

# PROJECT

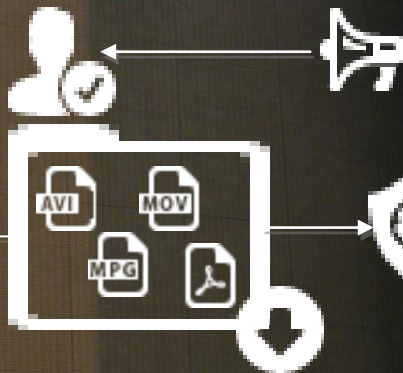
**Etere**  
a consistent system

## VTV:

An enterprise workflow-based archive management system



February 2014



VTV ARCHIVE



VTV USERS

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## ▼ 1. INTRODUCTION

**VTV**, Vietnam Television, the national broadcaster of Vietnam is the only nation-wide TV in Vietnam. It was formed on September 7th, Vietnam Television became an official name on April 30th 1987 and since then it's also become the national television.

In last years, **ETERE** has accompanied **VTV** across its various system expansions; supporting with an extreme modularity the integration of all the new modules and equipment into the global system workflow without interfering with the overall project. At present, **Etere** has a strong relationship with **VTV**, based on years of management of the **VTV's** nine channels playout by using an **Etere** system, a choice that has permitted **VTV** to achieve an operative efficiency while meeting audience's quality expectations.

The **Etere MERP** approach on which the proposed solution is based will provide **VTV** with a rock-solid archive system able to integrate all the enterprise features required for the management of assets and resources.

**Etere's** file-based workflow technology will provide **VTV** with an efficient media management system able to allow the company to take a step forward towards a fully digital management of assets. **VTV** will be mainly provided with the following key features:

- A distributed architecture managed via workflow to avoid any single point of failure
- Seamless integration with existing and co-existing systems
- High preservation and high availability of archived and catalogued media content
- Safe and fully-tracked access to the content archive
- Enterprise transport and transformation of media between storage devices
- Quality control to ensure the reliability of archived assets over short and long terms
- Editing interface with preview, slow-motion, timecode, bookmarking and metadata
- Full integration support for NLE systems including content delivery
- Fast and efficient transferring connection between internal –and external- systems
- Real-time monitoring of the modules and equipment integrated within the global system

This paper is aimed to describe the Etere-based solution that will enable **VTV** to render the interaction between the **archive** and its **users** more secure, highly efficient, extremely timely, consistently reliable and very easy to use.

## ▼ 2. OVERVIEW

**VTV** has requested a file-based tapeless solution for the management of the media content used across all its regional stations. The proposed solution will be relied on a **workflow-based framework** able to cover the end-to-end archive management including the following operations:



The Etere-based system will comprise media ingest, archive, management and distribution solution combining powerful modules with an easy to use interfaces, this solution will permit to straightly connect content captured by Etere Ingest with Etere MAM to view and catalog video assets before archiving them. Etere MAM will be the core of the overall system, a streamlined tapeless environment able to provide all workflow features needed to capture, edit, catalog and retrieve content efficiently.

Following chapters will explain how to the solution proposed by **ETERE** meets all the specifications required by **VTV**, which have been summarized in the following key features:

Requested feature	Related chapter in this document
<b>Lightbox area</b> (e.g. light box material, download requests, approval workflow)	<b>3.1</b>
<b>Workflow-based management</b> (e.g. material storage, data exploitation, asset code update)	<b>3.2</b>
<b>Role-based access control</b> (e.g. permission groups, group managers)	<b>3.3</b>
<b>Metadata cataloguing</b> (e.g. mandatory SMPTE fields)	<b>3.4</b>
<b>Search engine</b> (e.g. restricted searches, search for multiple persons in charge)	<b>3.5</b>
<b>Operations history</b> (e.g. asset EDL operations)	<b>3.6</b>

## ▼ 3. FEATURES

ETERE offers a wide set of features integrated under an enterprise workflow-based framework able to optimize the entire life cycle of your assets, reduce operating costs and facilitate overall control.

### ▼ 3.1. Lightbox Area

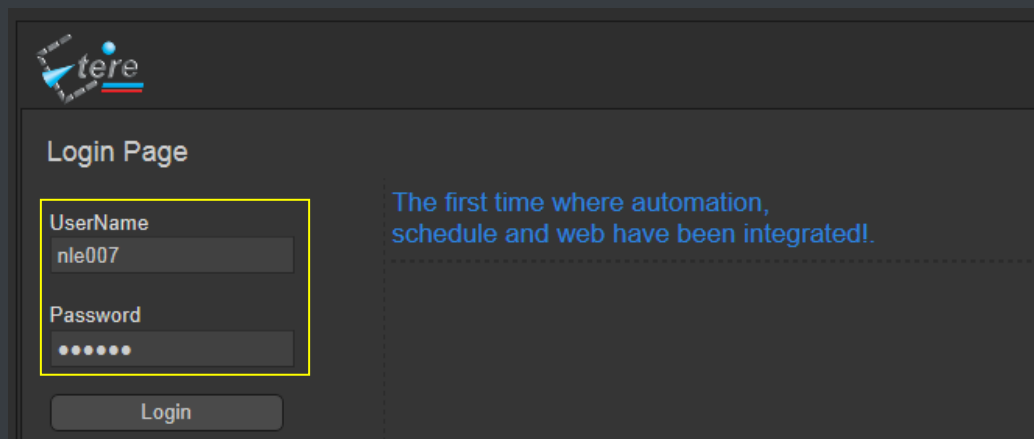
**EtereWeb** is a web-based solution for integrating a station with external users (e.g. NLE systems), it provides an authentication web portal for managing media contents through a user-friendly interface. **EtereWeb** web service supports all major browsers including Microsoft Internet Explorer, Mozilla Firefox and Apple Safari; thus ensuring the reliability and quality of the service.

**EtereWeb** allow sharing the right files to the right persons with the right permission levels; this capability is based on granting/denying function-specific permissions through **Etere Resources Management**, the module that allows web users to request temporary download permissions.

**Etere** allows authenticated users to browse the media content of the archive and request to download all their required material. The request procedure is described in the steps below:

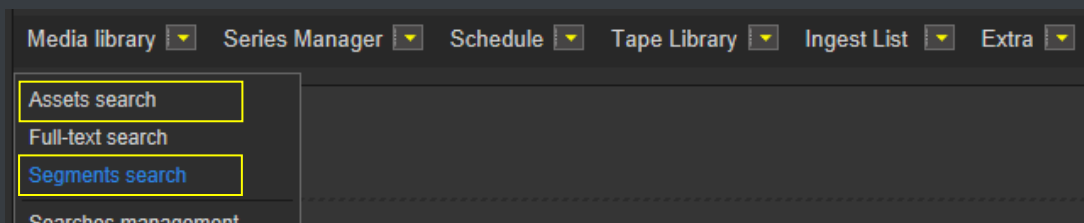
#### 3.2.1 LOGIN

In order to ensure that only authorized persons access the web service, **EtereWeb** counts with an encrypted authentication method on which users must count with a username and password in order to enter the web portal:

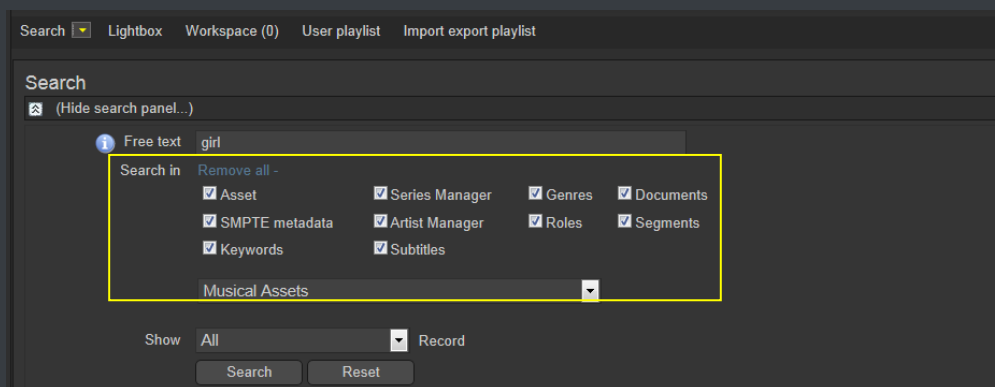


#### 3.2.2 SEARCH

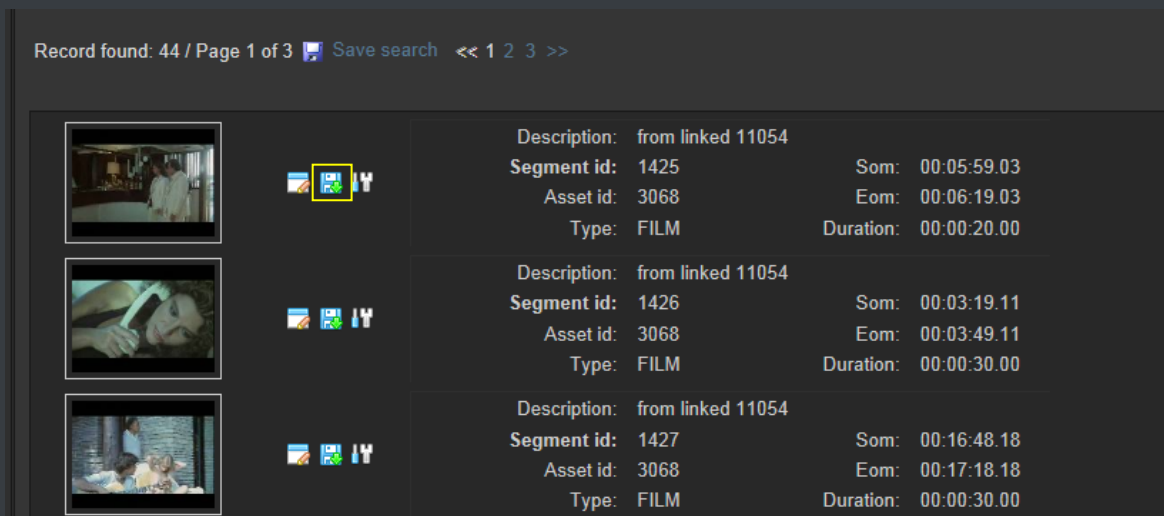
Once authenticated, users can start searching for archived material (**assets** and **segments**) to be added to their **Lightbox**:



The **robust search engine** will allow them searching for materials (assets and segments) through a wide set of **filters**:



Retrieved **material** (assets and segments) matching the filter criteria will be displayed including a thumbnail. A quick function will allow adding material to the Lightbox:

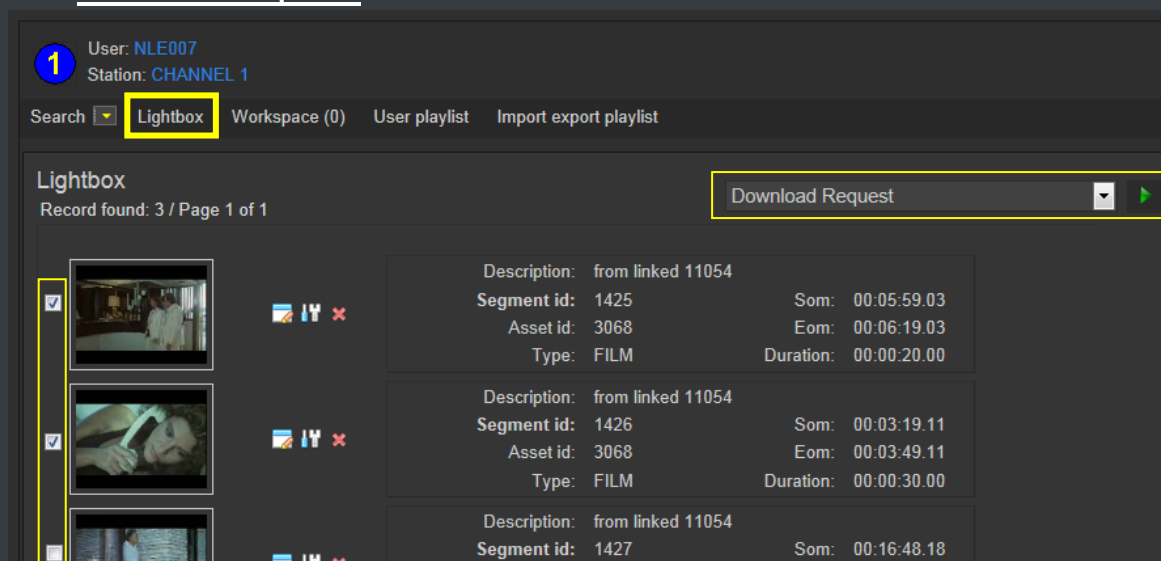


The user can continue adding to his Lightbox so many **materials** (assets and segments) as needed.

### 3.2.3 LIGHTBOX

#### Request

Under their **Lightbox**, users can view all the assets that “they wish to have”. In order to request the download of assets they only need to select (tick off) the needed material and press the “**Download request**” button:



A popup form will ask the user to compile a "request form":

1 User: NLE007  
Station: CHANNEL 1

Search [v] Lightbox Workspace (0) User playlist Import export playlist

VTV logo | The request ticket title

User name: *First name Last name (Take it from Etere system)*

Department: *Department name (Take it from Etere system)*

Project Title: *Text box for user typing*

Descriptions of Request: *User will type some content that is a reason to download media from VTV Archive.*

Purpose: *User type an purpose*

List of clips (segments or master clip) is requested:

Item	ID	Title	Type	Q'ty	Unit	Notes
		(Following the selection from	(Multi			

		searching procedure)	choice)			
1	100	Video 1	AVI			
2	102	Video 2	MXF			
3	204	Video 4	AVI			

Current time: *Following the system time*

Time (User hope can get the file): *User put it here*

[Send Button](#) [Send Later Button](#)

Pressing the "send button" the request will be saved and immediately applied for approval. Instead, pressing the "send later" button will save the request form for future compilation and appliance.

## My Requests

Under the "My Requests" tab, users can check the status of their requests:

1
User: NLE007  
Station: CHANNEL 1

Search ▾ Lightbox Workspace (0) User playlist Import export playlist **My Requests**




List of Request tickets




Name of request ticket:

String box for searching

[Search Button](#)

Item	Name of Tickets	Status
1	The request ticket is create on 10/02/2014	
2	The request ticket is create on 05/02/2014	

3	The request ticket is create on 02/02/2014	
4	The request ticket is create on 16/01/2014	
5	The request ticket is create on 10/01/2014	

Notes: Status     Denied;     Approved;     Waiting)

Clicking on a **single request** will allow viewing the items contained on it:

1

User: NLE007  
Station: CHANNEL 1

Search

Lightbox

Workspace (0)

User playlist

Import export playlist













My Requests

List of tickets of own user

Name of request ticket:

String box for searching

Search Button

Item	Name of Tickets	Status	Approve of User department manager (the first censor)	Approve of Manager of VTV Archive (Second Censor)	Status
1	The request ticket is create on 10/02/2014				
2	The request ticket is create on 05/02/2014				
3	The request ticket is create on 02/02/2014				

4	The request ticket is create on 16/01/2014					
5	The request ticket is create on 10/01/2014					

Notes: - Status (  Not sent yet;  Sent)

- Approve (  Denied;  Approved)

### 3.2.5 APPROVAL

Once the request is applied, the **"request" workflow** is automatically triggered, said workflow consist of the following censor tasks:

#### First censor

The **User Department Manager** will receive an email informing him about the arrival of a new request:

<b>From:</b>	notifications@mystation.tv [system-profile email account]
<b>To:</b>	first_supervisor@ mystation.tv [personal-data email account]
<b>Subject:</b>	Web request: download metafile [request type]
<b>Body:</b>	<p>Requester: John Smith [name of the requester]</p> <p>Web request: Download metafile [personal-data code]</p> <p>Asset code: 22 [code of the requested asset]</p> <p>Asset tile: Bee-Beer spot 2012 [description of the requested asset]</p> <p>Codec: MXF [media codec requested for download]</p> <p>This system has been automatically delivered by Etere. [email additional text]</p>

Incoming requests can be evaluated to decide one-by-one which files can be downloaded:

Requester	Devil's Agency	Request	Download metafile	Codec	WMV
Notes				Response	Request accepted

VTV logo | The request ticket title

User name: *First name Last name (Take it from Etere system)*

Department: *Department name (Take it from Etere system)*

Project Title: *Text box for user typing*

Descriptions of Request: *User will type some content that is a reason to download media from VTV Archive.*

Purpose: *User type an purpose*

List of clips (segments or master clip) is requested:

Item	ID	Title  (Following the selection from searching procedure)	Type  (Multi choice)	Q'ty	Unit	Approve
1	100	Video 1	AVI	1	Asset	<input checked="" type="checkbox"/>
2	102	Video 2	MXF	1	Segment	<input checked="" type="checkbox"/>
3	204	Video 4	AVI	1	Segment	<input type="checkbox"/>

Register time:

Time of issue

Notes

Some notes is written down from the first censor here like a comment

Update Button

Back Button

## Second censor

The **VTV Archive Manager** will receive an email informing him about the arrival of a new request. As in the first censor, incoming requests can be evaluated to decide which files **(among the already approved by 1st censor)** can be downloaded.

**Note:** Only requests approved by the first censor will be available here, rejected requests are left denied.

## Download permissions

Approved requests will be displayed indicating the requester name, the granted codec and the expiry date until which the download will be available:

Hide temporary rights			
Requester	Request	Codec	Expiry date
Skywalker Luke	Download metafile	WMV	05/12/2124 15:18:50

### 3.2.6 DELIVERY

Once approved, all operations required to make **approved files** available to the requester will be performed. Operations include transcoding and transferring.

Finally, an email will be automatically sent to inform the requester about the result of the request:

<b>From:</b>	supervisor@mystation.tv [system-profile email account]
<b>To:</b>	wuser5@agency.com [personal-data email account]
<b>Subject:</b>	Web request: download metafile [request type]
<b>Body:</b>	<p><b>Web request:</b> Download metafile [personal-data code]</p> <p><b>Asset code:</b> 22 [code of the requested asset]</p> <p><b>Asset title:</b> Bee-Beer spot 2012 [description of the requested asset]</p> <p><b>Codec:</b> MXF [media codec requested for download]</p> <p><b>Response:</b> Request accepted [answer about the request approval/denial]</p> <p>This system has been automatically delivered by Etere. [email additional text]</p>

At this point, the user can access its **Lightbox** and download the approved files:

User: NLE007  
Station: CHANNEL 1

Search Lightbox Workspace (0) User playlist Import export playlist

**Lightbox**  
Record found: 3 / Page 1 of 1

Download Request

<input checked="" type="checkbox"/>			Description: from linked 11054 Segment id: 1425 Asset id: 3068 Type: FILM	Som: 00:05:59.03 Eom: 00:06:19.03 Duration: 00:00:20.00	
<input checked="" type="checkbox"/>			Description: from linked 11054 Segment id: 1426 Asset id: 3068 Type: FILM	Som: 00:03:19.11 Eom: 00:03:49.11 Duration: 00:00:30.00	
<input type="checkbox"/>			Description: from linked 11054 Segment id: 1427	Som: 00:16:48.18	

## ▼ 3.2. Workflow management

Etere's solution features an integrated and professional approach based on a workflow management to optimize the station's entire broadcasting system, reduce operating costs and facilitate overall process control. **Etere Workflow** permits modules to for example, seek confirmation for sensitive process, follow specific rules, enhance the efficiency and reliability of process, and manage multiple workflows to perform different tasks simultaneously and independently

A comprehensive and user-friendly workspace allows creating suitable workflows based on custom actions just by dragging and dropping the necessary elements into it. All workflows can be customized to fit the real needs of the station and thus give complete control over the overall system management which offers:

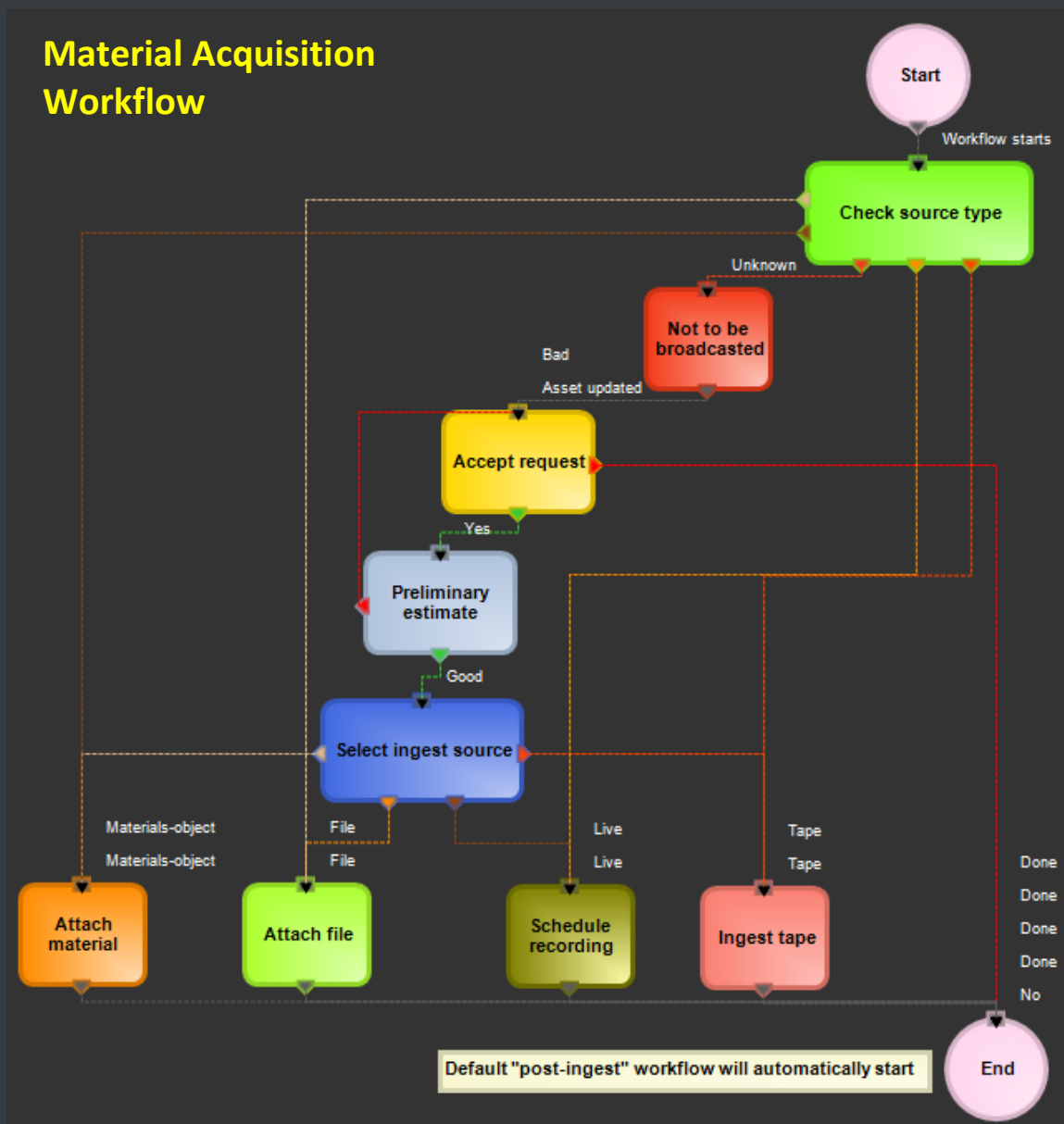
- Clear definition of each complex step of the broadcasting process,
- Visual representation of each step mapped out on a PC not in a paper document,
- Set of instructions and authorizations that must be followed in order to move forward,
- Complete log of all steps carried out, operations denied etc.

In this chapter will be detailed the following requested features:

- **VTV Material acquisition workflow**
- **VTV material retrieval workflow**
- **Common workflow actions**

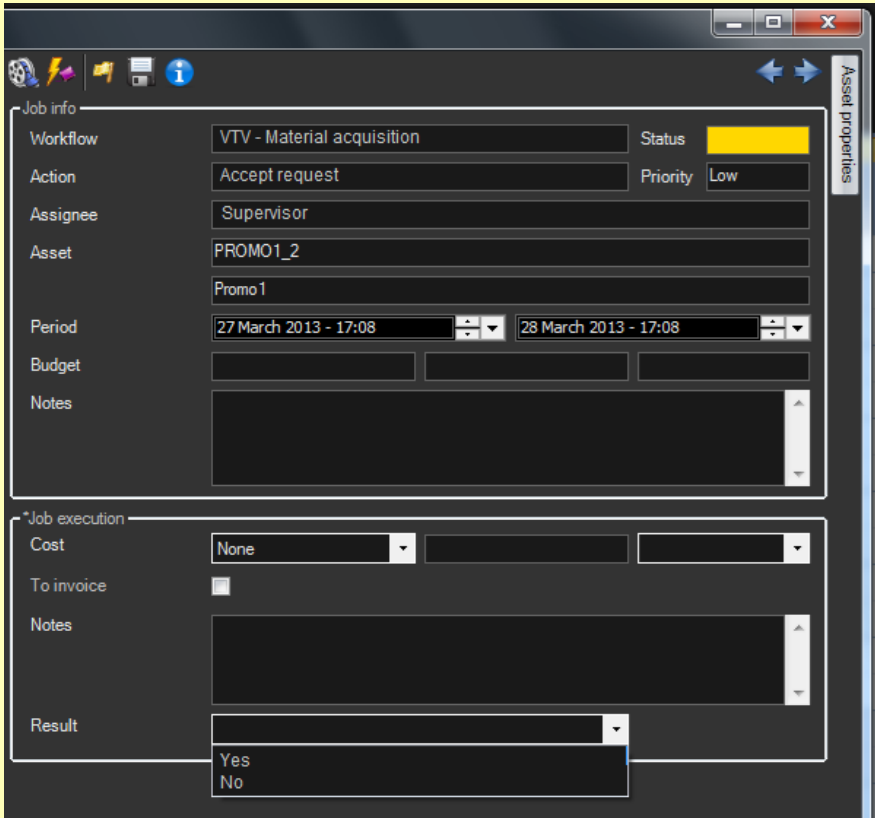
### ▼ 3.2.1. VTV material acquisition workflow

The proposed “**material acquisition workflow**” will automate the process of **storing** material thanks to the intelligent combination of *automatic system operations* with *manual user tasks*:



### Material acquisition workflow

1	Start	The <b>system</b> starts the execution of the “ <u>material acquisition</u> ” workflow, which automatically moves forward to <b>step 2</b>
---	-------	--

2	Check source type	<p>The <b>system</b> takes a specific action depending on the material's source type:</p> <table><tr><td>Unknown</td><td>The asset is not yet acquired. The workflow moves forward to <b>step 4</b></td></tr><tr><td>Materials object</td><td>The asset is already acquired but the QC has rejected. The workflow moves forward to <b>step 7</b></td></tr><tr><td>File</td><td>The asset is already acquired but the QC has rejected. The workflow moves forward to <b>step 8</b></td></tr><tr><td>Live</td><td>The asset is already acquired but the QC has rejected. The workflow moves forward to <b>step 9</b></td></tr><tr><td>Tape</td><td>The asset is already acquired but the QC has rejected. The workflow moves forward to <b>step 10</b></td></tr></table>	Unknown	The asset is not yet acquired. The workflow moves forward to <b>step 4</b>	Materials object	The asset is already acquired but the QC has rejected. The workflow moves forward to <b>step 7</b>	File	The asset is already acquired but the QC has rejected. The workflow moves forward to <b>step 8</b>	Live	The asset is already acquired but the QC has rejected. The workflow moves forward to <b>step 9</b>	Tape	The asset is already acquired but the QC has rejected. The workflow moves forward to <b>step 10</b>
Unknown	The asset is not yet acquired. The workflow moves forward to <b>step 4</b>											
Materials object	The asset is already acquired but the QC has rejected. The workflow moves forward to <b>step 7</b>											
File	The asset is already acquired but the QC has rejected. The workflow moves forward to <b>step 8</b>											
Live	The asset is already acquired but the QC has rejected. The workflow moves forward to <b>step 9</b>											
Tape	The asset is already acquired but the QC has rejected. The workflow moves forward to <b>step 10</b>											
3	Not to be broadcasted	<p>The <b>system</b> flags the asset as “not to be broadcasted” to prevent its use before its acquisition and control. The workflow moves forward to <b>step 4</b></p>										
4	Accept request	<p>The <b>supervisor</b> receives a task to approve/reject the acquisition request:</p> <div></div> <table><tr><td>Yes</td><td>The acquisition is approved, the workflow moves forward to <b>step 5</b></td></tr><tr><td>No</td><td>The acquisition is denied, the workflow moves forward to <b>step 11</b></td></tr></table>	Yes	The acquisition is approved, the workflow moves forward to <b>step 5</b>	No	The acquisition is denied, the workflow moves forward to <b>step 11</b>						
Yes	The acquisition is approved, the workflow moves forward to <b>step 5</b>											
No	The acquisition is denied, the workflow moves forward to <b>step 11</b>											

5

Preliminary estimate

The **ingest manager** receives a task to determine if the acquisition is feasible:

Yes

The acquisition can be performed  
The workflow moves back to **step 4**

No

The acquisition cannot be performed (e.g. servers are out of order, etc.)  
The workflow moves back to **step 4**

6

Select ingest source

The **ingest manager** workflow takes a decision based on whether files exist or not in the **Archive** metadvice:

Materials object

The workflow moves forward to **step 7**

File

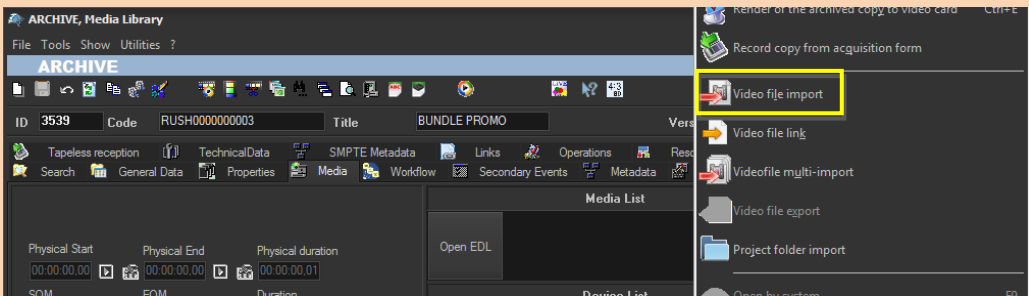
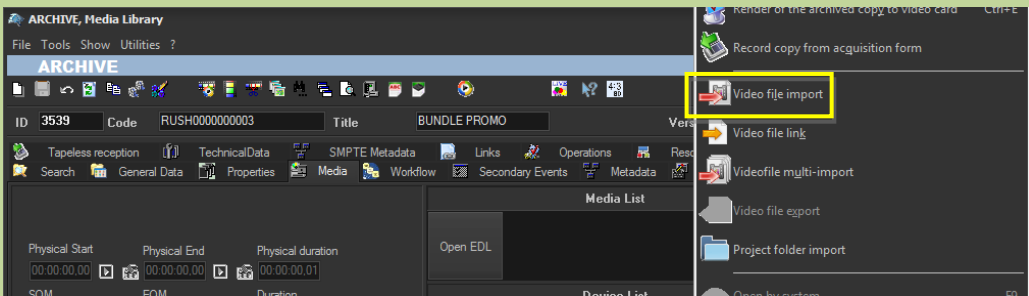
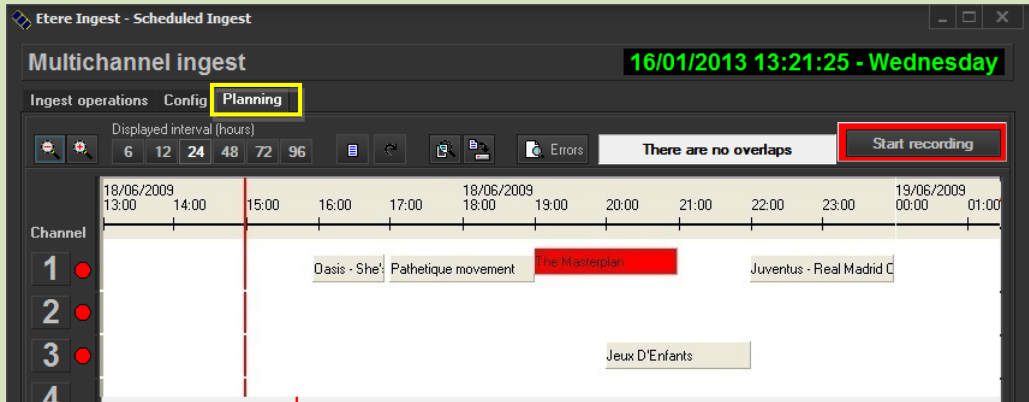
The workflow moves forward to **step 8**

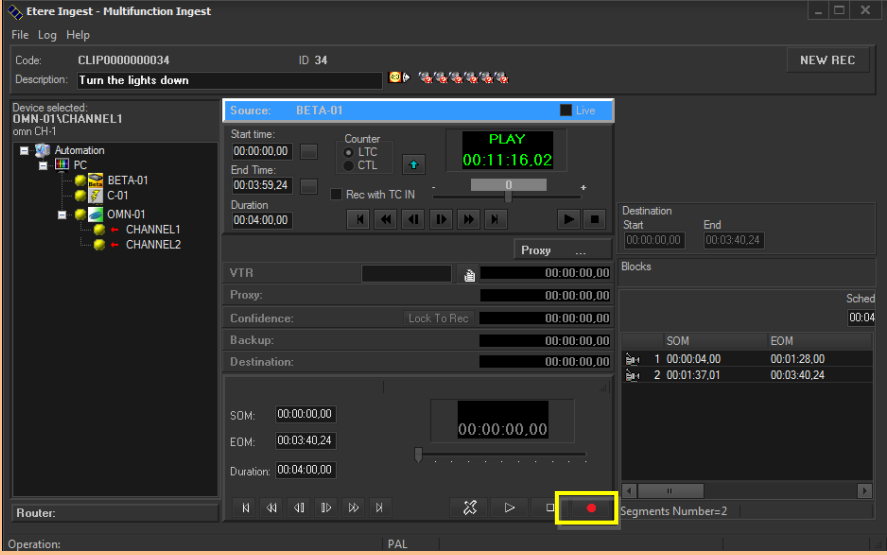
Live

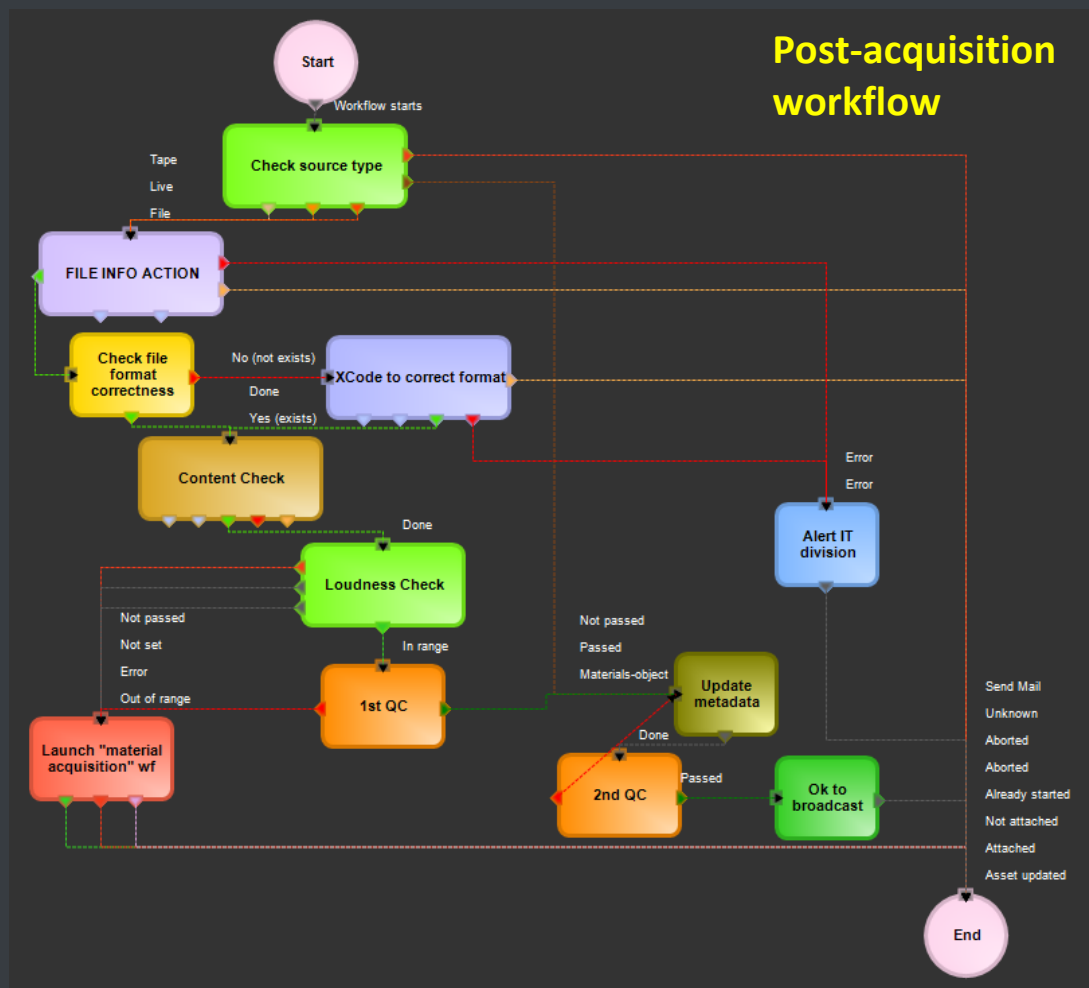
The workflow moves forward to **step 9**

Tape

The workflow moves forward to **step 10**

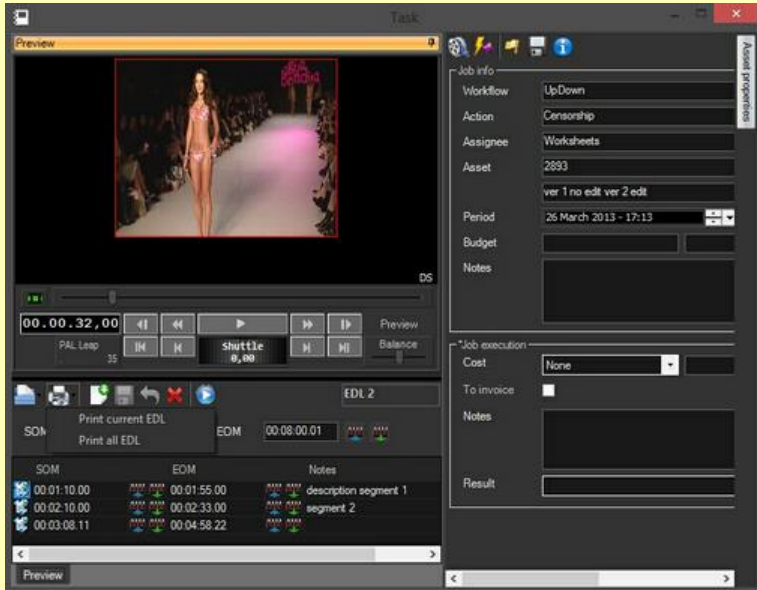
7	Attach material	<p>The <b>ingest operator</b> receives a task to <i>import the material-object into the system</i> and manually set the job as “done”. The workflow moves forward to <b>step 11</b></p> 
8	Attach file	<p>The <b>ingest operator</b> receives a task to <i>import the media file into a server</i> and manually set the job as “done”. The workflow moves forward to <b>step 11</b></p> 
9	Schedule recording	<p>The <b>ingest operator</b> receives a task to <i>plan a scheduled media ingest from a live feed</i>, and manually set the job as “done”.</p>  <p>The workflow moves forward to <b>step 11</b></p>
10	Ingest tape	<p>The <b>ingest operator</b> receives a task to <i>acquire the media from a VTR</i> and manually set the job as “done”. The workflow moves forward to <b>step 11</b></p>

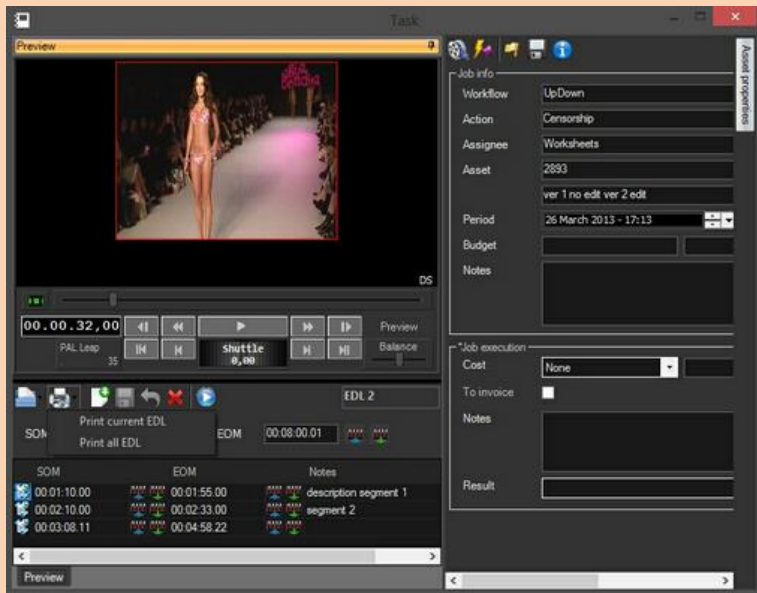
		
11	End	<p>The <b>system</b> ends the execution of the “<u>material acquisition</u>” workflow.</p> <p>The <b>system</b> automatically starts the execution of the “<u>post-acquisition</u>” workflow.</p>

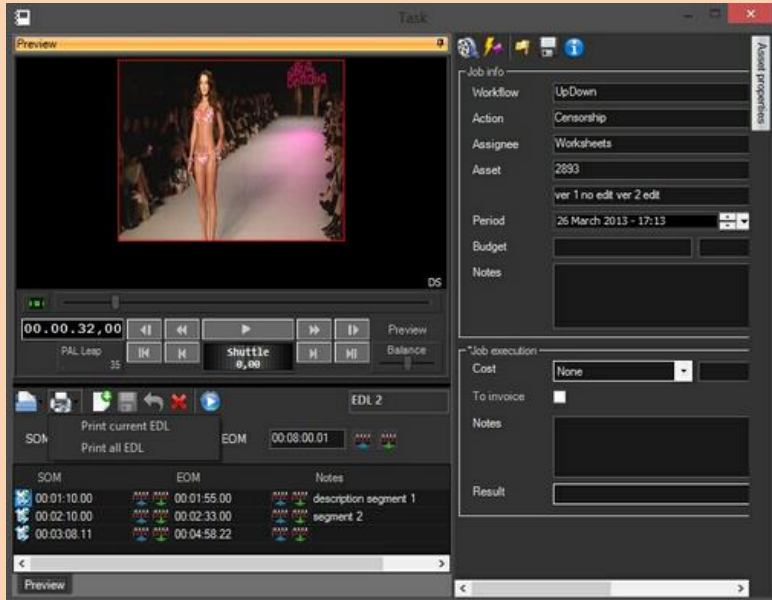


### Post-acquisition workflow

1	Start	The <b>system</b> starts the execution of the <u>"post-acquisition"</u> workflow, which automatically moves forward to <b>step 2</b>
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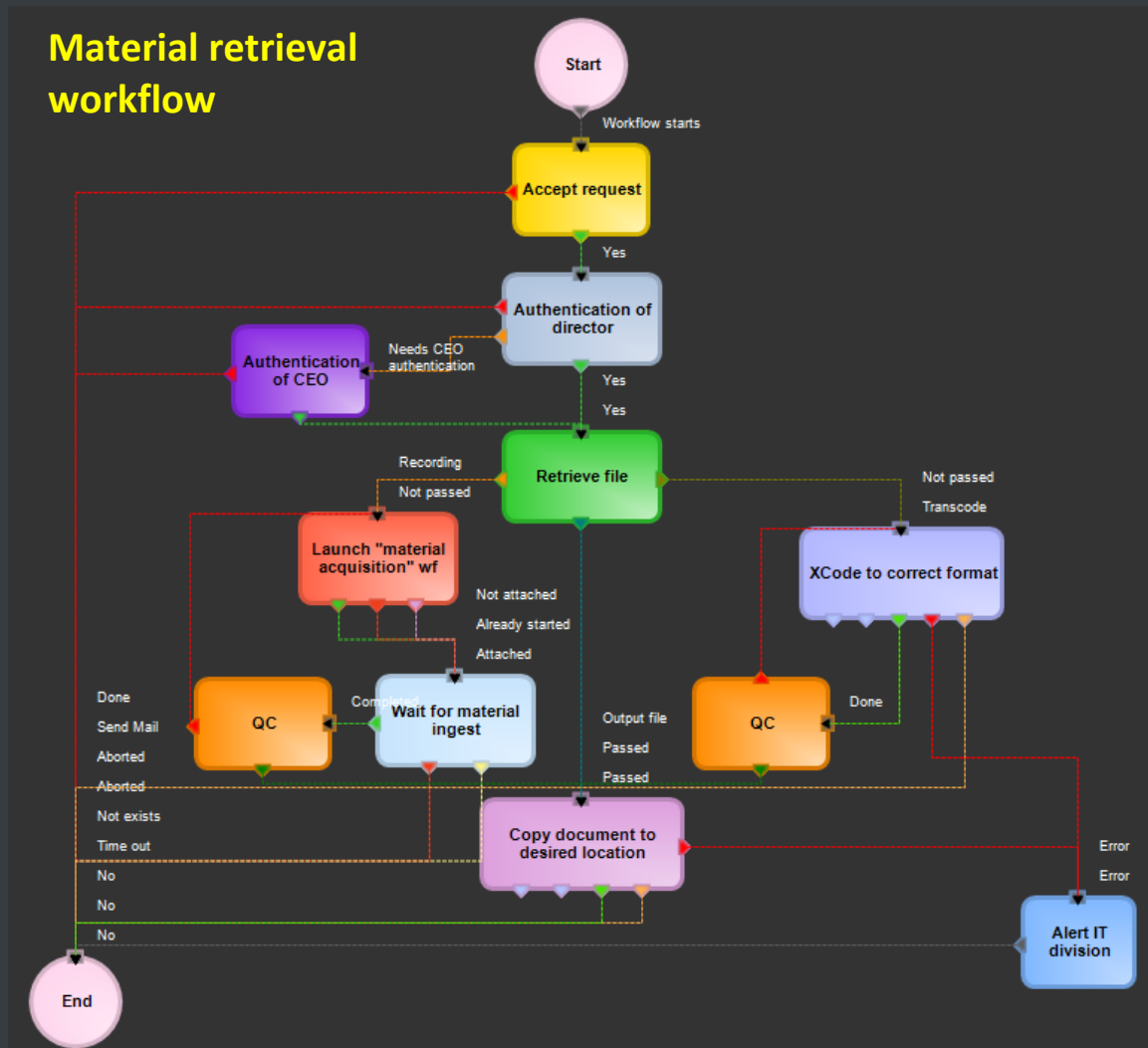
2	Check source type	<p>The <b>system</b> takes a specific action depending on the material's source type:</p> <table><tr><td>Unknown</td><td>The asset is not yet acquired. The workflow moves forward to <b>step 14</b></td></tr><tr><td>Materials object</td><td>The asset is already acquired. The workflow moves forward to <b>step 10</b></td></tr><tr><td>File</td><td>The asset is already acquired. The workflow moves forward to <b>step 3</b></td></tr><tr><td>Live</td><td>The asset is already acquired. The workflow moves forward to <b>step 3</b></td></tr><tr><td>Tape</td><td>The asset is already acquired. The workflow moves forward to <b>step 3</b></td></tr></table>	Unknown	The asset is not yet acquired. The workflow moves forward to <b>step 14</b>	Materials object	The asset is already acquired. The workflow moves forward to <b>step 10</b>	File	The asset is already acquired. The workflow moves forward to <b>step 3</b>	Live	The asset is already acquired. The workflow moves forward to <b>step 3</b>	Tape	The asset is already acquired. The workflow moves forward to <b>step 3</b>
Unknown	The asset is not yet acquired. The workflow moves forward to <b>step 14</b>											
Materials object	The asset is already acquired. The workflow moves forward to <b>step 10</b>											
File	The asset is already acquired. The workflow moves forward to <b>step 3</b>											
Live	The asset is already acquired. The workflow moves forward to <b>step 3</b>											
Tape	The asset is already acquired. The workflow moves forward to <b>step 3</b>											
3	File Info action	<p>The <b>system</b> automatically gathers information from the acquired media file:</p> <table><tr><td>Done</td><td>Media information was successfully gathered The workflow moves forward to <b>step 4</b></td></tr><tr><td>Aborted / Error</td><td>Media information was not gathered (e.g. servers are out of order, etc.) The workflow moves forward to <b>step 13</b></td></tr></table>	Done	Media information was successfully gathered The workflow moves forward to <b>step 4</b>	Aborted / Error	Media information was not gathered (e.g. servers are out of order, etc.) The workflow moves forward to <b>step 13</b>						
Done	Media information was successfully gathered The workflow moves forward to <b>step 4</b>											
Aborted / Error	Media information was not gathered (e.g. servers are out of order, etc.) The workflow moves forward to <b>step 13</b>											
4	Check file format correctness	<p>The <b>ingest operator</b> receives a task to <i>check the correctness of the media file</i> (based on information gathered by the <b>file info</b>):</p> <div></div> <table><tr><td>Yes</td><td>The media file is correct The workflow moves forward to <b>step 5</b></td></tr><tr><td>No</td><td>The media file is incorrect (e.g. wrong aspect ratio) The workflow moves forward to <b>step 13</b></td></tr></table>	Yes	The media file is correct The workflow moves forward to <b>step 5</b>	No	The media file is incorrect (e.g. wrong aspect ratio) The workflow moves forward to <b>step 13</b>						
Yes	The media file is correct The workflow moves forward to <b>step 5</b>											
No	The media file is incorrect (e.g. wrong aspect ratio) The workflow moves forward to <b>step 13</b>											

5	Xcode to correct format	<p>The <b>system</b> automatically transcodes the file to meet the <i>archive format requirements</i>:</p> <table><tr><td>Done</td><td>The transcoding has been successfully performed The workflow moves forward to <b>step 6</b></td></tr><tr><td>Aborted/ Error</td><td>The transcoding has not been performed (e.g. servers are out of order, etc.) The workflow moves forward to <b>step 13</b></td></tr></table>	Done	The transcoding has been successfully performed The workflow moves forward to <b>step 6</b>	Aborted/ Error	The transcoding has not been performed (e.g. servers are out of order, etc.) The workflow moves forward to <b>step 13</b>
Done	The transcoding has been successfully performed The workflow moves forward to <b>step 6</b>					
Aborted/ Error	The transcoding has not been performed (e.g. servers are out of order, etc.) The workflow moves forward to <b>step 13</b>					
6	Content check	<p>The <b>system</b> analyzes the media file to found errors (e.g. black frames, freeze frames, silence, etc.). Encountered errors are written in the EDL and corresponding metadata.</p> <p>The workflow moves forward to <b>step 7</b></p>				
7	Loudness check	<p>The <b>system</b> automatically <i>detects the audio loudness</i> and determines its correctness:</p> <table><tr><td>Within range</td><td>The detected audio loudness is correct The workflow moves forward to <b>step 8</b></td></tr><tr><td>Out of range / Not set / Error</td><td>The detected audio loudness is incorrect (e.g. too high) The workflow moves forward to <b>step 12</b></td></tr></table>	Within range	The detected audio loudness is correct The workflow moves forward to <b>step 8</b>	Out of range / Not set / Error	The detected audio loudness is incorrect (e.g. too high) The workflow moves forward to <b>step 12</b>
Within range	The detected audio loudness is correct The workflow moves forward to <b>step 8</b>					
Out of range / Not set / Error	The detected audio loudness is incorrect (e.g. too high) The workflow moves forward to <b>step 12</b>					
8	1 <sup>st</sup> QC	<p>The <b>QC operator</b> receives a task to <i>determine the quality of the media file</i> (based on the information gathered by the <b>content check</b>):</p> <div></div> <table><tr><td>Passed</td><td>The media file is ok The workflow moves forward to <b>step 9</b></td></tr><tr><td>Not passed</td><td>The media file is not ok (e.g. wrong aspect ratio) The workflow moves forward to <b>step 12</b></td></tr></table>	Passed	The media file is ok The workflow moves forward to <b>step 9</b>	Not passed	The media file is not ok (e.g. wrong aspect ratio) The workflow moves forward to <b>step 12</b>
Passed	The media file is ok The workflow moves forward to <b>step 9</b>					
Not passed	The media file is not ok (e.g. wrong aspect ratio) The workflow moves forward to <b>step 12</b>					
9	Update metadata	<p>The <b>ingest operator</b> receives a task to <i>insert metadata for the acquired media</i> and manually set the job as “done”. The workflow moves forward to <b>step 10</b></p>				

10	2 <sup>nd</sup> QC	<p>The <b>QC operator</b> receives a task to <i>determine the correctness of the file metadata</i>:</p> <div></div> <table><tr><td><b>Passed</b></td><td>The file metadata is ok The workflow moves forward to <b>step 11</b></td></tr><tr><td><b>Not passed</b></td><td>The file metadata is not ok (e.g. wrong metadata) The workflow moves back to <b>step 9</b></td></tr></table>	<b>Passed</b>	The file metadata is ok The workflow moves forward to <b>step 11</b>	<b>Not passed</b>	The file metadata is not ok (e.g. wrong metadata) The workflow moves back to <b>step 9</b>
<b>Passed</b>	The file metadata is ok The workflow moves forward to <b>step 11</b>					
<b>Not passed</b>	The file metadata is not ok (e.g. wrong metadata) The workflow moves back to <b>step 9</b>					
11	Ok to broadcast	<p>The <b>system</b> flags the asset as “ok to broadcast” to allow its use.</p> <p>The workflow moves forward to <b>step 14</b></p>				
12	Launch “material acquisition”	<p>The <b>system</b> automatically restarts the “<u>material acquisition</u>” workflow to acquire a new media as the current one has been rejected. The workflow moves forward to <b>step 14</b></p>				
13	Alert IT division	<p>The <b>system</b> automatically sends an email notification to <i>VTV’s IT division</i> informing about encountered errors (e.g. <i>cannot transcode, cannot gather file info, etc.</i>).</p> <p>The workflow moves forward to <b>step 14</b></p>				
14	End	<p>The <b>system</b> ends the execution of the “<u>post-acquisition</u>” workflow.</p>				

### ▼ 3.2.2. VTV material retrieval workflow

The proposed “**material retrieval workflow**” will automate the process of **exploiting** material thanks to the intelligent combination of *automatic system operations* with *manual user tasks*:



### Material acquisition workflow

1	Start	The <b>system</b> starts the execution of the “ <u>material retrieval</u> ” workflow, which automatically moves forward to <b>step 2</b>
2	Accept request	The <b>supervisor</b> receives a task to approve/reject the retrieval request:

<b>Yes</b>	The retrieval is approved, the workflow moves forward to <b>step 3</b>
<b>No</b>	The retrieval is denied, the workflow moves forward to <b>step 13</b>

The **director** receives a task to give/deny retrieval permission to the **requester user**:

<b>Yes</b>	The retrieval is allowed. The workflow moves forward to <b>step 13</b>
<b>Needs CEO authentication</b>	The retrieval needs CEO approval. The workflow moves forward to <b>step 4</b>
<b>No</b>	The retrieval is denied. The workflow moves forward to <b>step 13</b>

4

Authenticati  
on of CEO

The **CEO** receives a task to allow/deny retrieval permission to the **requester user**:

Workflow	VTV - Material retrieval	Status	Yellow
Action	Authentication of CEO	Priority	Low
Assignee	CEO		
Asset	PROMO1_2		
Period	27 March 2013 - 17:08	28 March 2013 - 17:08	
Budget			
Notes			
Job execution			
Cost	None		
To invoice	<input type="checkbox"/>		
Notes			
Result	Yes		
	No		

**Yes**The retrieval is allowed. The workflow moves forward to **step 5****No**The retrieval is denied. The workflow moves forward to **step 13**

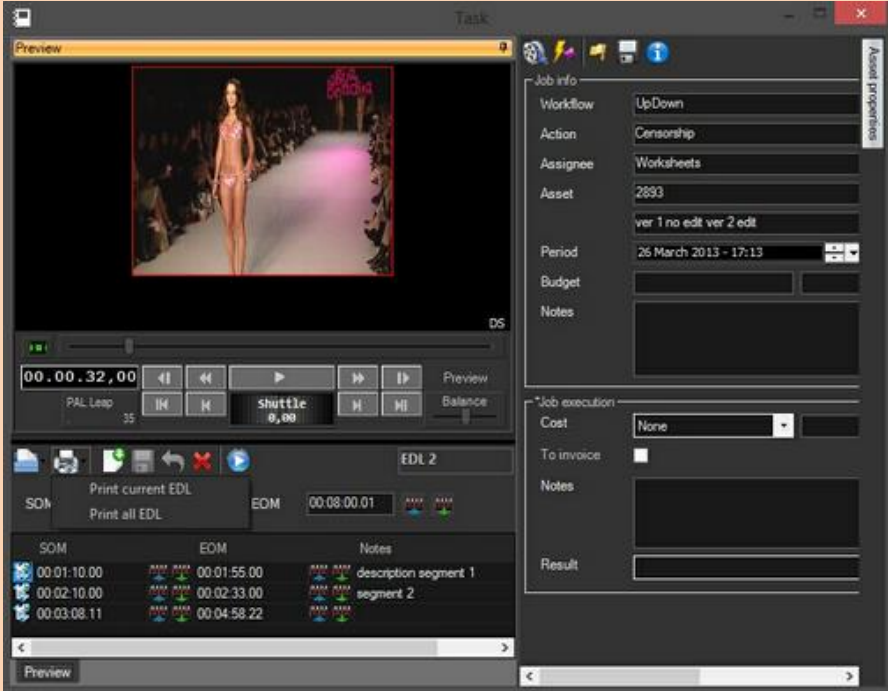
5

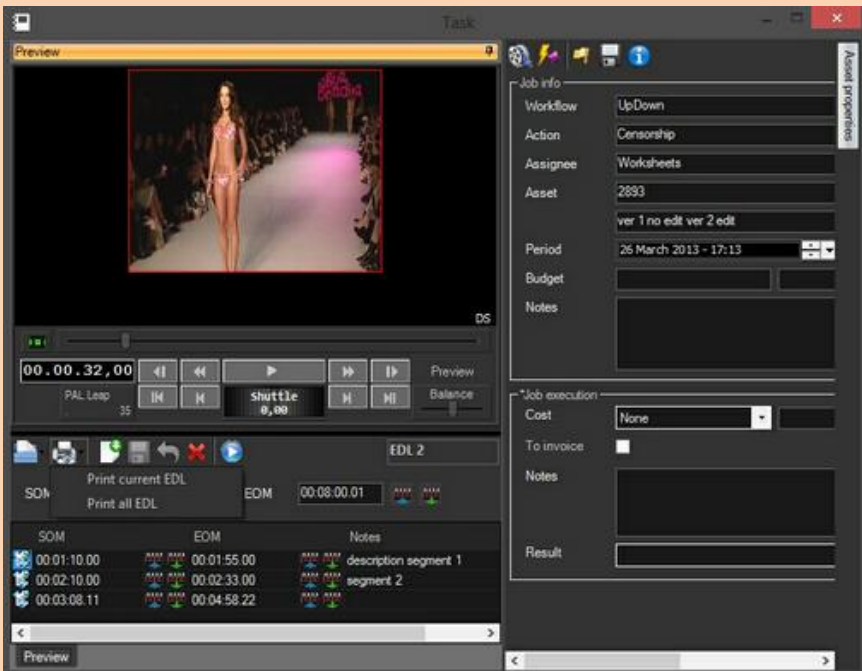
Retrieve file

The **ingest manager** receives a task to take a decision depending on the availability of the requested media file:

Workflow	VTV - Material retrieval	Status	Yellow
Action	Retrieve file	Priority	Low
Assignee	Ingest manager		
Asset	PROMO1_2		
Period	27 March 2013 - 17:08	28 March 2013 - 17:08	
Budget			
Notes			
Job execution			
Cost	None		
To invoice	<input type="checkbox"/>		
Notes			
Result	Output file		
	Transcode		
	Recording		

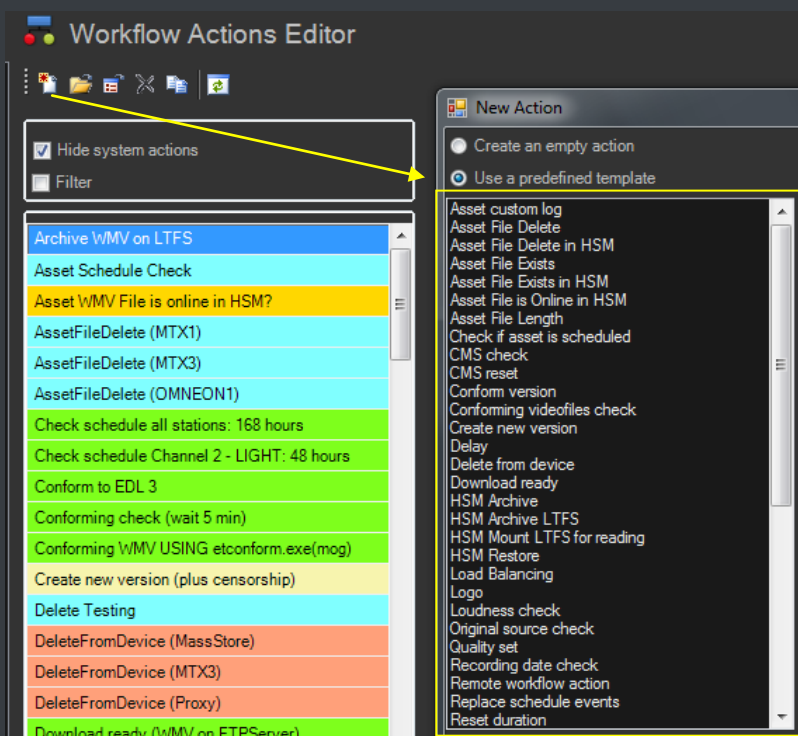
**Output file**The media file is available in the requested format  
The workflow moves forward to **step 11****Transcode**The media file is available but not in the requested format  
The workflow moves forward to **step 6****Recording**The media file is unavailable (not yet acquired)  
The workflow moves forward to **step 8**

6	Xcode to correct format	<p>The <b>system</b> automatically transcodes the file to meet the <i>requested format</i>:</p> <table><tr><td>Done</td><td>The transcoding has been successfully performed The workflow moves forward to <b>step 7</b></td></tr><tr><td>Aborted/ Error</td><td>The transcoding has not been performed (e.g. servers are out of order, etc.) The workflow moves forward to <b>step 12</b></td></tr></table>	Done	The transcoding has been successfully performed The workflow moves forward to <b>step 7</b>	Aborted/ Error	The transcoding has not been performed (e.g. servers are out of order, etc.) The workflow moves forward to <b>step 12</b>
Done	The transcoding has been successfully performed The workflow moves forward to <b>step 7</b>					
Aborted/ Error	The transcoding has not been performed (e.g. servers are out of order, etc.) The workflow moves forward to <b>step 12</b>					
7	QC	<p>The <b>QC operator</b> receives a task to watch and <i>determine the quality of the media file</i>:</p> <div></div> <table><tr><td>Passed</td><td>The media file is ok The workflow moves forward to <b>step 11</b></td></tr><tr><td>Not passed</td><td>The media file is not ok (e.g. wrong aspect ratio) The workflow moves back to <b>step 6</b></td></tr></table>	Passed	The media file is ok The workflow moves forward to <b>step 11</b>	Not passed	The media file is not ok (e.g. wrong aspect ratio) The workflow moves back to <b>step 6</b>
Passed	The media file is ok The workflow moves forward to <b>step 11</b>					
Not passed	The media file is not ok (e.g. wrong aspect ratio) The workflow moves back to <b>step 6</b>					
8	Launch “material acquisition”	<p>The <b>system</b> automatically restarts the “material acquisition” workflow to acquire the requested media as it’s currently unavailable. The workflow moves forward to <b>step 9</b></p>				
9	Wait for “material acquisition”	<p>The <b>system</b> waits for the “material acquisition” workflow to be completed, then return a result depending on the success:</p> <table><tr><td>Completed</td><td>The media file has been successfully acquired The workflow moves forward to <b>step 10</b></td></tr><tr><td>Timeout / Not exists</td><td>The media file has not been acquired (i.e. waiting time was exceeded) The workflow moves forward to <b>step 13</b></td></tr></table>	Completed	The media file has been successfully acquired The workflow moves forward to <b>step 10</b>	Timeout / Not exists	The media file has not been acquired (i.e. waiting time was exceeded) The workflow moves forward to <b>step 13</b>
Completed	The media file has been successfully acquired The workflow moves forward to <b>step 10</b>					
Timeout / Not exists	The media file has not been acquired (i.e. waiting time was exceeded) The workflow moves forward to <b>step 13</b>					

10	QC	<p>The <b>QC operator</b> receives a task to watch and <i>determine the quality of the media file</i>:</p> <div></div> <table><tr><td><b>Passed</b></td><td>The media file is ok The workflow moves forward to <b>step 11</b></td></tr><tr><td><b>Not passed</b></td><td>The media file is not ok (e.g. wrong aspect ratio) The workflow moves back to <b>step 8</b></td></tr></table>	<b>Passed</b>	The media file is ok The workflow moves forward to <b>step 11</b>	<b>Not passed</b>	The media file is not ok (e.g. wrong aspect ratio) The workflow moves back to <b>step 8</b>
<b>Passed</b>	The media file is ok The workflow moves forward to <b>step 11</b>					
<b>Not passed</b>	The media file is not ok (e.g. wrong aspect ratio) The workflow moves back to <b>step 8</b>					
11	Copy file to desired location	The <b>system</b> automatically copies the requested media file into a preset location (e.g. a shared FTP directory). The workflow moves forward to <b>step 13</b>				
12	Alert IT division	<p>The <b>system</b> automatically sends an email notification to <i>VTV's IT division</i> informing about encountered errors (e.g. <i>cannot transcode file, cannot copy file, etc.</i>).</p> <p>The workflow moves forward to <b>step 14</b></p>				
13	End	The <b>system</b> ends the execution of the “material retrieval” workflow.				

### ▼ 3.2.3. Common workflow actions

Etere provides a wide range of templates for creating workflow actions regarding the most common file-based media operations, allowing customizing them and also using completely user-defined actions:

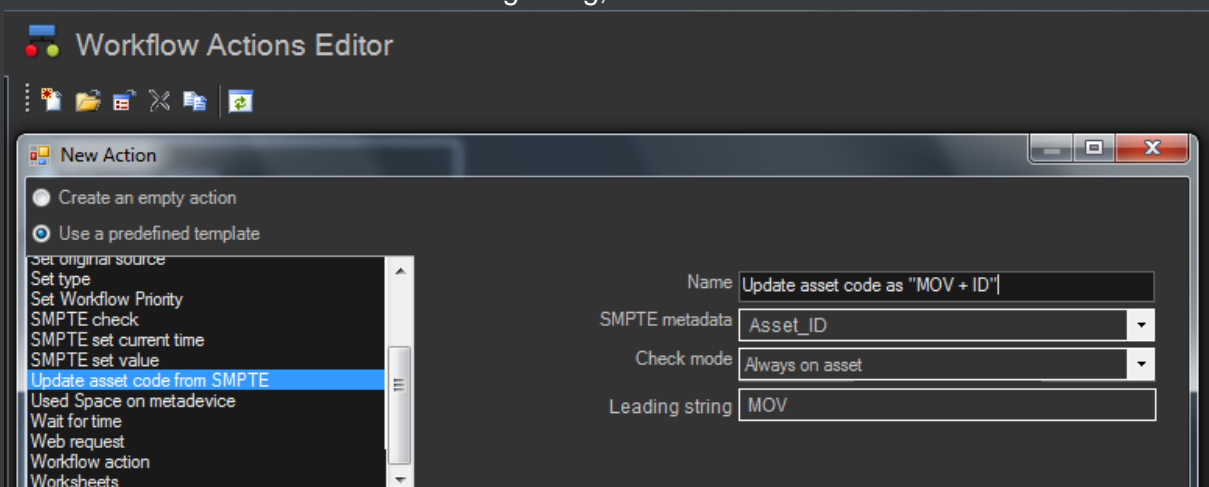


Templates facilitated use of allow creating a actions:

enables a workflows, they myriad of

#### 3.2.3.1. Batch code updating

A workflow action allows to automatically change the code of assets based on a specific metadata and also a fixed leading string, for instance:



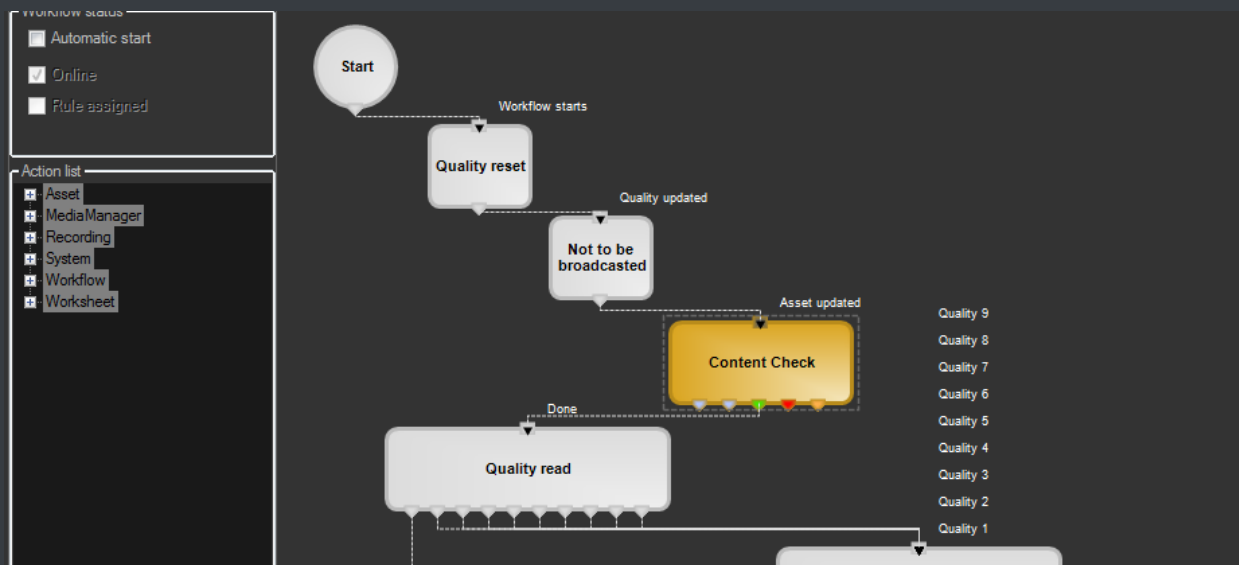
For instance, executing the above action for all “movies” assets will change their codes into: **MOV145246** , **MOV267634**, **MOV49527** , **MOV53495** , *etc.*

### 3.2.3.2. Content Check

Etere CMS, which stands for Content Management Server, an integrated file-based module for performing Quality Controls (QC) via workflow. Etere CMS is the best solution for checking audio/video either prior (e.g. playout, repurpose, archiving) or after (e.g. encoding, ingest, editing, transcoding, archiving) a media operation.



**CMS** will speed up, automate and streamline the operational efficiency of file-based quality controls performed via workflow across the entire content life cycle.



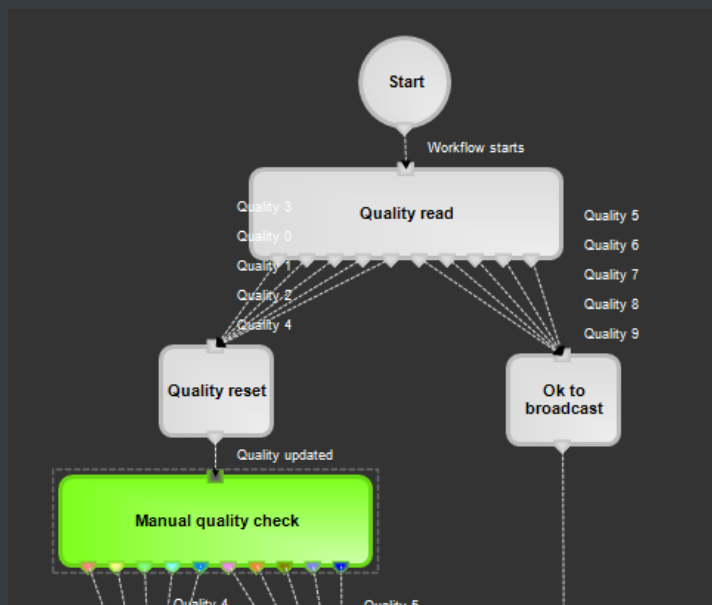
**CMS** is based on a workflow action which, once included into a workflow that will automatically analyze the asset's proxy video to detect and log (into its EDL) the following audio/video issues:

#### KEY QC FEATURES

- **Scene changes:** Video stream segment containing brightness differences between consecutive frames.
- **Black frames:** Video stream segment containing black frames and an audio volume lower than a reference level.
- **Freeze frames:** Video stream segment containing a single frame image repeated -as a frozen like a snapshot- for a period of time.
- **Audio silence:** Video stream segment containing silent frames (i.e. frames matching a certain silent audio level and a black video level).
- **Audio level:** Video stream segment presenting "noisy audio signals" which are greater than a given maximum threshold.
- **Anti-phase audio:** Video stream segment containing audio waves with "anti-phase signals", that is, opposite channels which mutually cancel each other out.
- **Audio loudness:** Measurement performed based on the ITU-R BS.1770-2 loudness metering algorithm widely used as loudness-compliant standard.

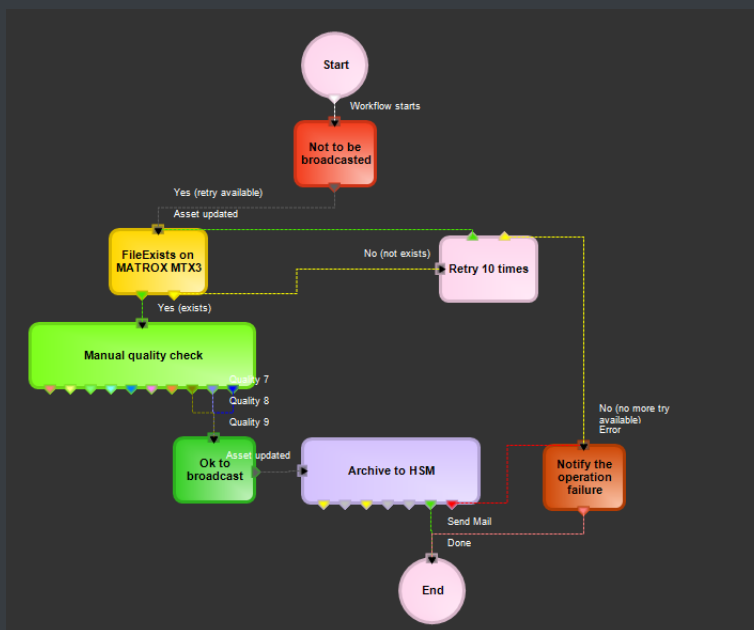
#### 3.2.3.3. QualityCheck

An Etere quality check workflow is able to automatically ask operators to assign a quality value to a certain asset(s) after browsing its video content:



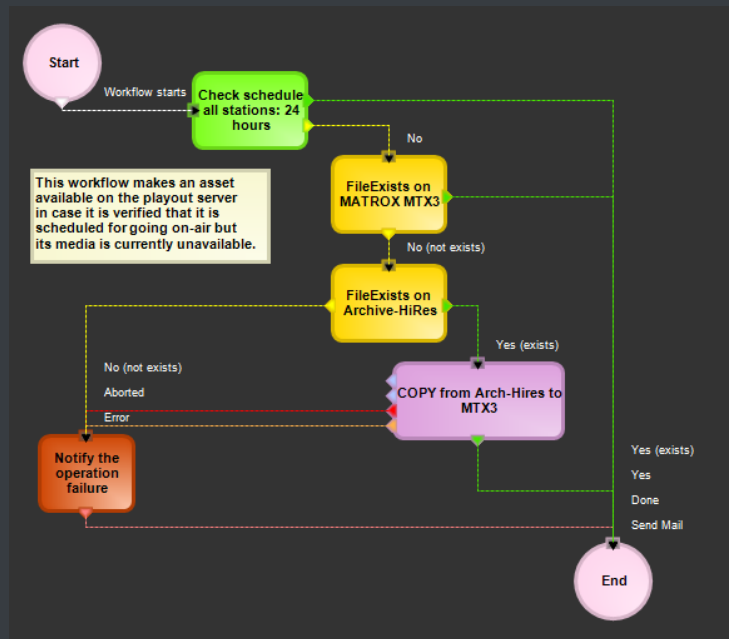
#### 3.2.3.4. Archiving

Etere allows you to design a workflow for archiving your assets on LTO tapes, including a quality and content check, a proxy copy generation and a final email indicating the result of the process:



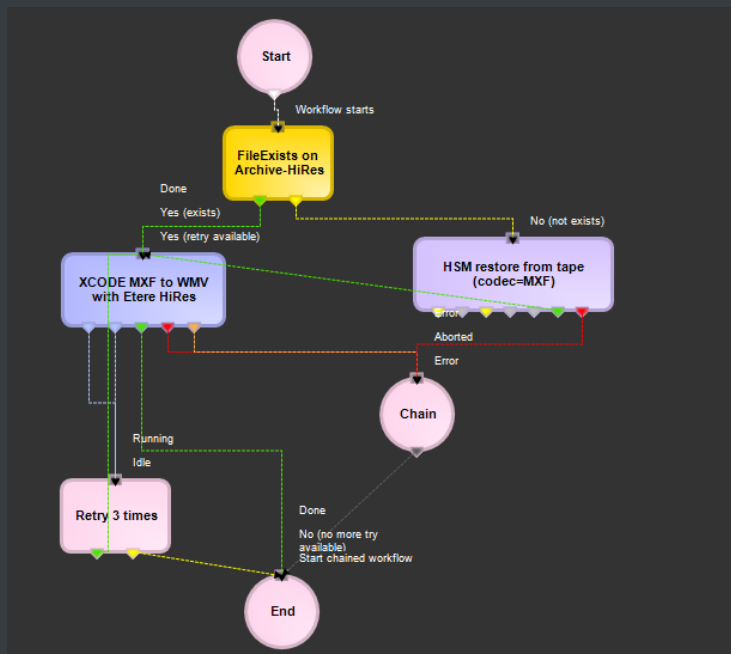
#### 3.2.3.5. Restore

Create a workflow to automatically restore any scheduled asset for its delivery by searching for them amongst a group of devices arranged on basis of their priority:



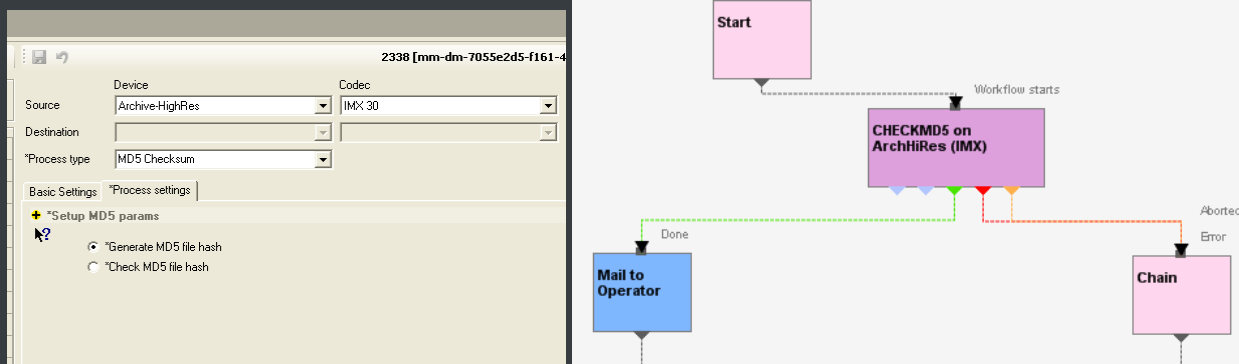
### 3.2.3.6. Transcoding

Etere's integration with Rhozet's Carbon Coder software handles a wide array of critical operations including format conversions, workflow operations that can be launched for example, immediately after a content capture:



### 3.2.3.7. Checksum MD5 verification

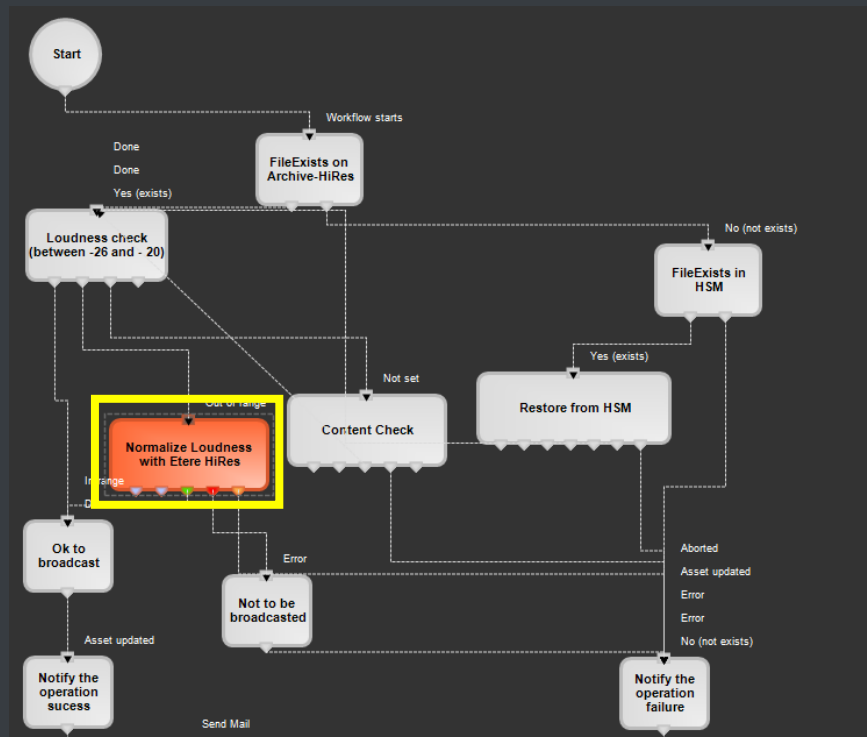
Etere offers an enterprise control of video files integrity; it keeps a log of the hash md5 of video files such in a way that it is possible to verify at any time if they have been modified after their approval. All video files registered on the Etere's database can be verified through an md5 checksum, this control is performed via workflow, each time that a video file is moved from one device to another, its initial hash md5 is calculated to allow a future checking:



The workflow editor allows creating custom Checksum workflows to either generate or check the MD5 hash of a video file.

### 3.2.3.8. Audio normalization

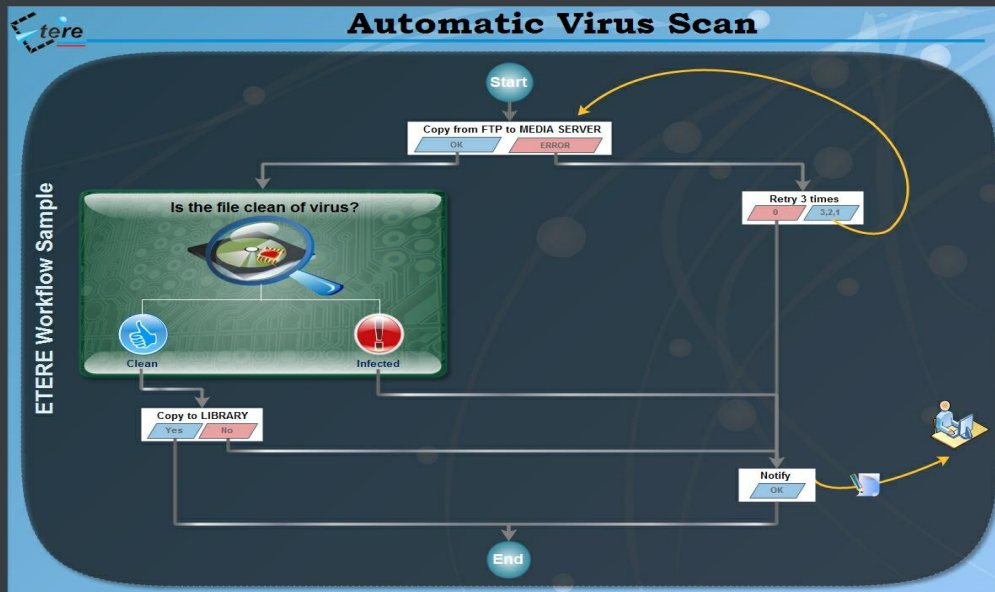
Etere provides a file-based loudness control, allowing stations not only to check the loudness level of media contents but also to normalize them to meet specific limitations.



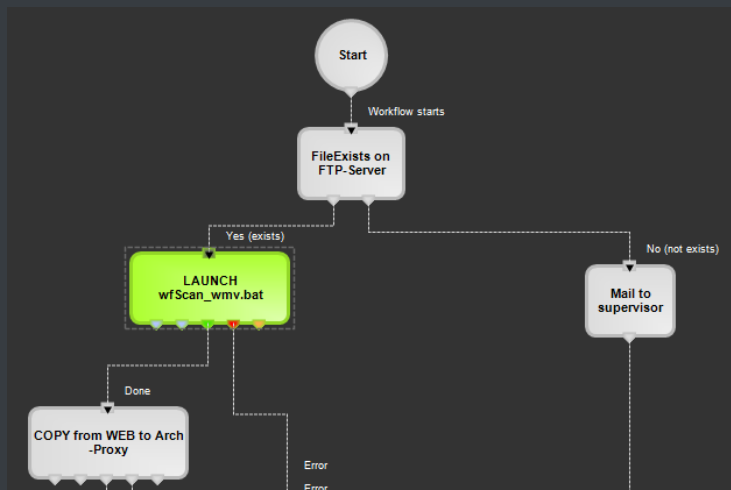
As shown in the sample above, “loudness normalization” workflows can be launched automatically for specific assets, for example, after their ingestion or tapeless reception (i.e. web upload).

### 3.2.3.9. Antivirus scan

Etere includes, as a part of its enterprise media management, the capability of integrating antivirus protection within workflows, allowing stations to improve their media workflows (e.g.: post-upload workflows) by giving them the capability of automatically scanning transferred files for virus and thus end their work with a flourish.



As shown in the figure above, the automatic virus scan capability can be easily integrated within any workflow at any stage just by inserting an action block configured to perform the virus checking; stations can insert them, for example, within the default workflow to be launched after an EtereWeb upload.



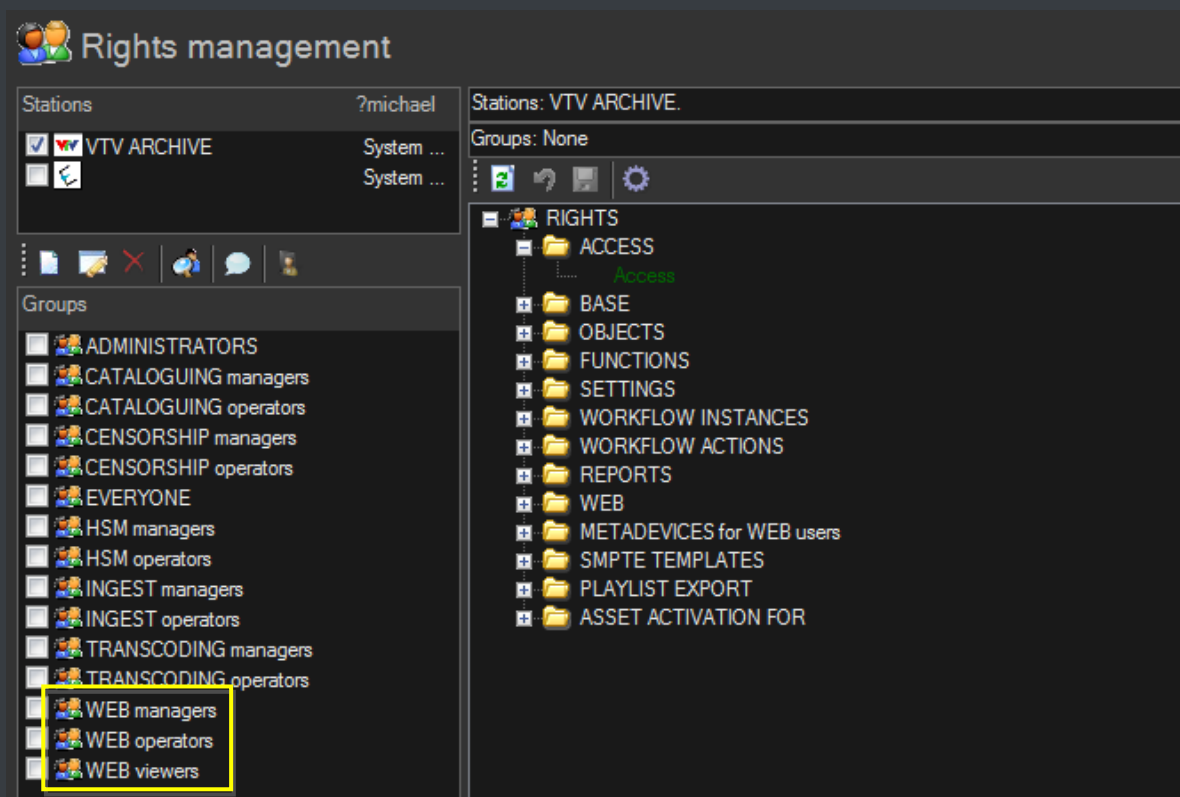
### ▼ 3.3. Role-based Access Control

Etere provides a “**Rights Management**” interface to control access to its various modules and functions, with it, stations will be able to freely grant or deny access to specific user groups (i.e. roles), thus allowing to set different mixtures of access levels for each group.

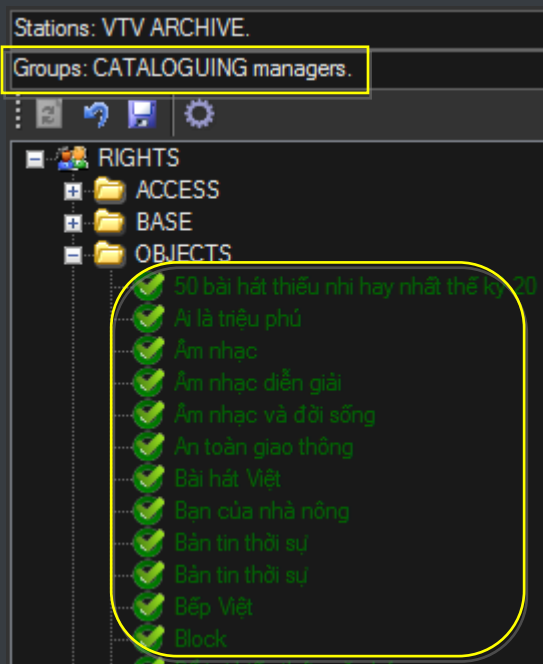
#### ▼ 3.3.1. Permission levels

Etere allows managing different access levels for users which form part of the system; specific access rights not only for different users, but also for different stations. As shown below, groups can be split into sub-groups to enable a more-specific assignment of permissions, for example, the “**Web**” group intended to control web users can be split as follows:

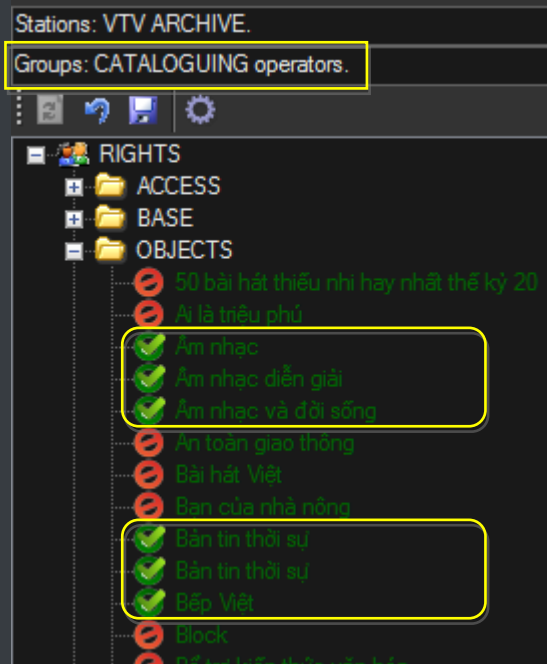
- **Web managers:** Users enabled to change the web service settings (e.g. upload devices).
- **Web operators:** Users enabled to view and modify data (e.g. fill asset metadata).
- **Web viewers:** Users enabled to view but not to modify data (e.g. watch proxy videos).



All Etere features (e.g. functions, workflows, stations, etc.) falls under different categories, the availability of these functions is determined by the “Rights Management Tool”, where rights are set for *specific groups* of users:



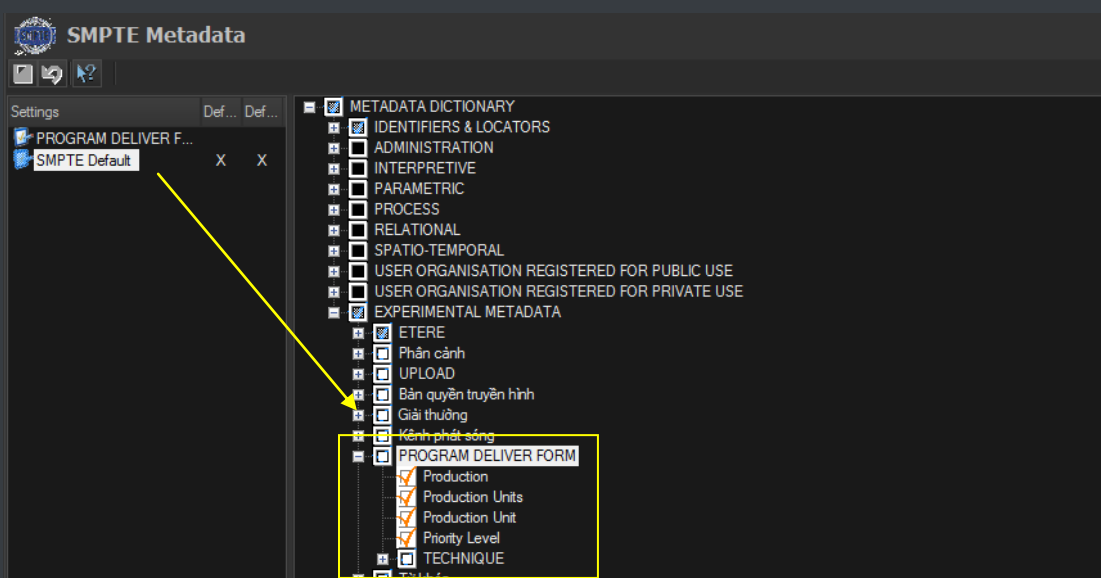
(Cataloguing managers: full permissions)



(Cataloguing operators : restricted permissions)

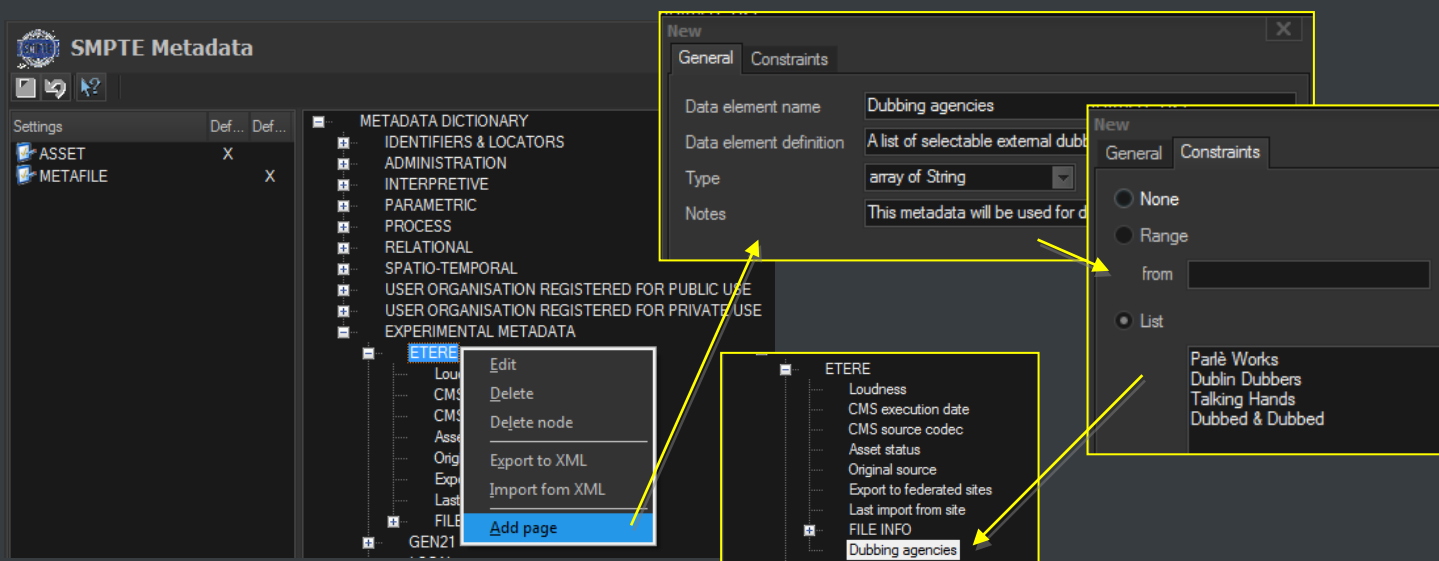
### ▼ 3.4. Metadata Cataloguing

SMPTE Metadata is a key part of the media management, that's why Etere provides a dedicated module for defining eventually useful metadata (e.g. 'technical comments', 'descriptive names', 'intellectual rights') and store them into a robust SMPTE dictionary:



### ▼ 3.4.1. Custom definition

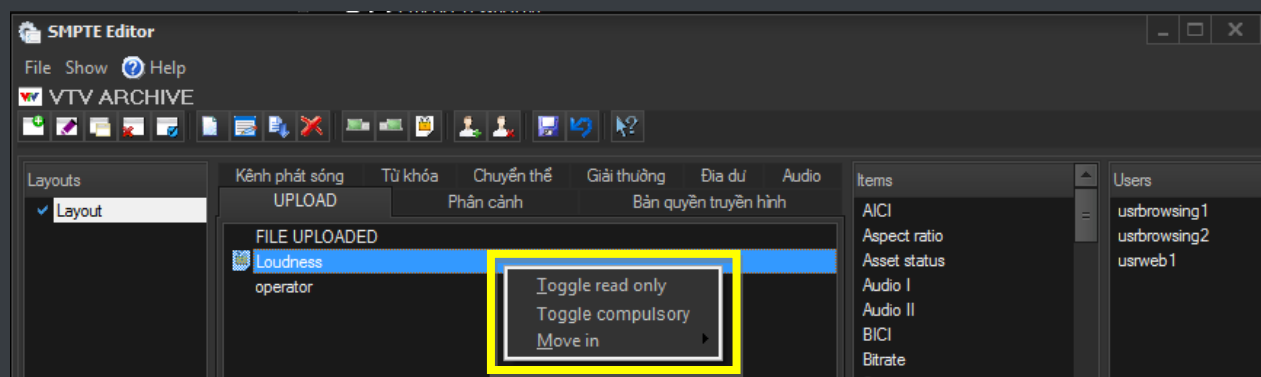
The metadata elements comprised in the media management can be freely configured, for example, adding custom metadata:



As shown above, metadata fields are grouped by tabs which form part of a master layout, said layout can be enabled only for a specific set of users.

### ▼ 3.4.2. Read-only and compulsory fields

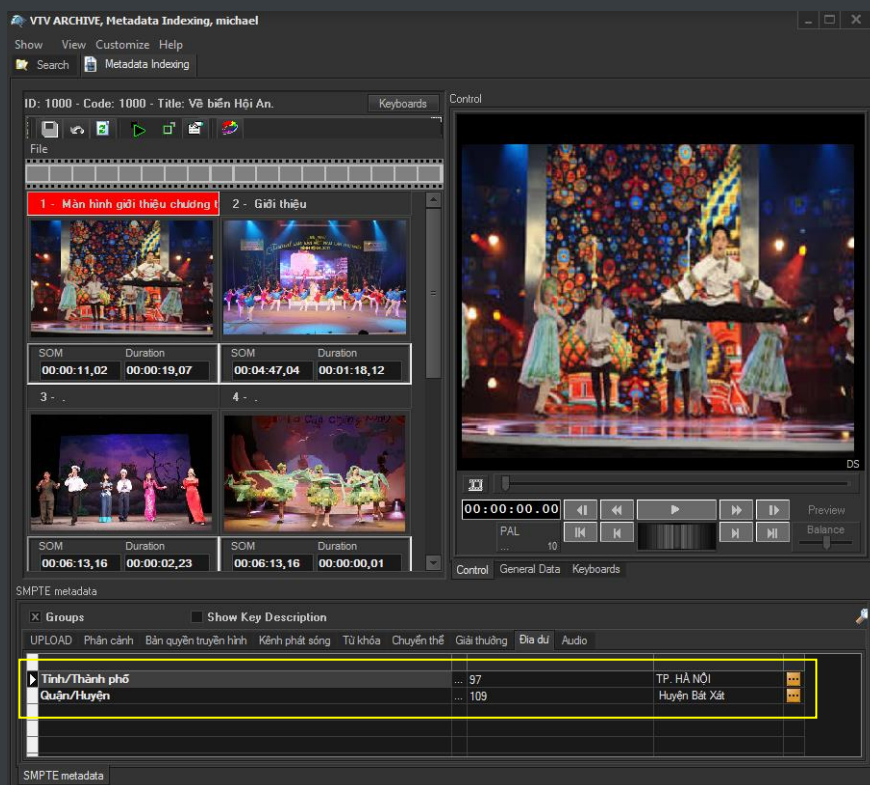
Etere allows administrators configuring metadata fields as either:



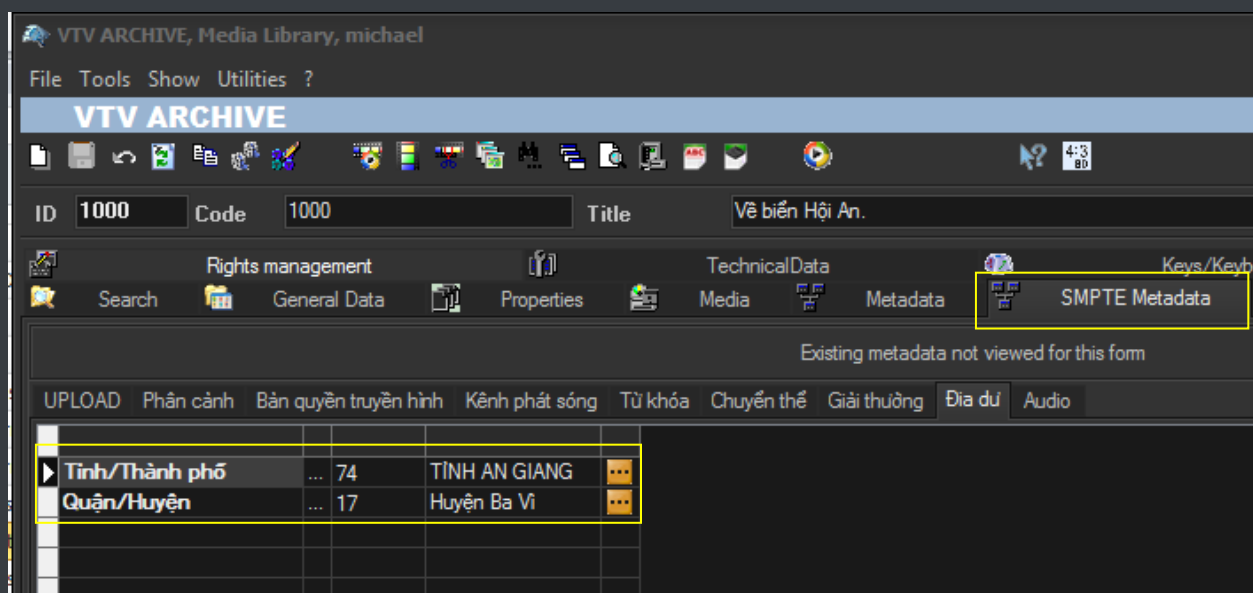
- **Read-only:** Selected users will be enabled to read but not modify the metadata
- **Compulsory:** Selected users will be forced to compile the metadata

### ▼ 3.4.3. Metadata insertion

Etere enables search, browse and cataloguing of rich media, a very intuitive interface establishes a bridge between the ingest department and the production department, allowing low-res proxy browsing over the network (contents to be browsed simultaneously from various workstations):



In Etere, all assets contain user-defined SMPTE metadata fields, these fields can be either manually compiled or automatically compiled (retrieved from specific asset properties):



### ▼ 3.5. Search engine

Etere comes with a complete, versatile and powerful **search engine** which allows users to search for assets and interact with them. The user is able to search assets based on their information stored in the database. Among the several searching features which are available in this section, we can mention the following ones:

- Search for assets based on **database fields**,
- A **Full-text** search across various fields of assets,
- Full-text results are sorted on **degree of relevance**,
- Search for **synonyms** to extend the range of results,
- Searches can be saved as **profiles**,
- **Batch** management of several assets at once,
- **Customizable** tabs and fields, drag & drop enabled,
- Results can be **grouped** by types, genres or artists,
- Add, launch and view **workflows** on-the-fly,
- Filter results by **SMPTE metadata** or **Metadvice**.

#### ▼ 3.5.1. Restricted search

Depending on whether user's groups are allowed or not to manage a certain type of asset (e.g. movies), search capabilities will be restricted to granted types only:

The 'restricted permissions' interface shows a tree view of rights. The 'RIGHTS' section is expanded, showing 'ACCESS', 'BASE', and 'OBJECTS'. Under 'OBJECTS', there are several items with checkboxes: '50 bài hát thiếu nhi hay nhất thế kỷ 20', 'Âm nhạc', 'Âm nhạc diễn giải', 'Âm nhạc và đời sống', 'Bài hát Việt', 'Bản tin thời sự', 'Bếp Việt', and 'Đổi mới truyền thông văn hóa'. The 'Âm nhạc' and 'Bếp Việt' items are highlighted with yellow boxes. A yellow arrow points from the 'Âm nhạc' box to the 'restricted search' dialog box.

The 'restricted search' dialog box is titled 'Select type' and shows a table of asset types. The table has columns for 'Code', 'Description', and 'Group'. The rows are: AM (Âm nhạc và đời sống, VNG), AN (Âm nhạc, VNG), ANDG (Âm nhạc diễn giải, VNG), BNN (Bản của nhà nông, PTLG), BTTS (Bản tin thời sự, TSG), and BV (Bếp Việt, BKTG). The 'AM', 'AN', 'ANDG', 'BNN', 'BTTS', and 'BV' rows are checked. Below the table, there are fields for 'Code' and 'Code', and a 'Select all' button. At the bottom, it says 'Records: 124/124' and 'Sorted by: Code'.

*restricted permissions*

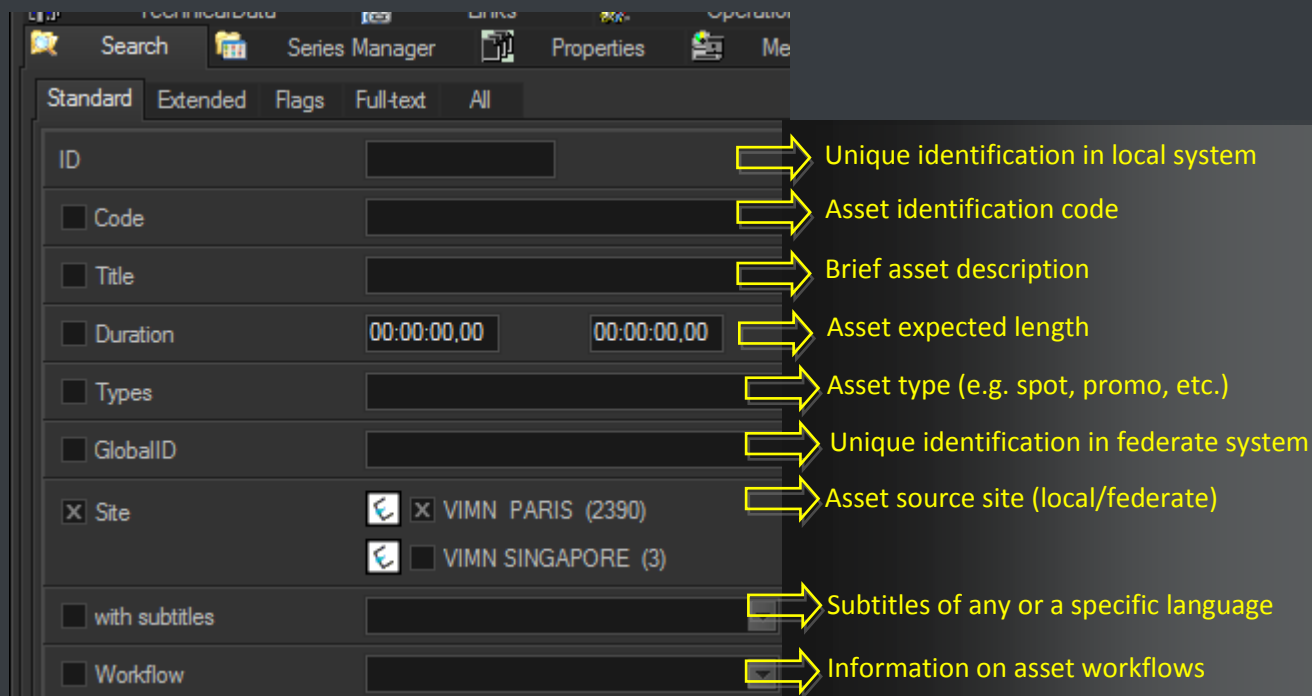
*restricted search*

The 'restricted results' interface shows a search results table. The table has columns for 'ID', 'Code', 'Title', 'Media', 'Episode', 'Version', 'Duration', 'Type', 'Site', and 'External ID'. The rows are: 10109 (Bản tin thời sự VTV1, 19 giờ, 1, 1, 00:39:34, 5, BTTS, TV ARCHIVE), 10110 (Bản tin thời sự VTV1, 19 giờ, 1, 1, 00:00:00, 1, BTTS, TV ARCHIVE), 10111 (Bản tin thời sự VTV1, 19 giờ, 1, 1, 00:41:19, 6, BTTS, TV ARCHIVE), and 10112 (Bản tin thời sự VTV1, 19 giờ, 1, 1, 00:35:59, 7, BTTS, TV ARCHIVE). The 'Type' column is highlighted with a yellow box.

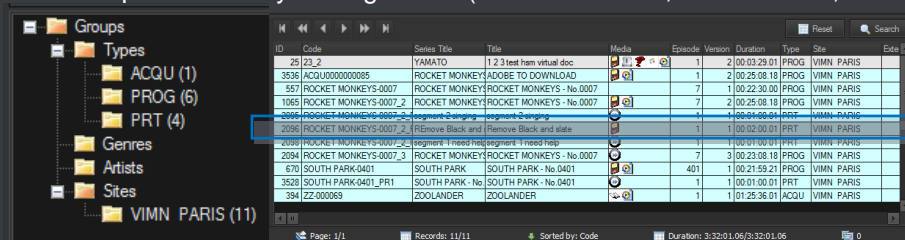
*restricted results*

### ▼ 3.5.2. Search filters

Some of the most common filters used for searching assets are:



Assets matching the filters criteria are retrieved in the bottom part of the window, there, they can be selected (or multi-selected) in order to open or directly manage them (launch workflow, add to series, change type, etc.):

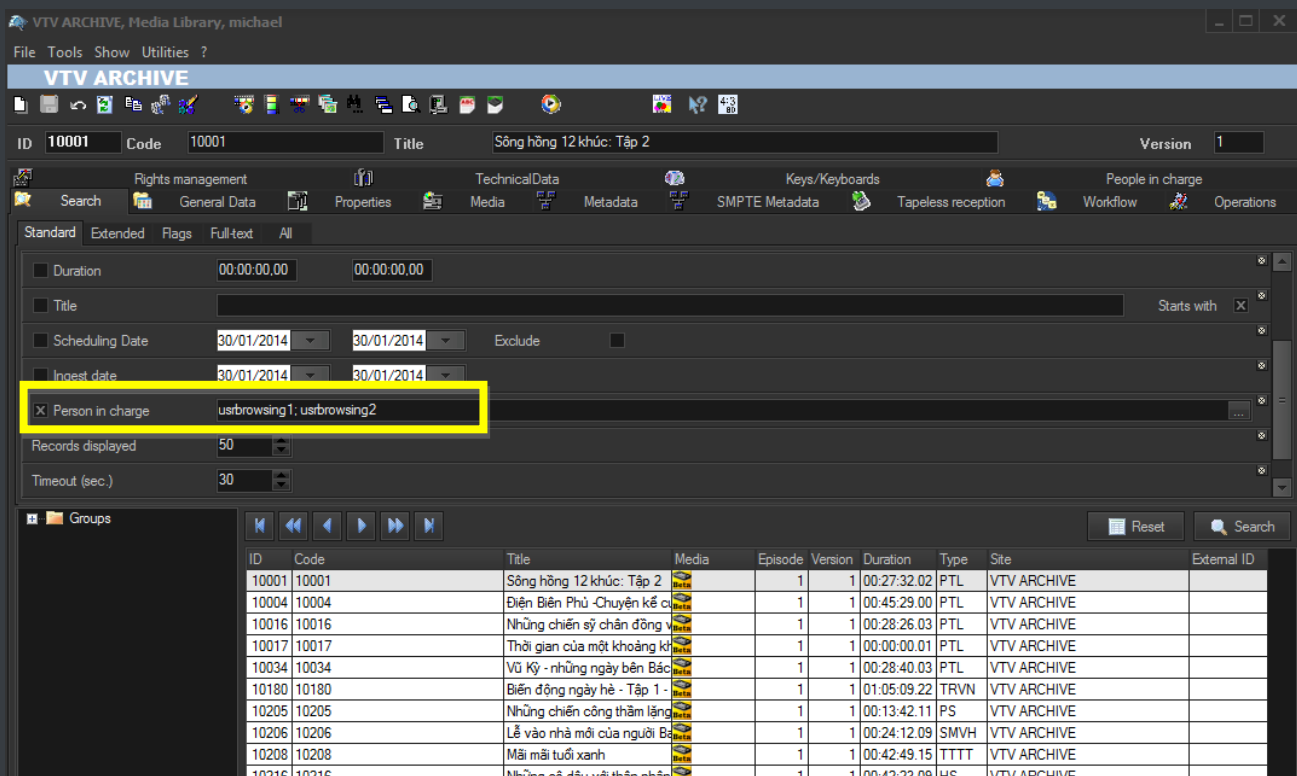


Filters can be classified according to their nature into the following categories:

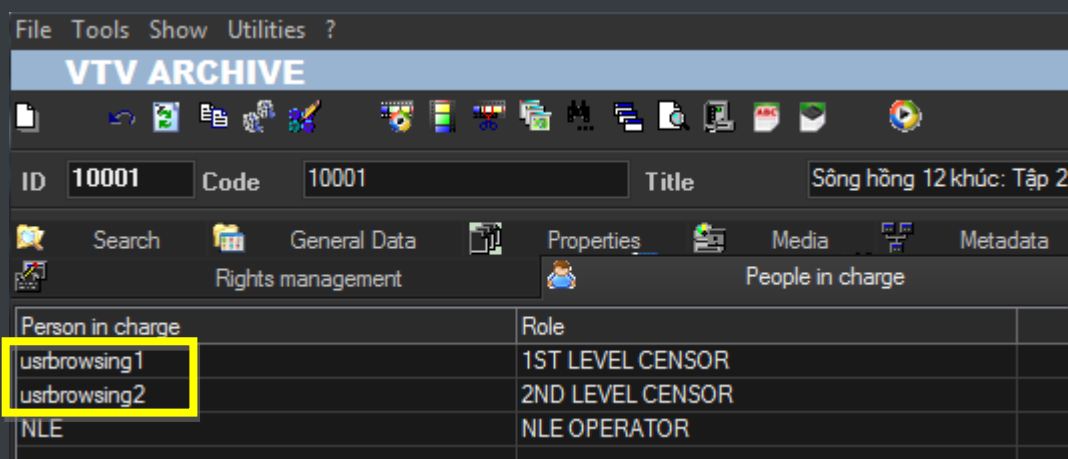
<b>Base</b>	Base descriptions about the asset: <b>Id, code, title, type, stations, sites, genre, artist, etc</b>
<b>Media</b>	Media information regarding devices, files and processes: <b>Duration, metadvice, codec, video file, workflows, worksheets, etc</b>
<b>Dates</b>	Dates on which specific asset operations have been performed: <b>Production, ingest, creation, arrival, scheduling, validity start, expiry, etc</b>
<b>Flags</b>	Flags detailing specific asset properties: <b>Ok to broadcast, live, expired, ingested, archived, inactive, not tapeless, etc</b>
<b>With</b>	Properties that indicates the existence of a certain object associated to the asset: <b>Edl, video tape, data tape, subtitles, cad approval, detected blacks, etc</b>
<b>Full-text</b>	Special search performed simultaneously performed across multiple tables: <b>Title, segments, artists, genres, roles, metadata, subtitles, documents, etc</b>

### ▼ 3.5.3. Multi-value filters

Filters can be used to search for multiple values, for instance, you can search for all assets which “**person in charge**” is one (or both) of the given users:



(search based on multiple “person in charge”)



(retrieved asset with “persons in charge” matching the search criteria)

## ▼ 3.6. Operations history

All operations performed in Etere against **assets** are recorded and available for consulting from:

### ▼ 3.6.1. Asset operation logs

Asset operations (e.g. copy, transcode, edit, etc.) are logged under the “Operations” tab of the **Media Library**. For instance, if a user modifies an **asset EDL**, said operations will be recorded and made available:

#### 1. The user modifies an EDL:

Thumbnail	SOM	EOM	Δ Distance	Duration	T Description	Type	Linked Asset Form
1	00:00:11,02	00:00:30,08	00:00:11,02	00:00:19,07	Màn hình giới thiệu	✓	
2	00:04:47,04	00:06:05,15	00:04:16,21	00:01:18,12	Giới thiệu	✓	
3	00:06:13,16	00:06:16,13	00:00:08,01	00:00:02,23		✓	
4	00:06:13,16	00:06:13,16	23:59:57,03	00:00:00,01		✓	
5	00:06:13,16	00:06:13,15	00:00:00,00	00:00:00,00		✓	
6	00:06:13,16	00:06:13,16	00:00:00,01	00:00:00,01		✓	
7	00:06:13,16	00:06:13,16	00:00:00,00	00:00:00,01		✓	
8	00:06:51,13	00:07:43,08	00:00:37,22	00:00:51,21	Giới thiệu	✓	---

#### 2. The operation is automatically logged in the system:

DATA	STATO	OPERAZIONE	NOTE	MACCHINA	OPERATORE	PROCESSO	APPLICATION	COD_USER	Tape	Parte	Suo	FIL
26/07/2012 09:12:27	✗	Transcoding	Dangling tran forcibly closed	TRANSCODE2	usrtranscode2	XCode From Archive To PRO: Transcoding						
26/07/2012 09:12:28	☺	Transcoding	\\mids\fs0\LOWRES\1000.wmv	TRANSCODE2	usrtranscode2	XCode From Archive To PRO: Transcoding						
26/07/2012 09:21:34	☺	Segment	Terminated 26/07/2012 09:25:37	TRANSCODE2	usrtranscode2	CMS CC: Black Video search - Unknown						L
26/07/2012 09:21:36	☺	Copy		TRANSCODE2	usrtranscode2	Content Check	DataMover					
26/07/2012 09:26:23	☺	Copy	Workflow: ARCHIVE: Archive	HSM2	usrhsm2	HSM	HSM					
26/07/2012 09:28:13	☺	Copy	Workflow: ARCHIVE: Archive	HSM2	usrhsm2	HSM	HSM					
26/07/2012 09:31:32	☺	Archive	Workflow: ARCHIVE: Archive	HSM2	usrhsm2	HSM	HSM					
26/07/2012 09:38:15	☺	Archive	Workflow: ARCHIVE: Archive	HSM2	usrhsm2	HSM	HSM					
28/07/2012 08:55:44	☺	Delete	HSM cache management	HSM2	usrhsm2	HSM	HSM					
28/07/2012 08:55:44	☺	Delete	HSM cache management	HSM2	usrhsm2	HSM	HSM					
09/04/2013 16:53:08	☺	Transcoding	\\mids\fs0\Encodetudong\1000.avi	TRANSCODE3	usrtranscode3	TRANSCODE	Transcoding					
10/04/2013 09:32:21	☺	Edit	Delete metafile from Multisupport Manager: 10k	SNMP1	usrsnmp1	ASSET MANAGER	Media library					
10/04/2013 09:32:41	☺	Transcoding	\\mids\fs0\Encodetudong\1000.avi	TRANSCODE3	usrtranscode3	TRANSCODE	Transcoding					
03/05/2013 08:57:16	☺	Edit	Updated asset form	CATALOGING4	usrcataloging4	ASSET MANAGER	Media library					
05/10/2013 17:11:08	☺	Edit	Updated asset form	SNMP1	usrsnmp1	ASSET MANAGER	Media library					
30/01/2014 14:49:37	☺	Edit	Updated asset form	MICHAEL W7	michael	ASSET MANAGER	Media library					
30/01/2014 14:49:40	☺	Edit	Updated edl [version 9]	MICHAEL W7	michael	ASSET MANAGER	Media library					

### ▼ 3.6.2. Workflow logs

In the same way as for asset operations, all workflow operations are logged, they can be consulted under the “Workflow” tab of the **Media Library**:

ID	Log	Date	Action	Category	Status	Result	Notes	Login Name	User
218705		19/08/2013 16:55:28	End	System	Action complete			service_broker	
218704		19/08/2013 16:55:28	End	System	Action just activated			service_broker	
218703		19/08/2013 16:55:28	End	System	Action just activated			service_broker	
218702		19/08/2013 16:55:28	Ok to broadcast	Asset	Asset updated	0	Updated asset 1065 to Ok to broadcast	service_broker	
218701		19/08/2013 16:55:28	Ok to broadcast	Asset	Action just activated			service_broker	
218700		19/08/2013 16:55:28	Ok to broadcast	Asset	Action just activated			service_broker	
218699		19/08/2013 16:55:28	Set Editorial Approval Date T	Asset	Set current time	0	Updated asset 1065 setting item 0E EE 22:00:00.00.00	service_broker	

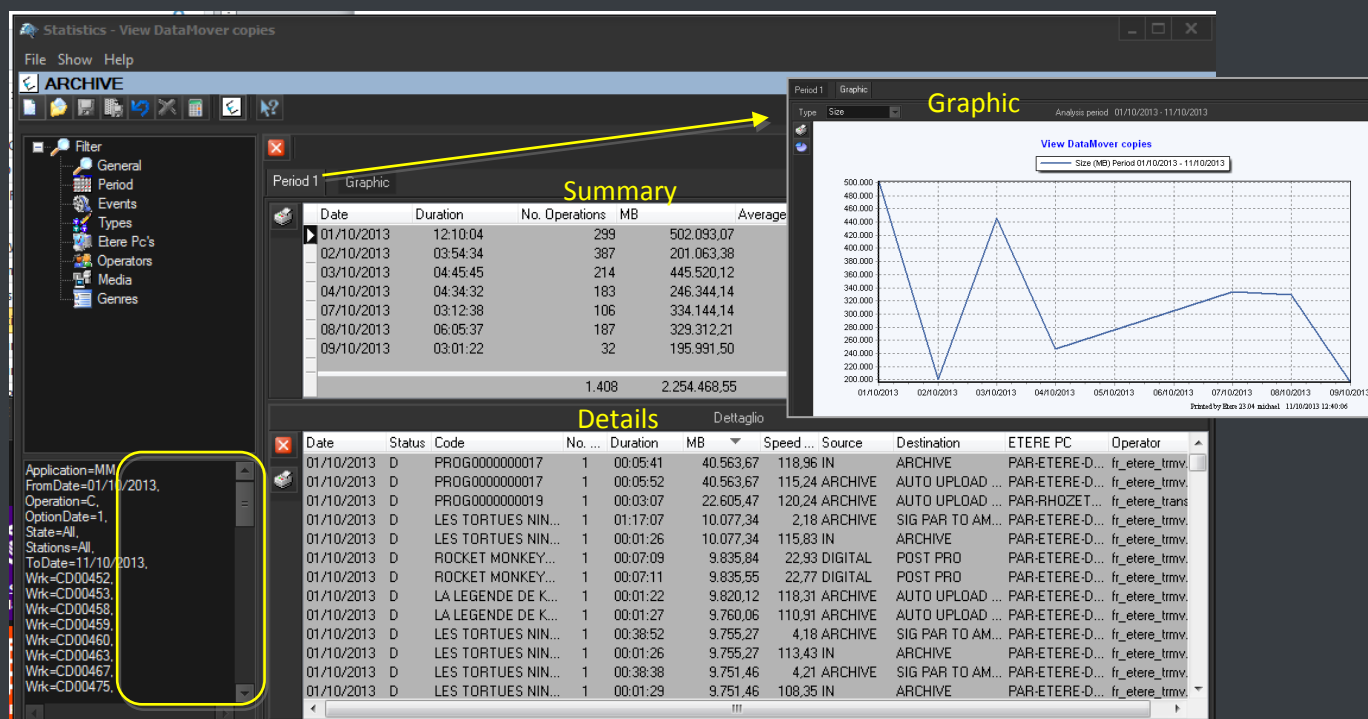
### ▼ 3.6.3. SMPTE stored values

Metadata automatically/manually compiled during the management of an asset can be consulted from the “SMPTE metadata” tab:

Field	Value
ABC	ABC356747
LBC	...
TX External	...
SBC	...
MTV Classification	IUM
Dubbing Company	...
Subtitle French	Request
Content Approval	Not Approved
Content Approval Date Time	14/08/2013 15:35:00

### ▼ 3.6.4. Statistics

View statistics on a certain function (e.g. DataMover copies), detailed by period, events, type, computers, operators, media and genres:



### ▼ 3.6.5. Reports

**Etere Reporting Services** provides an intuitive report environment to enable users to have an enterprise reporting environment enhanced with an unlimited number of custom reports; it enables reports to be easily designed and accurately managed through a reporting engine that allows to preview, print and export any report under a user-friendly user interface.

**Etere Reporting Services** integrates a dedicated reports database with the main system database, thus improving the reliability and performance of the system since all reports (and their settings and snapshots) are stored in a dedicated server.

1 CHANNEL 1

\*Tasks status by workflow

\*Tasks status by workflow

Workflow	RES - QUICK Censorship	Action	All
Assignee	All	*Validity period	1/07/2012 - 1/10/2012

\*Workflow - Action

Code	Title	Assignee	*Validity start	*Validity end	Status	*Executor	*Execution time	Duration	Result
RES - QUICK Censorship - WS Censorship Approval (w/p)									
2	Ferrari 150 spot	Vasquez Michael	18/09/2012 10:12:07 AM	25/09/2012 10:12:07 AM	Running				
2280	test work order	Administrators	27/09/2012 11:28:07 AM	4/10/2012 11:28:07 AM	To do				
3671	Casablanca	Administrators	27/09/2012 10:56:44 AM	4/10/2012 10:56:44 AM	To do				
3745	A blue automobile	Administrators	26/09/2012 4:05:22 PM	3/10/2012 4:05:22 PM	Done	michael	26/09/2012 4:06:09 PM	00:34:00	Approved

### ▼ 3.7. Documents Management

The **Document Management (Do.Ma.)** feature is a big deal for many enterprises especially when the amount of documents raises the cost of ownership to high levels. Reducing paper documents and cataloguing by digitizing and saving in a SQL database, allows an integrated enterprise information system. Information is easily available to the several production sectors, and they may be found in a very simple and efficient way by anyone looking for them:

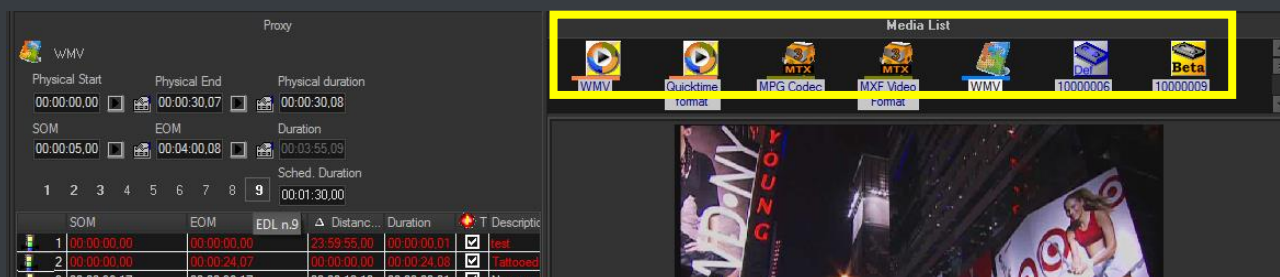


**Etere Document Management** allows you to associate many files to one "virtual document", in this way you can refer a group of documents to a user. A "virtual document" is a container that collects several documents, so you can associate a group of physical documents to a unique container, moreover the same document may be associated to several containers. Containers are connected to digital objects (e.g. contract scheduling details, scheduled events, personal data, account invoices, existing assets, receipt faxes, etc.), either acquired by a scanner or directly inserted, which will be stored into in the Etere's SQL database.

### ▼ 3.8. Multi-level storage hierarchy

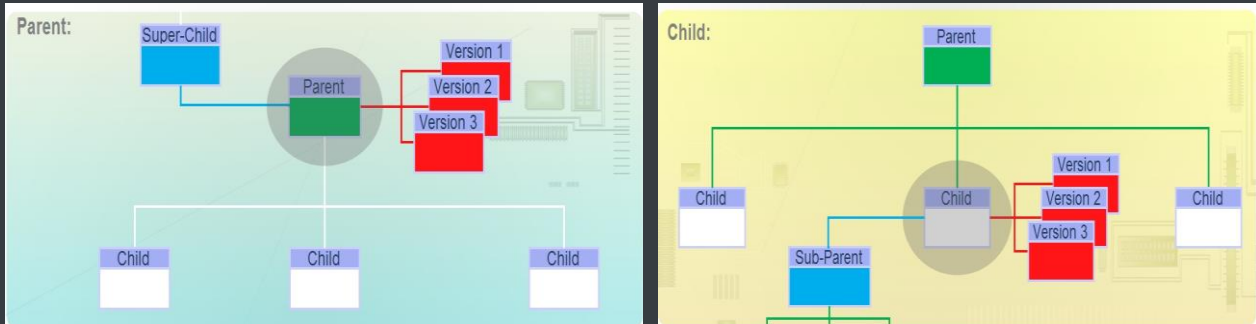
Etere systems improves the media management by introducing a **multi-level storage management** consisting in the use of different storage levels based on the frequency of use of the files stored on them. For example, data files which are frequently used will be stored on video servers (i.e. online servers) whereas those which are not used for a certain period of time (e.g. typically a few months) will be eventually archived in tapes (or any other long-term storage mean) and then automatically restored -to video servers- every time they are required by the broadcast playlist.

Etere offers a hierarchical storage management of media content, it allows organizing in user-specific levels an unlimited number of content versions with different access times (e.g. video servers, near-line servers, archive servers); all levels are available to operators under a user-friendly interface:



### ▼ 3.9. Multi-version management

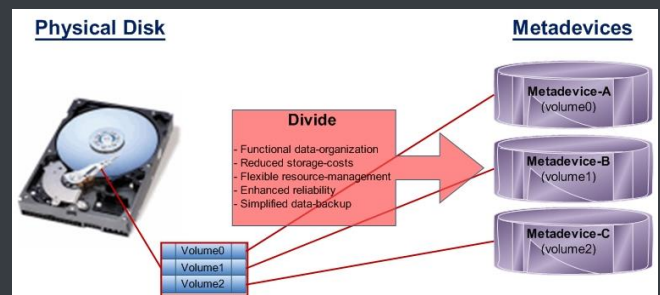
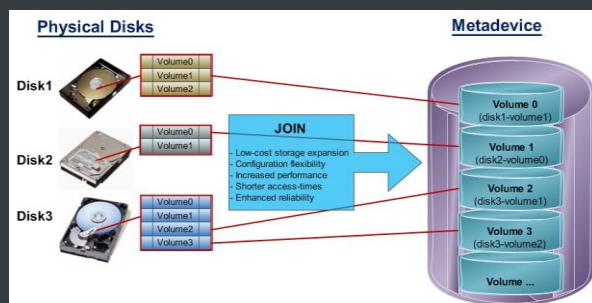
Assets (i.e. media holders) can be organized –along with their related information– under a hierarchical structure based on Parent-Children relationships, thus allowing, for example, handling different versions of a same asset and all the assets derived from them:



### ▼ 3.10. Multi-storage management

Etere reduce the complexity of managing storage devices by arranging physical storage devices present across the system into metadevices (logical devices), the use of metadevices improve the overall media management by offering the following features:

- Automated management via workflow of logical devices including archiving, restoring, transcoding, etc.,
- Monitored storage space owing to the set of restrictions,
- Increased storage and better performance since metadevices acts as a virtual device representing several logical disks or disk systems:
- Distributed storage according to specific requirements without the need of creating partitions, just associate individual disk volumes to different:



### ▼ 3.11. Distributed architecture

ETERE is an integrated broadcasting solution that implements a modular system formed by a set of modules specifically oriented to cover each complex phase of a broadcasting system, focusing to efficiently carry out specific operations such as ingest, archiving, transferring, browsing, etc.

All operations are synchronously performed within the same database environment and managed by suitable user-defined workflows. Etere modules comprised in the proposed solution will be treated throughout this chapter, explaining their roles in the global distributed and integrated system:



Here below are listed the modules provided by **Etere** to fulfill the requirements of **VTV**:

- **Etere Workflow**, automated management of assets and resources
- **Etere Ingest**, the flexible solution for capturing contents from a wide range of sources
- **Etere MAM**, provides the Resource Management capabilities for a workflow-based management of media tasks (e.g. manual QC) enhanced with preview and EDL features.
- **Etere HSM**, an automatic tape-based storage system for long-term management archive,
- **EtereWeb**, a secure and robust threshold to the station's outside world, a web-based interface that will permit a tight integration with NLE systems and remote facilities (e.g. post-production)
- **Etere DataMover**, the enterprise workflow-based media manager that guarantees timing and effectiveness on

## ▼ 4. KEY BENEFITS

With **ETERE**, **VTV** will benefit from all the advantages derived from an **enterprise workflow-based archive system**, including following present and future **operational benefits**:

- ✓ **Flexibility**, on meeting all requirements by proving a versatile media management system tightly integrated with all the metadata and equipment
- ✓ **Accuracy**, on all phases, reducing the risk of mistakes when archiving data since all archived contents are continuously checked and monitored
- ✓ **Scalability**, to increase the capturing/playing channels without altering the workflow complexity, minimizing operational overheads overall costs
- ✓ **Integration**, of non-linear editing systems to allow direct access to archive through a web interface empowered with the highest security standards
- ✓ **Efficiency**, achieved by reducing repetitive manual operations, allowing to define and include in advance in automatic preset workflows
- ✓ **Security**, across all operations based on specific user permissions depending on the structure of the customer's Active Directory domain
- ✓ **Reliability**, derived from the use of streamlined workflows provided with detailed logs for tracking the overall and individual functioning of the system
- ✓ **Usability**, a sophisticated interface guarantees a smooth use and intuitive management of media content, from ingest to delivery

## Etere: a consistent system!

Etere is an international leader in the media market. Etere develops and distributes a wide range of high technology software for broadcasting and media businesses. With more than 24 years of experience, Etere provides powerful, flexible, cost-effective, high-performance, end-to-end media solutions. Etere is the only company worldwide that can offer you a solution to all your media needs in one single package.

Etere is the only solution 100% workflow based for all broadcast and media environments. It's a common framework where there is real-time sharing of all the data among several applications to manage all media business requirements. The workflow approach allows a fully customized design with edge performances.

From its headquarters in Tolentino, Italy, Etere guarantees the best after-sales support service on the market with engineers ready to give professional assistance 24 hours a day, 7 days a week. The service includes voice, email, VPN and VoIP with unlimited calls and connection time, and a pro-active system to help diagnose problems before they appear.

### Contact Information:

Etere  
140 Paya Lebar Road, #06-16, Singapore 409015  
Telephone: +65 6950 4190  
Email: [marketing@etere.com](mailto:marketing@etere.com)  
Website: [www.etere.com](http://www.etere.com)