Channel Settings Group

The Channel Settings group contains the following configuration parameters.

Channel Setting: Select the type of audio you are watermarking.

Legend:

L = Left; R = Right; C = Center, S = surround (mono); Ls = Left Surround; Rs = Right Surround; Lc = Left Center; Rc = Right Center; Cs = Center Surround; Lr = Left Rear; Rr = Right Rear; LFE = Low Frequency Effects (handled by a sub-woofer or bass management systems)

- *Stereo*: Requires 2 channels—for example 1,2. If you are generating a signature file, channel 1 is used.
- *AC-3 5.1*: Requires either 5 or 6 channels (L, R, C, Ls, Rs) or (L, R, C, LFE, Ls, Rs). When selected, down mixed left and center channels will be decoded if applied.
- *Quad Stereo*: Requires 8 channels. When selected, left channel will be decoded if applied.'
- *Other*: 1 to 8 channels required. The first channel is LEFT. When selected, the left channel will be decoded if applied.
- *All*: 1 to 8 channels (first channel is LEFT). When selected, all audio channels will be decoded if applied.

Workflow Type

The **Workflow Type** group contains the following configuration parameters.

Select Commercial Content or Program Content (D4) types. Two Content types are available. To apply commercial watermarking, choose Commercial Content. To apply D4 watermarking to a Program, choose Program Content.

Program Content (D4)

Process Type: N2, NW or Both

- N2—Nielsen Audio Encoder System II (also known as NAES2), the second-generation method of inserting an SID (Nielsen source identifier) and time stamp into a TV signal.
- NW—Nielsen Watermarks, a newer method of audio encoding that places an audio watermark in a lower-frequency portion of the active program than does NAES II technology. Its lower-frequency position enables NW to be more robust and much less likely to be "compressed out" of the program audio by TV distribution.
- Both—Encodes both N2 and NW watermarks in the audio stream.

DsrcId: Distribution Source ID.

DsrcName: Distribution Source Name.

AssetId: The asset ID to be reported in the metadata file for the clip that is being encoded.

AssetName: The asset name reported in the metadata file for the clip that is being encoded.

EpisodeId: The optional episode ID written to the feed-point metadata file.

HDContent: True or False; True if and only if content is high definition.

ApplicationName: Enter *Vantage*. This parameter is written to the metadata file for the clip that is being encoded.

ApplicationVersion: Enter the Vantage version currently installed. This parameter is written to the metadata file for the clip that is being encoded.

Commercial Content (SpoTTrac)

Process Type: Nielsen Watermark Commercial Code (NWCC), N2HF, or both.

AdvertiserName: User defined metadata. Enter the Advertisers Name to be reported in the metadata file.

AdvertiserID: User defined metadata. Enter the Advertiser ID to be reported in the metadata file.

AgencyName: User defined metadata. Enter the Ad Agency Name to be reported in the metadata file.

AgencyId: User defined metadata. Enter the Ad Agency ID to be reported in the metadata file.

AssetId: User defined metadata. Enter the Asset ID to be reported in the metadata file.

BrandName: User defined metadata. Enter the Brand Name of the advertised item to be reported in the metadata file.

BrandId: User defined metadata. Enter the Brand ID to be reported in the metadata file.

ClientMediaName: User defined metadata. Enter the Client Media Name to be reported in the metadata file.

ClientId: User defined metadata. Enter the Client ID to be reported in the metadata file.

CommercialDistributor: User defined metadata. Enter the Commercial Distributor of the advertised item to be reported in the metadata file.

CommercialType: User defined metadata. Enter the Commercial Type to be reported in the metadata file.

Duration: Duration (in seconds) of the source media file. The duration can be extracted and assign to a variable by using an upstream Analysis action.

IntendedUse: User defined metadata. Enter the Intended Use to be reported in the metadata file.

LanguageTypePrimary: User defined metadata. Enter the Primary Language to be reported in the metadata file.

LanguageTypeSecondary: User defined metadata. Enter the Secondary Language to be reported in the metadata file.

Flip64 Action Configuration

If your workflow uses the Flip64 Encoder, you can set the Nielsen Watermarking configuration parameters as described here.
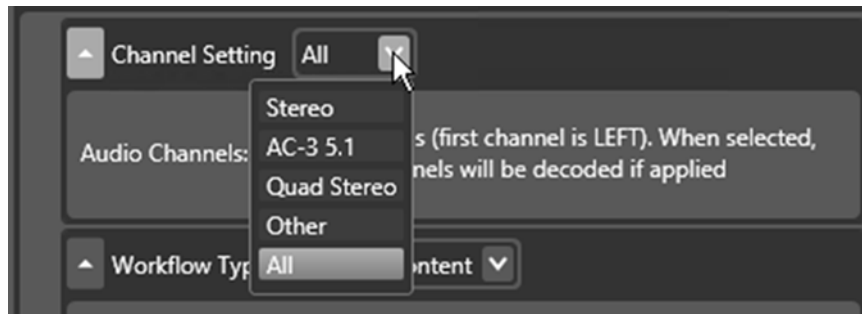
Adding the Nielsen Watermarking Filter

1. To add the Nielsen Watermarking Filter, select the Output Audio Track. The Audio Track drop down menu becomes active.

2. In the Stream: Audio menu on the right, select Nielsen Watermarking.

3. From within the Audio Stream presentation, select the Nielsen Watermarking controls to display the configuration groups (General, Channel Settings and Content Type) and associated configuration settings.

4. Enter all parameter settings as they apply to your desired workflow.
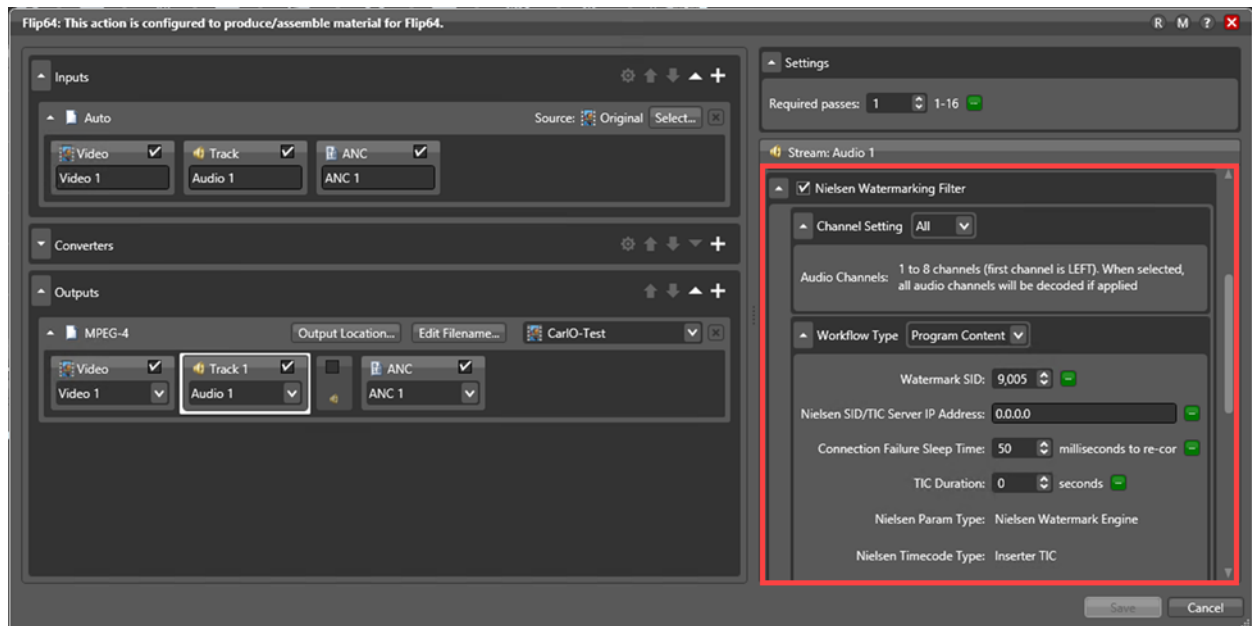
Channel Setting Group

The Channel Setting group contains the following configuration parameters.

Channel Setting: Select the type of audio you are watermarking.

- *Stereo*: Requires 2 channels—for example 1,2. If you are generating a signature file, channel 1 is used.
- *AC-3 5.1*: Requires either 5 or 6 channels (L, R, C, Ls, Rs) or (L, R, C, LFE, Ls, Rs). When selected, down mixed left and center channels will be decoded if applied.
- *Quad Stereo*: Requires 8 channels. When selected, left channel will be decoded if applied.'
- *Other*: 1 to 8 channels required. The first channel is LEFT. When selected, the left channel will be decoded if applied.
- *All*: 1 to 8 channels (first channel is LEFT). When selected, all audio channels will be decoded if applied.

Workflow Type Group

There are three types of watermarking available in the Flip64 encoder: Program Content (D4), Commercial Content, and RTVOD. Each has different configuration parameters as described here.

Workflow Type

The Workflow Type group contains the following configuration parameters.

Program Content (D4)

Watermark SID: Nielsen assigns one or more Source Identifiers (SID) to each content provider or distribution source. The SID uniquely identifies the distribution source and is included as a component of each watermark.

Nielsen SID/TIC Server IP Address: The IP address of the computer running the Nielsen licensing SID/TIC server system, which is required to run the Nielsen Watermarking. Contact Nielsen to obtain their licensing SID/TIC server system.

Connection Failure Sleep Time: Retry delay value (in milliseconds) for the connection to the Nielsen SID/TIC server. If a connection attempt fails, Vantage waits the prescribed time until it attempts another connection. Upon failing a second time, the transcode action aborts.

TIC Duration: Approximate duration (in seconds) of the source media file. The SID/TIC Server uses the duration to allocate the proper range of TICs. The duration can be extracted and assigned to a variable by using an upstream Analysis action.

Process Type: N2, NW, Both N2 and NW, CBET, or N2, NW and CBET

- N2—Nielsen Audio Encoder System II (also known as NAES2), the second-generation method of inserting an SID (Nielsen source identifier) and time stamp into a TV signal.

- NW—Nielsen Watermarks, a newer method of audio encoding that places an audio watermark in a lower frequency portion of the active program than does NAES II technology. Its lower-frequency position enables NW to be more robust and much less likely to be "compressed out" of the program audio by TV distribution.

- Both N2 and NW—Encodes both N2 and NW watermarks in the audio stream.

- CBET—Encodes Critical Band Encoding Technology (CBET) watermarks in the audio stream.

- N2, NW and CBET—Encodes N2, NW, and CBET watermarks in the audio stream.

CBET Source Id: You can enter the CBET ID in a hex format with the 0x prefix, such as 0x21234, or you can bind that field to a variable. This field should have a value if you have selected CBET or N2, NW and CBET as your process type.

EAS flag: If you select the option, the application checks for the existence of an Emergency Alert System (EAS) alert.

AssetId: The asset ID to be reported in the metadata file for the clip that is being encoded.

AssetName: The asset name to be reported in the metadata file for the clip that being encoded.

EpisodeId: The optional episode ID to be written to the feed-point metadata file.

HDContent: True or False; True if and only if content is high definition.

ApplicationName: Enter *Vantage*. This parameter will be written to the metadata file for the clip that is being encoded.

ApplicationVersion: Enter the Vantage version currently installed. This parameter will be written to the metadata file for the clip that is being encoded.

Decode and Signature: Check to generate signature files (DNA, PAS or both, depending on settings and content). Log files and decode files are also generated. These files are written to the specified Metadata/Logging Output Directory.

Metadata/Logging Output Directory: You have two choices. You can enter a File nickname or a File path.

- File nickname: Select a File nickname for a metadata attachment file. Vantage writes a ZIPPED file containing information about the transcode and the watermarked content (metadata, log, and signature output files) to a Vantage store (from the perspective of the Vantage domain server). The File nickname specifies the nickname to assign the zip file created as an attachment to the binder. Downstream file operation actions can access and operate on the file based on this nickname.

- File path: Enter or browse to select the directory path—usually a share—which is required if you have a distributed (multi-server) domain. Vantage requires write permission for this directory. You generate individual files if you select File path and not a zip file.

You can send the resulting files to Nielsen using the Nielsen secure delivery application.

Commercial Content (SpoTTrac)

Watermark SID. Nielsen assigns one or more SIDs (Source Identification) to each content provider or distribution source. The SID uniquely identifies the distribution source and is included as a component of each watermark.

Nielsen SID/TIC Server IP Address: The IP address of the computer running the Nielsen licensing SID/TIC server system, which is required to run the Nielsen Watermarking. Contact Nielsen in order to obtain their licensing SID/TIC server system.

Connection Failure Sleep Time: Retry delay value (in milliseconds) for the connection to the Nielsen SID/TIC server. If a connection attempt fails, Vantage waits the prescribed time until it attempts another connection. Upon failing a second time, the transcode action aborts.

TIC Duration: Duration (in seconds) of the source audio. The SID/TIC Server uses the duration to allocate the proper range of TICs. The duration can be extracted and assigned to a variable using an upstream Analysis action.

Process Type: N2HF, NWCC, N2HF and NWCC, or N2HF, NWCC and CBET.

- N2HF—Encodes the NAES 2 High Frequency (N2HF) watermark in the audio stream.
- NWCC—Encodes the Nielsen Watermark Commercial Code (NWCC) in the audio stream.
- N2HF and NWCC—Encodes both N2HF and NWCC watermarks in the audio stream.
- N2HF, NWCC and CBET—Encodes the N2HF, NWCC, and CBET watermarks in the audio stream.

EAS flag: If you select the option, the application checks for the existence of an Emergency Alert System (EAS) alert.

AdvertiserName: Enter the Advertiser's Name to be reported in the metadata file. User defined metadata.

AdvertiserID: User defined metadata. Enter the Advertiser's ID to be reported in the metadata file.

AgencyId: User defined metadata. Enter the Ad Agency's ID to be reported in the metadata file.

AgencyName: User defined metadata. Enter the Ad Agency's Name to be reported in the metadata file.

AssetId: User defined metadata. Enter the Asset ID to be reported in the metadata file.

BrandName: User defined metadata. Enter the Brand Name of the advertised item to be reported in the metadata file.

BrandId: User defined metadata. Enter the Brand ID of the advertised item to be reported in the metadata file.

ClientMediaName: User defined metadata. Enter the Client Media Name to be reported in the metadata file.

ClientId: User defined metadata. Enter the Client ID to be reported in the metadata file.

CommercialDistributor: User defined metadata. Enter the Commercial Distributor to be reported in the metadata file.

CommercialType: User defined metadata. Enter the Commercial Type to be reported in the metadata file.

Duration: Duration (in seconds) of the source media file. The duration can be extracted and assigned to a variable by using an upstream Analysis action.

IntendedUse: User defined metadata. Enter the Intended Use to be reported in the metadata file.

LanguageTypePrimary: User defined metadata. Enter the Primary Language to be reported in the metadata file.

LanguageTypeSecondary: User defined metadata. Enter the Secondary Language to be reported in the metadata file.

Decode and Signature: Check to generate signature files (DNA, PAS or both, depending on settings and content). Log files and decode files are also generated. These files are written to the specified Metadata/Logging Output Directory.

Metadata/Logging Output Directory: You have two choices. You can enter a File nickname or a File path.

- File nickname: Select a File nickname for a metadata attachment file. Vantage writes a ZIPPED file containing information about the transcode and the watermarked content (metadata, log, and signature output files) to a Vantage store (from the perspective of the Vantage domain server). The File nickname specifies the nickname to assign the zip file created as an attachment to the binder. Downstream file operation actions can access and operate on the file based on this nickname.

- File path: Enter or browse to select the directory path—usually a share—which is required if you have a distributed (multi-server) domain. Vantage requires write permission for this directory. You generate individual files if you select File path and not a zip file.

You should send the resulting ZIPPED file to Nielsen using FTP.

RT VOD Flag

Watermark Type: Select either C3 or C7 Nielsen rating system.

ADIFileName: If a Cable Labs ADI file is used to populate the Nielsen metadata, enter it here.

ClientName: User defined metadata. Enter the Client Name to be reported in the metadata file.

AssetId: The asset ID to be reported in the metadata file for the clip that is being encoded.

AssetName: The asset name to be reported in the metadata file for the clip that being encoded.

EpisodeId: The optional episode ID to be written to the feed-point metadata file.

Duration: Duration (in seconds) of the source media file. The duration can be extracted and assigned to a variable by using an upstream Analysis action.

Decode and Signature: Check to generate signature files (DNA, PAS or both, depending on settings and content). Log files and decode files are also generated. These files are written to the specified Metadata/Logging Output Directory.

Metadata/Logging Output Directory: You have two choices. You can enter a File nickname or a File path.

- File nickname: Select a File nickname for a metadata attachment file. Vantage writes a ZIPPED file containing information about the transcode and the watermarked content (metadata, log, and signature output files) to a Vantage store (from the perspective of the Vantage domain server). The File nickname specifies the nickname to assign the zip file created as an attachment to the binder. Downstream file operation actions can access and operate on the file based on this nickname.

- File path: Enter or browse to select the directory path—usually a share—which is required if you have a distributed (multi-server) domain. Vantage requires write permission for this directory. You generate individual files if you select File path and not a zip file.

The resulting ZIPPED file can be sent to Nielsen using the Nielsen secure delivery application.

IPTV VOD Action Configuration

Adding the Nielsen Watermarking Filter

To add the Nielsen Watermarking Filter to an IPTV VOD action, first add an Audio transcoder. Once the Audio transcoder has been added, select Nielsen Watermarking Filter from the selection panel on the right.

The Nielsen Watermarking Filter contains two configuration groups: Channel Setting and Workflow Type. Configure each group's settings as required by your desired workflow.
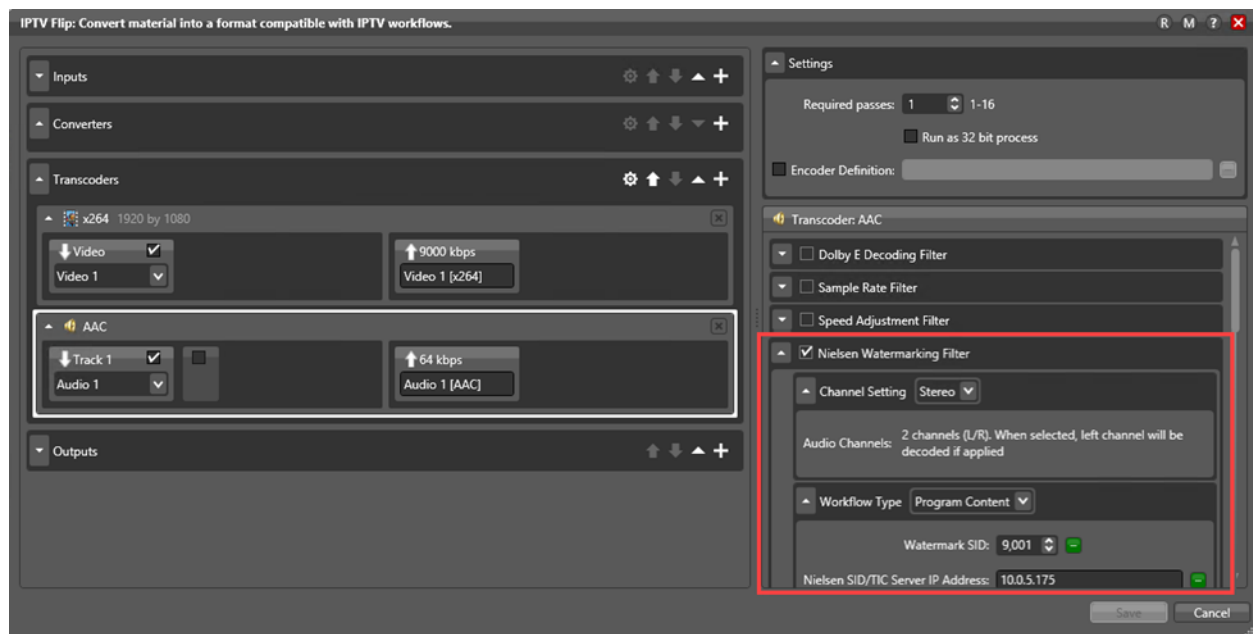
Channel Settings

Channel Setting: Select the type of audio you are watermarking.

- Stereo: Requires two channels - for example 1,2. If you are generating a signature file, channel 1 is used.

- AC-3 5.1: Requires either five or six channels. If you are generating a signature file, specify one channel number for LEFT (typically FRONT LEFT) and one for the CENTER channel. For example, 1,3, or 3,4. These two channels are mixed and used.

- Quad Stereo: Requires eight channels. If you are generating a signature file, specify one channel number for LEFT (typically FRONT LEFT) and one for the CENTER channel. For example, 1,3, or 3,4. These two channels are mixed and used.

- Other: One to eight channels required. The first channel in the list is used.
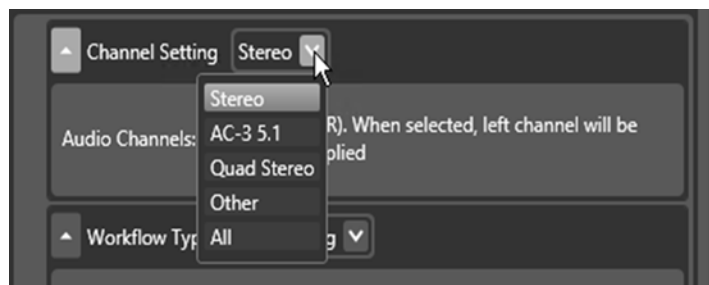
Workflow Type Group

There are three types of watermarking available in the IPTV VOD encoder: Program Content (D4), Commercial Content, or RTVOD. Each has different configuration parameters as described here.

Program Content (D4)

Watermark SID: Nielsen assigns one or more Source Identifiers (SID) to each content provider or distribution source. The SID uniquely identifies the distribution source and is included as a component of each watermark.

Nielsen SID/TIC Server IP Address: The IP address of the computer running the Nielsen licensing SID/TIC server system, which is required to run the Nielsen Watermarking. Contact Nielsen to obtain their licensing SID/TIC server system.

Connection Failure Sleep Time: Retry delay value (in milliseconds) for the connection to the Nielsen SID/TIC server. If a connection attempt fails, Vantage waits the prescribed time until it attempts another connection. Upon failing a second time, the transcode action aborts.

TIC Duration: Approximate duration (in seconds) of the source media file. The SID/TIC Server uses the duration to allocate the proper range of TICs. The duration can be extracted and assigned to a variable by using an upstream Analysis action.

Process Type: N2, NW, or Both

- N2—Nielsen Audio Encoder System II (also known as NAES2), the second-generation method of inserting an SID (Nielsen source identifier) and time stamp into a TV signal.

- NW—Nielsen Watermarks, a newer method of audio encoding that places an audio watermark in a lower frequency portion of the active program than does NAES II technology. Its lower-frequency position enables NW to be more robust and much less likely to be "compressed out" of the program audio by TV distribution.

- Both—Encodes both N2 and NW watermarks in the audio stream.

DsrcId: Distribution Source ID.

DsrcName: Distribution Source Name.

AssetId: The asset ID to be reported in the metadata file for the clip that is being encoded.

AssetName: The asset name to be reported in the metadata file for the clip that being encoded.

EpisodeId: The optional episode ID to be written to the feed-point metadata file.

HDContent: True or False; True if and only if content is high definition.

ApplicationName: Enter *Vantage*. This parameter will be written to the metadata file for the clip that is being encoded.

ApplicationVersion: Enter the Vantage version currently installed. This parameter will be written to the metadata file for the clip that is being encoded.

Decode and Signature: Check to generate signature files (DNA, PAS or both, depending on settings and content). Log files and decode files are also generated. These files are written to the specified Metadata/Logging Output Directory.

Metadata/Logging Output Directory: You have two choices. You can enter a File nickname or a File path.

- File nickname: Select a File nickname for a metadata attachment file. Vantage writes a ZIPPED file containing information about the transcode and the watermarked content (metadata, log, and signature output files) to a Vantage store (from the perspective of the Vantage domain server). The File nickname specifies the nickname to assign the zip file created as an attachment to the binder. Downstream file operation actions can access and operate on the file based on this nickname.

- File path: Enter or browse to select the directory path—usually a share—which is required if you have a distributed (multi-server) domain. Vantage requires write permission for this directory. You generate individual files if you select File path and not a zip file.

You can send the resulting files to Nielsen using the Nielsen secure delivery application.

Commercial Content (SpoTTrac)

Watermark SID. Nielsen assigns one or more SIDs (Source Identification) to each content provider or distribution source. The SID uniquely identifies the distribution source and is included as a component of each watermark.

Nielsen SID/TIC Server IP Address: The IP address of the computer running the Nielsen licensing SID/TIC server system, which is required to run the Nielsen Watermarking. Contact Nielsen in order to obtain their licensing SID/TIC server system.

Connection Failure Sleep Time: Retry delay value (in milliseconds) for the connection to the Nielsen SID/TIC server. If a connection attempt fails, Vantage waits the prescribed time until it attempts another connection. Upon failing a second time, the transcode action aborts.

TIC Duration: Duration (in seconds) of the source audio. The SID/TIC Server uses the duration to allocate the proper range of TICs. The duration can be extracted and assigned to a variable using an upstream Analysis action.

Process Type: NWCC, N2HF, or Both.

- NWCC—Nielsen Watermark Commercial Code.
- N2HF—NAES 2 High Frequency
- Both—Encodes both NWCC and N2HF watermarks in the audio stream.

AdvertiserName: Enter the Advertiser's Name to be reported in the metadata file. User defined metadata.

AdvertiserID: User defined metadata. Enter the Advertiser's ID to be reported in the metadata file.

AgencyId: User defined metadata. Enter the Ad Agency's ID to be reported in the metadata file.

AgencyName: User defined metadata. Enter the Ad Agency's Name to be reported in the metadata file.

AssetId: User defined metadata. Enter the Asset ID to be reported in the metadata file.

BrandName: User defined metadata. Enter the Brand Name of the advertised item to be reported in the metadata file.

BrandId: User defined metadata. Enter the Brand ID of the advertised item to be reported in the metadata file.

ClientMediaName: User defined metadata. Enter the Client Media Name to be reported in the metadata file.

ClientId: User defined metadata. Enter the Client ID to be reported in the metadata file.

CommercialDistributor: User defined metadata. Enter the Commercial Distributor to be reported in the metadata file.

CommercialType: User defined metadata. Enter the Commercial Type to be reported in the metadata file.

Duration: Duration (in seconds) of the source media file. The duration can be extracted and assigned to a variable by using an upstream Analysis action.

IntendedUse: User defined metadata. Enter the Intended Use to be reported in the metadata file.

LanguageTypePrimary: User defined metadata. Enter the Primary Language to be reported in the metadata file.

LanguageTypeSecondary: User defined metadata. Enter the Secondary Language to be reported in the metadata file.

Decode and Signature: Check to generate signature files (DNA, PAS or both, depending on settings and content). Log files and decode files are also generated. These files are written to the specified Metadata/Logging Output Directory.

Metadata/Logging Output Directory: You have two choices. You can enter a File nickname or a File path.

- File nickname: Select a File nickname for a metadata attachment file. Vantage writes a ZIPPED file containing information about the transcode and the watermarked content (metadata, log, and signature output files) to a Vantage store (from the perspective of the Vantage domain server). The File nickname specifies the nickname to assign the zip file created as an attachment to the binder. Downstream file operation actions can access and operate on the file based on this nickname.

- File path: Enter or browse to select the directory path—usually a share—which is required if you have a distributed (multi-server) domain. Vantage requires write permission for this directory. You generate individual files if you select File path and not a zip file.

You should send the resulting ZIPPED file to Nielsen using FTP.

RT VOD Flag

Watermark Type: Select either C3 or C7 Nielsen rating system.

ADIFileName: If a Cable Labs ADI file is used to populate the Nielsen metadata, enter it here.

ClientName: User defined metadata. Enter the Client Name to be reported in the metadata file.

AssetId: The asset ID to be reported in the metadata file for the clip that is being encoded.

AssetName: The asset name to be reported in the metadata file for the clip that being encoded.

EpisodeId: The optional episode ID to be written to the feed-point metadata file.

Duration: Duration (in seconds) of the source media file. The duration can be extracted and assigned to a variable by using an upstream Analysis action.

Decode and Signature: Check to generate signature files (DNA, PAS or both, depending on settings and content). Log files and decode files are also generated. These files are written to the specified Metadata/Logging Output Directory.

Metadata/Logging Output Directory: You have two choices. You can enter a File nickname or a File path.

- File nickname: Select a File nickname for a metadata attachment file. Vantage writes a ZIPPED file containing information about the transcode and the watermarked content (metadata, log, and signature output files) to a fully qualified directory (from the perspective of the Vantage domain server). The File nickname specifies the nickname to assign the zip file created as an attachment to the binder. Downstream file operation actions can access and operate on the file based on this nickname.

- File path: Enter or browse to select the directory path—usually a share—which is required if you have a distributed (multi-server) domain. Vantage requires write permission for this directory. You generate individual files if you select File path and not a zip file.

The resulting ZIPPED file can be sent to Nielsen using the Nielsen secure delivery application.

Multiscreen Encoder Configuration

The Multiscreen encoder converts Nielsen Watermarking codes into ID3 metadata tags within the Adaptive Bitrate HLS output files.

The Nielsen ID3 filter processes files that have existing Nielsen audio watermarks embedded in the audio bitstream and converts the embedded watermarks to ID3 metadata tags on the output AAC audio track, for use by downstream Adaptive Bit-Rate Players which support reading Nielsen metadata.
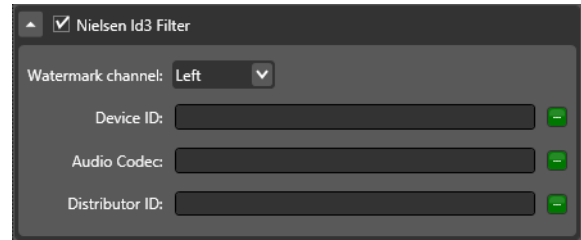
Adding the Nielsen ID3 Filter

To add the Nielsen ID3 Filter to a Multiscreen encoder action:

1. Add an AAC Audio transcoder in the Transcoder section.

2. Select Nielsen ID3 Filter from the selection panel on the right.

3. From the Watermark channel drop down list, select the channel to examine for the Nielsen watermarks.

Then specify the Device ID, which is the device that hosts the server software; specify the Audio Codec; and specify the Distributor ID (a multichannel video programming distributor or content distribution network). You can also bind a variable to any of these selections.

Example #1 - Program Content - C3/C7 RTVOD

You create C3/C7 VOD media by capturing the Linear Broadcast's baseband signal into the file format required for VOD delivery. A baseband capture device, such as a VTR or digital capture encoder or Telestream's Lightspeed Live Capture system, is used to create Program Content C3/C7 VOD media files for VOD distribution. This applies credit for viewing the VOD program within the C3/C7 time window.

The combination of Lightspeed Live Capture and Vantage is the ideal solution for customers who are airing Linear Broadcast content. This combination captures the watermarked baseband feed (after Nielsen embedding—see the diagram presented later in this document) and transcodes it on-the-fly as the broadcast is ongoing. When the broadcast ends, an encoded VOD media file containing C3/C7 codes and RTVOD flag is delivered to the distribution partner, along with all the respective Nielsen metadata, just seconds after the broadcast is complete. Supporting both baseband SDI and file-based Vantage workflows makes for a highly flexible, cost-effective solution.

The RTVOD flags can also be added to Program Content (C3/C7 VOD) media files previously captured from the linear broadcast baseband signal, then repurposed for IPTV VOD distribution.

The combination of a Lightspeed Live Capture system and Vantage can be used to capture and create Program Content C3/C7 VOD media files and add the RTVOD flag in parallel.

Example #1 - Program Content - C3/C7 RTVOD **Page 23**

IPTV VOD C3/C7 with RTVOD Workflow

There are multiple ways to implement this workflow depending on how the initial C3/C7 watermarking was applied. In this example a watermarked SDI stream is captured using a Lightspeed Live Capture encoder and Capture (or Watch) action into a TIFO container. The TIFO file is immediately processed by Vantage concurrently while capturing the linear broadcast. The Vantage workflow produces a watermarked VOD file containing RTVOD flags just moments after the linear broadcast has ended.

Vantage IPTV RTVOD workflow
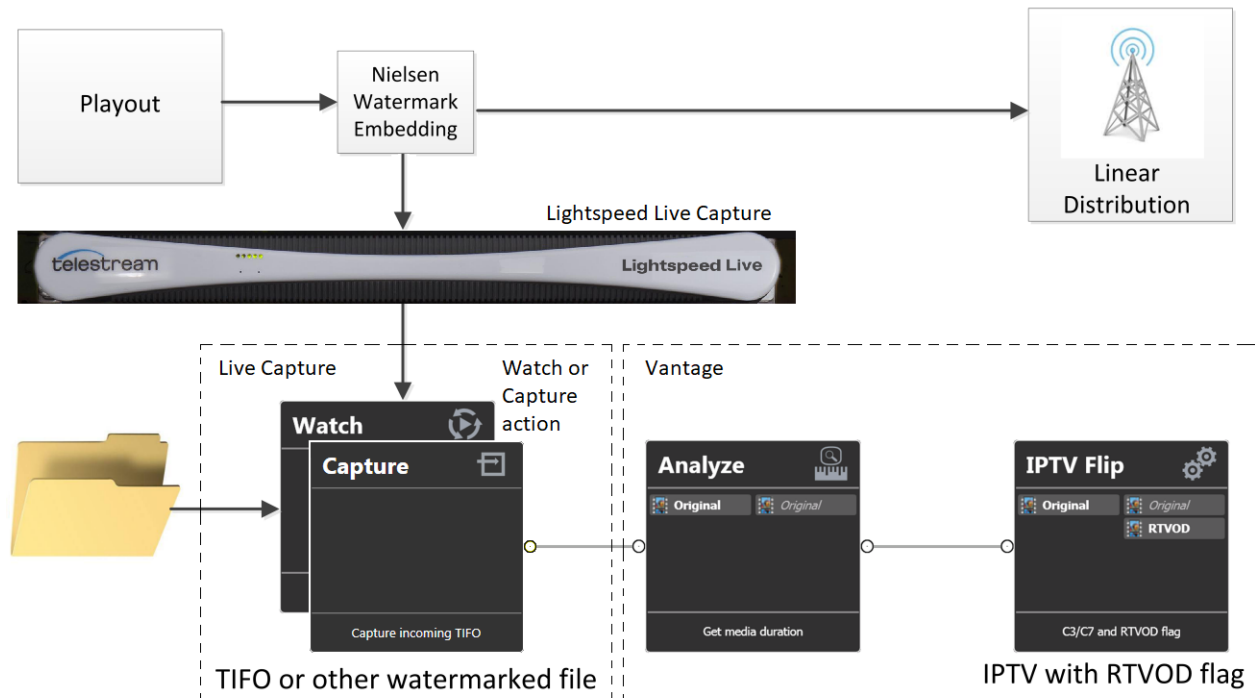
Lightspeed Live Capture Setup

The Lightspeed Live Capture encoder's SDI input is connected to an SDI signal that contains the Nielsen watermarking codes. Lightspeed captures the SDI signal into an appropriate codec wrapped in a TIFO container. The TIFO file is submitted to Vantage, allowing the growing TIFO file to be processed through Vantage while capturing of the broadcast is ongoing.

Vantage Workflow

The Vantage workflow accepts the file via a Capture, Receive, or Watch action. The incoming media is Analyzed in order to populate a Duration variable. The Duration variable is passed on to the IPTV VOD action where it populates a Duration parameter within the Nielsen Watermarking Filter.

The IPTV VOD action produces a VOD file containing C3/C7 watermarking codes plus RTVOD flags, and all appropriate metadata files.

Example #1 - Program Content - C3/C7 RTVOD   **Page 24**

Example #2 - Program Content (D4 VOD)

The availability of non-traditional viewing of Program content beyond the C3/C7 time window is increasing rapidly. Nearly every home now has a Set Top Box (STB) containing a DVR which allows for delayed, time-shifted and VOD viewing. The addition of this type of watermarking (D4) allows for these programs to be delivered through STBs while allowing for continued audience viewer monitoring beyond the C3/C7 window.

After the C3/C7 time window, Program Content (C3/C7 VOD) media files are replaced with Program Content (D4 VOD) media files. This watermarking can be done by capturing a clean baseband feed of the program or within a file-based workflow using media files that do not contain any audio watermarking.

Note: Program Content (D4 VOD) watermarking must be applied to clean non-watermarked content files.

The combination of a Lightspeed Live Capture and Vantage can capture a clean (non-watermarked) version of the program (with or without ads), to create Program Content D4 VOD media files. This workflow can also be achieved with clean media files captured by other types of capture devices.

Vantage allows for an easy SDI/file-based application of D4 VOD watermarking, which can be coupled with VOD Producer DAI for the complete system. Supporting both baseband SDI and file-based workflows makes for a higher degree of flexibility, which gives Vantage an advantage over other competitive offerings.

Vantage IPTV D4 workflow

**Example #2 - Program Content (D4 VOD)**   **Page 25**
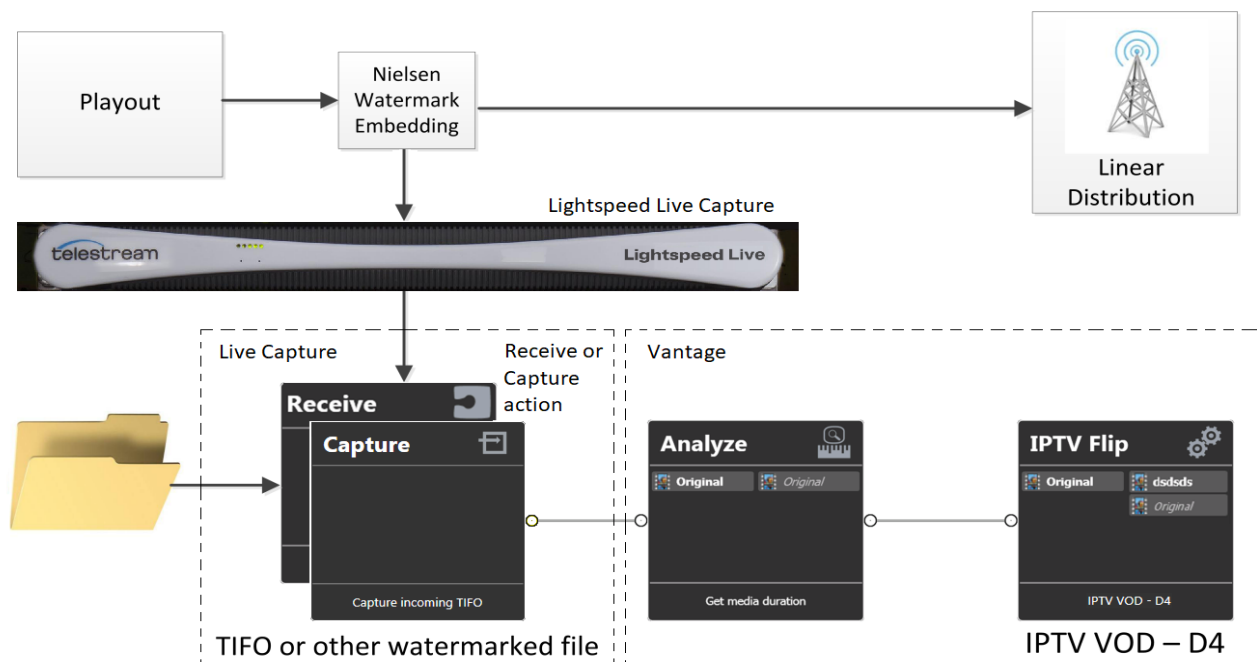
Example #3 - Commercial Ad Content (SpoTTrac)

Commercial (Advertisements) are tracked separately from the Program content. Nielsen watermarking for commercial spots, commonly known as "SpoTTrac", is embedded in commercial spot media within file-based workflows prior to being delivered to a commercial ad distribution server.

Vantage can be used to add an audio watermark that is used by Nielsen to monitor the broadcast of Ad content and report to the content owner when and where the content was broadcast. Use Vantage to embed commercial watermarking into the commercial advertisement files prior to delivering them to a commercial distribution server. Both SDI/Tape and file-based workflows are supported. This type of watermarking is also known as Nielsen "SpoTTrac".

Vantage allows for an easy file-based application of Commercial Ads Content watermarking, which can be coupled with VOD Producer DAI for the complete system. Used with Lightspeed Live Capture, this solution can ingest tape-based material and process it through Vantage rapidly for immediate delivery.

**Example #3 - Commercial Ad Content (SpoTTrac)**   Page 26
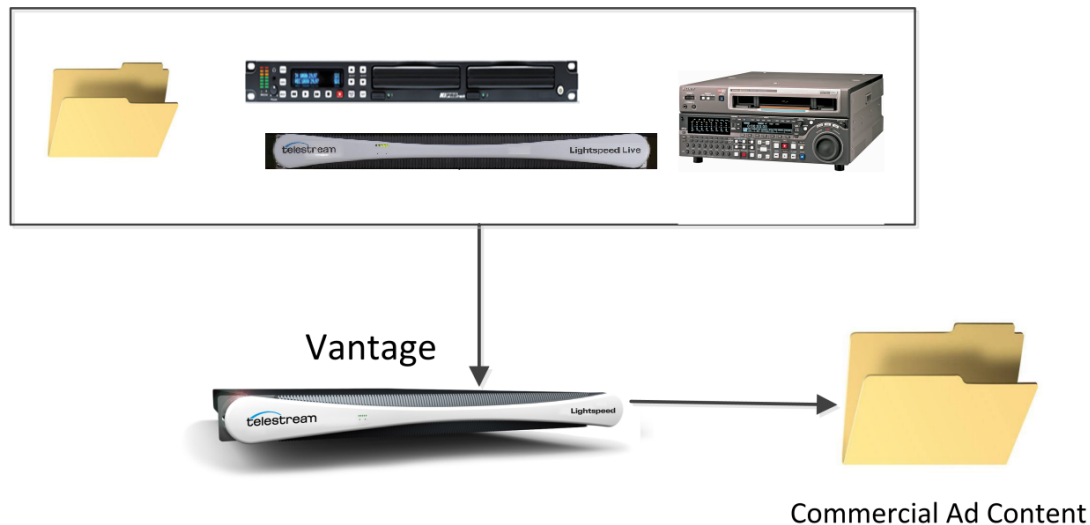
Example #4 - Convert Watermarks into ID3 Metadata for HLS

When creating content for Adaptive Bitrate HTTP Live Streaming (HLS) delivery, Nielsen uses ID3 metadata tags embedded in the HLS stream to monitor audience.

Vantage Transcode Multiscreen can be used with media files that already contain Nielsen audio watermarks. Vantage converts the existing watermarks into ID3 metadata tags embedded in the HLS stream output.

The combination of Lightspeed Live Capture and Vantage is the ideal solution for customers who are creating Adaptive Bit-Rate HLS content. This combination can capture a watermarked baseband feed (after Nielsen embedding) and transcode it on the fly, converting the embedded watermarks to ID3 tags and then delivering the HLS media packages, including all the respective Nielsen metadata just seconds after the broadcast is done. Supporting both baseband SDI and file-based workflows makes for a highly flexible, cost-effective solution.
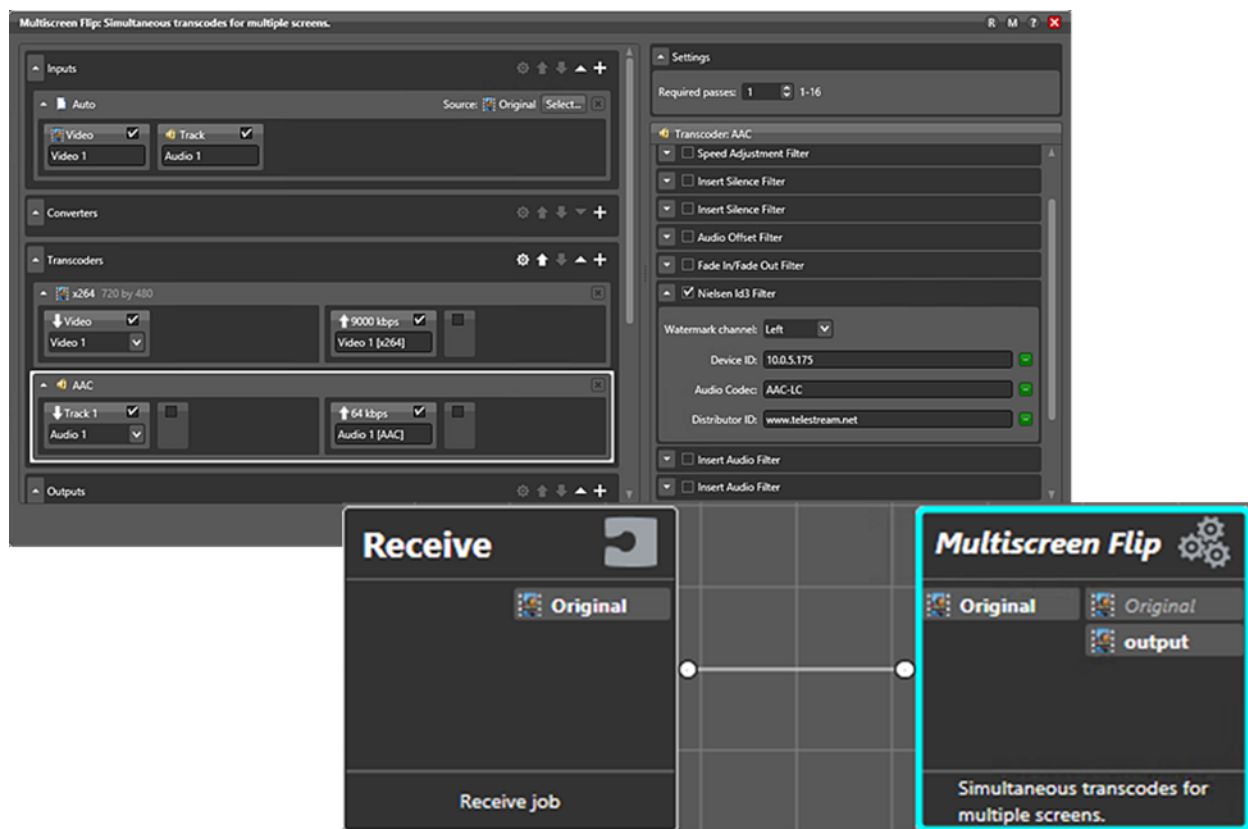
Copyright and Trademark Notice