

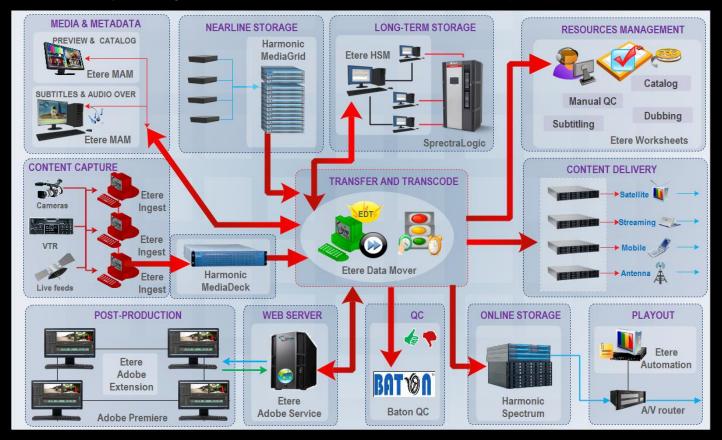
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**Media Nusantara Citra** (MNC) MNC is the largest Indonesian media company, founded in 1997 and 70% owned by PT Global Mediacom TBK group. **MNC**'s significant content library is the largest in Indonesia comprising entertainment and news content accumulated –with an increasing rate of more than 10,000 hours per year- from in-house produced content (movies, series, realities, comedies and films), third-party acquired content and multi-platform generated content.

# ▼ 1. CHALLENGE

To consolidate the position of **MNC** as major media company in Indonesia, ETERE has provided a **full enterprise wide media asset management system** to convert and manage digital content for multiplatform delivery including nationwide networks, television channels, newspaper, tabloids, and radio.



This paper illustrates a workflow-based approach that align processes and resources under a **ETERE MERP** approach, an "**enterprise wide**" strategy that removes the divisional and departmental barriers of the traditional system, unifying into one process-oriented and future-focused framework all **MNC key operations** to reduce time consuming and repetitive activities while maximizing the value of stored assets.

# ▼ 2. SOLUTION

Etere will implement a **"Full Enterprise Wide Media Asset Management System**" able to capture, store and transparently manage MNC's archived content over long term, our solution combines rock-solid reliability and high availability with increased bandwidth and storage, allowing operators to easily search, retrieve and browse media from the digital archive thanks to the following key features:

#### **KEY FEATURES**

- Distributed architecture managed via workflow to avoid any single point of failure
- Enterprise management of digital content under a file-based environment
- Seamless integration with existing and co-existing systems
- Fast, safe and fully-tracked local/remote access to the content archive
- Enterprise management and transport of media between storage devices
- On-demand media transcoding to always deliver the correct media format
- Quality control to ensure the reliability of archived assets over short and long terms
- High **preservation** and high **availability** of archived and catalogued media content
- Browsing features including preview, slow-motion, time code, bookmarking and metadata
- Robust editing functions including video cut, merge, overlay and restore
- Best flexibility on digitizing media content from multiple sources
- Full integration support for NLE systems including archive upload/download
- Reliable monitoring of the modules and equipment integrated within the global system

According to the requests of **MNC's engineering division**, the solution will act as a centralized, comprehensive and web-enabled archive able to cover the following workflow processes:

		MNC WORKFLOWS	
Req.	Process name	Brief description	Chapter
9.1.1	Ingest	Etere Ingest will acquire content in a Harmonic MediaDeck (MOV-DV and MPG-2) from all required sources (tapes, HDD, etc.).	<u>3.1</u>
9.1.2	Transcription	Etere MAM will provide a tool to import or create subtitles for content in foreign languages	<u>3.2</u>
9.1.3	Playout	Etere Automation will control the transmission of scheduled content with the maximum of reliability	<u>3.3</u>
9.1.4	QC	External QC systems (e.g. baton) will be integrated in the workflow for automatic verification, including a manual QC for double-check.	<u>3.4</u>
9.1.5	Archiving	Etere HSM will archive two LTO6 copies for long term storage of requested content and quickly restore them whenever it's required.	<u>3.5</u>
9.1.6	Transformation	Etere DataMover will transfer and transcode all content to different devices in different formats	<u>3.6</u>
9.1.7	Editing/Post-production	Etere Adobe's extension will allow Adobe Premiere stations to directly download/upload material whereas FCP stations will use EtereWeb to do so through a robust web interface.	<u>3.7</u>

# **3.** MODULES

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 these operations are synchronously performed within the same database environment and managed by suitable user-defined workflows that ensure an efficient overall system control; these are some of the main features that make of ETERE a solution that can easily fit any media management workflow. All modules that make part of the Etere's proposed solution will be treated throughout this chapter, explaining their roles in the global distributed and integrated system.

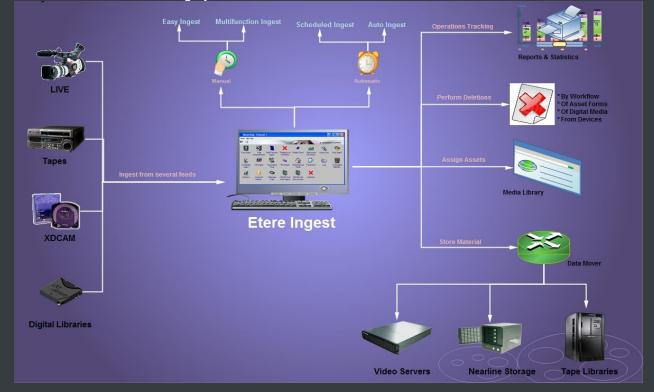
The modules upon which this project is cemented are listed below:

#### **ETERE MODULES**

- Etere Workflow, automated management of assets and resources
- Etere Ingest, flexible media acquisition from a wide range of sources including live feeds
- Etere MAM, resource management of tasks (e.g. QC, censorship, etc.) with preview and EDL features
- Etere Automation, redundant playout system supporting real-time device control
- Etere HSM, automatic tape-based storage system for long-term management archive,
- Etere DataMover, intelligent and fast transfers between devices (SAS, NAS, etc.), enabled with EDT protocol
- EtereWeb, web-based interface to exchange media with NLE systems (e.g. Premiere, FCP, Avid, Edius, etc.)

# ▼ 3.1. Ingest: A versatile acquisition system

Etere ingest is a versatile set of modular applications that significantly improves the digitization process inside a broadcasting system:



#### ▼ 3.1.1. Wide range of acquisition modes

Ingest covers any particular requirement of the entire process, automatic and scheduled captures:

,				
Multichannel ingest			16/0	1/2013 13:25:20 - Wednesday
Channel 1 Channel 2 Channel 3				
				X
Channel Next ingest Type ID Cod  Start -	le Description - Duration -	Start Mode · Stop Mode ·		
	Counter Free space			
HQ 1 STOP	00:00:00,00 21:37:45,	00		
BK 0				
LR 0				
🚟 VTR 1				
Scheduled ingest operations Errors				
DATE START	DURATION CH I	D_TIMEREC TYP	E ID_FILMATI	DESCRIPTION
20090618 14:53:24.04 20090618 22:00:00.00	00:00:10.00 1 2 02:00:00.00 1 2	2 S 0 S	0 0	Recording of "Oasis - She's Juventus - Real Madrid Cham
		Automatic ii	ngest	

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Et	ere Inge	est - So	heduled Ingest								
М	ultich	nann	el ingest				16/01/20	013 1	3:23:49	- Wedr	nesday
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	Show										
	Planne	d single	ingests								
	) Planne	d period	lical ingests				Channel	ALL	-		
	Planne	d sched	uled-Live ingests				From	16/01/2	2013 🚽		
		ted inae	est operations								Search
		eted inge	est operations								Search
			est operations	TIME	DURATION	DESCRIPTION				Event code	Search
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	D Comple	TYPE (		TIME		DESCRIPTION			SSET ID E	Event code	
	Comple D ID 23	TYPE (		TIME 00:00:00.00	DURATION	DESCRIPTION			SSET ID E	Event code	
	Comple D ID 23 29	TYPE ( TYPE S		TIME 00:00:00.00 00:00:00.00	DURATION 00:00:00.00 00:00:00.00	DESCRIPTION			ASSET ID E ASSET ID O	Event code	
	Comple D ID 23 29 22	TYPE ( TYPE S S		TIME           00:00:00.00           00:00:00.00           15:55:36.02	DURATION 00:00:00.00 00:00:00.00 01:00:00.00	DESCRIPTION			ASSET ID E ASSET ID 0 0	vent code	STATUS N
	Comple D ID 23 29 22 27	TYPE ( TYPE S S S S		TIME           00:00:00.00           00:00:00.00           15:55:36.02           17:00:00.00	DURATION 00:00:00.00 00:00:00.00 01:00:00.00 02:00:00.00	DESCRIPTION Dasis - She's electric			ASSET ID E ASSET ID 0 29	vent code	STATUS N
	Comple D ID 23 29 22 27 28	TYPE ( S S S S S S		TIME           00:00:00.00           00:00:00.00           15:55:36.02           17:00:00.00           19:00:00.00	DURATION 00:00:00.00 00:00:00.00 01:00:00.00 02:00:00.00 02:00:00.00	DESCRIPTION Dasis - She's electric Pathetique movement			ASSET ID E ASSET ID 0 0 29 3	Event code	STATUS N

Schedule ingest

Etere Ingest supports multiple parallel ingest streams, managed automatically either on a single workstation or across various workstations, allowing also to schedule the video files to be ingested:

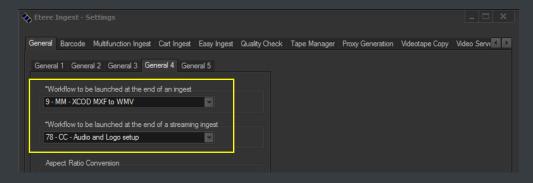
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Planning View

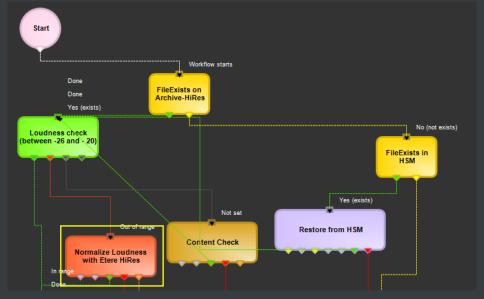
### ▼ 3.1.2. Automatic workflow actions

tere Ingest - Schedi

Once ingested, video files are transcoded into the specific format of the destination device on which they will be stored, in the same way, video files are transcoded each time they are moved from one device to another (e.g.: archiving, playout, etc.):



The image below illustrates how Etere allows setting the workflow to be launched at the start and end of an ingest process to for example, create a low resolution version or normalize the audio of captured contents:



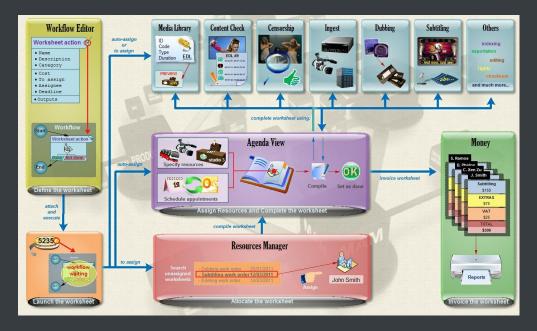
# ▼ 3.2. MAM: Browsing, editing and more

**MAM** will allow operators to store information, search media EDL, and transfer EDL-based media to the playout server and the editing systems:



#### ▼ 3.2.1. Resources management

**Resources Management** is the flexible solution that permits to virtually manage all operations actually involved in the media asset management, such as for example, subtitles generation, promo creation, tape copying, media editing, audio dubbing, etc. Etere integrates the management of worksheets, from their creation and compilation to their tracking and invoicing.



Page 9 of 68 © Contents of this publication may not be reproduced in any form without the written permission of Etere. Worksheets are based on a custom structure and are fully integrated into the workflow management, being possible to create user-defined worksheets and include them in automated workflows which current status can be consulted at any time in real-time from either a desktop or web interface:

Resources Manager	e	_	-							
Worksheet     Production     Acquisition	O To assign	🔵 Assigi	ned 🤇	AII						
WS Indoor shooting session(1)	Code	Descriptio	on	Workflow		Workflow status	Action status	Assignee	Sta 🔺	and the second se
WS Promo Creation (a.a.)(0)	3746	A blue aut	tomobile	RES - Dubb	ing (auto+none)	Workflow active	Waiting			*
Dubbing     WS Audio dubbing(5)	3671	Casabland	ca	RES - Dubb	ing (auto+none)	Workflow active				
WS Audio-Dubbing (a.a.)(0)	3068	Deep Trip		RES Dubb	ing (auto+none)	Workflow active				
Editing	26	Falling 🔋	🚽 *Assign w	oksheets						
WS Editing for censorship(0)	70	Jeux D	c Job info							
WS Media subtitling(1)	31	Juegos	Workflow		RES - Dubbing (	auto+none)				
WS Subtitling (n.a.)(14)	27	Just like	100000000000							
WS Tape-Copying (m.a.)(7)		Patheti	Action		WS Subtitling (n.	a.)				
Quality Control	3745	Riding	Asset		3746					
	FILM_ROUND12	Round			A blue automobil	e				
WS 1st censorship level(4) WS 1st Censorship Level (m.a.)(0)	3744	The ca	- Assignee							
WS 2nd Censorship level(5)	3748	The va	Assignee		Fellings Mark					N
WS Censorship Approval (w/p)(0)	3749	The we	-		Penings Mark					
	3085	Zi Yue	Group		-					et 1773
	•		*Job type		Task	Appoint	ment			
		-	Start		22 November 2	2012 - 15:26			*Jobs ca	lendar
			End		22 November 2	2012 - 15:26			Priority	Normal 💌
			Budget		Shooting TIME				10	
					2				Hours	•
			Notes		Both, english ar	nd italian subtitles are re	quired.			~

Worksheets related to media tasks (e.g. censorship, trimming, segmenting, subtitling, etc.) are greatly improved with the inclusion on key features such as proxy preview, slow-motion playback, EDL timecode marking, bookmarking navigation and metadata insertion:

Task			
Preview 4	🚳 🊧 🖪 📑 🕤		🗲 🔶 👧
	Vorkflow Action Assignee Asset	CENSORSHIP-APPROVAL CENSORSHIP CENSOR PROMO1_2 Promo1	Status Associ properties
	Period	27 March 2013 - 17:08	3 - 17:08
	Budget		
	Notes		
00:00:00,00 41 44 ► ↔ I> Preview PAL II 14 5huttle → HI Balance e,ee	-*Job execution	L	· · · · · · · · · · · · · · · · · · ·
🖹 🛃 📑 📰 💋 🗙 😰 🛛 🗖 EDL 1	Cost	None	•
	To invoice		
SOM 00:00:00.00 35 35 EOM 00:00:00.00 35 35	Notes		<u>^</u>
Noies			~
SOM EOM Notes	Result	-	
00:00:06.15         00:00:13:08         censored           © 00:00:30.15         00:00:37:24         censored		Censor is needed Censor is not needed	
00.00.30.15         00.00.37.24         censored           12         00:00:50.08         00:00:53.16         censored			

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# ▼ 3.2.2. Subtitles tool

The **"Subtitles Tool"** is the solution developed by Etere to give stations the ability of producing their own in-house subtitles (*e.g. subtitled movies, captioned news, etc*), providing all the tools required for an enterprise-class acquisition of subtitles:

🖉 Subtitles: ZZ-0000	069 - ZOOLANDER		1. JP 18	
- 100 C	Show Help			
C ARCHIV	E			
🍣 🏂 🛍	<del>- * <o del=""  }-<=""></o></del>	. 🕐		
Parameters	🖉 Language: Fr	ench (France)	• × [	A Preview ×
🔿 🗙 🞬	<b>11</b>			
SOM	EOM	Text		
01:07:33.10	01:07:37.12	vous me récompensez comme meilleur acteur et/ou modèle,		
01:07:37.14	01:07:39.03	et pas le contraire.		
01:07:40.24	01:07:43.12	La hausse des salaires nous ruinerait tous.		
01:07:43.15	01:07:46.09	Il faut agir. On me demande des comptes.		
01:07:48.08	01:07:49.15	Orange Mocha Frappacinos!		- Orange Mocha Frappacinos!
01:07:50.07	01:07:53.00	Plus de demi-mesures. Voici les vrais candidats.		- Orange Mocha Frappacinos! DS
01:07:54.12	01:07:56.22	Pour le trophée du modèle de l'année.		00:00.00 41 44 Preview
01:07:58.02	01:08:00.04	Jeune, sexy, fougueux !		PAL NI Balance
01:08:00.19	01:08:03.15	Cumulant les couvertures comme aucun débutant.		Subtitling parameters
01:08:03.18	01:08:07.09	Sa devise : "Bof ! Ce n'est que de la mode !"		📄 📰 🗠 📰 🤝 💬 🕍 🏹
01:08:07.13	01:08:09.17	Il est si tendance !		SOM 01:07:48.08 EOM 01:07:49.15
01:08:10.14	01:08:12.10	On dit : "Beau comme un dieu !	0	Orange Mocha Frappacinos!

- > Import from file: Import subtitles from up to 10 different standard formats.
- Speech to text: Directly dictate subtitles through an automatic speech recognition
- Manual typing: Enter subtitles in the classic way, useful when translating content

Subtitled media can be easily previewed from the "Media Library", which also allows importing and exporting subtitles as well as manually editing.



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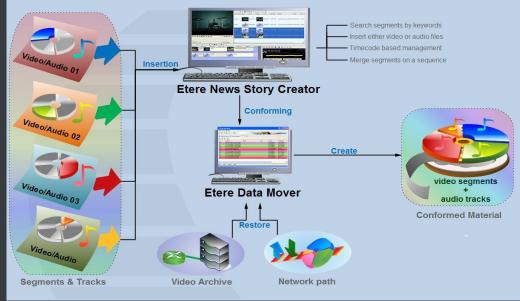
#### ▼ 3.2.3. Media cataloguing and Metadata insertion

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):

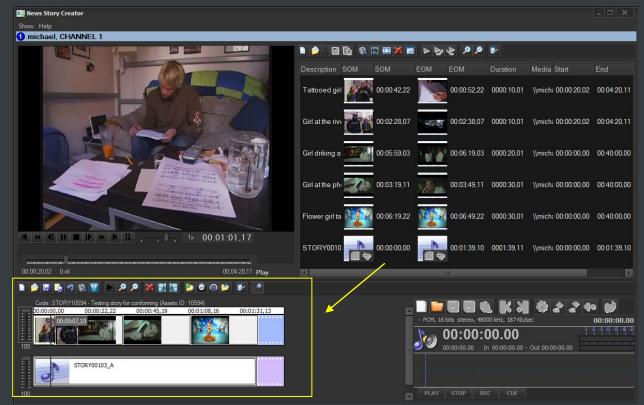


## ▼ 3.2.4. Video conforming and audio over

**MAM** permits to join cut segments from different sources, to create a single final video file containing all scenes selected by the operator:



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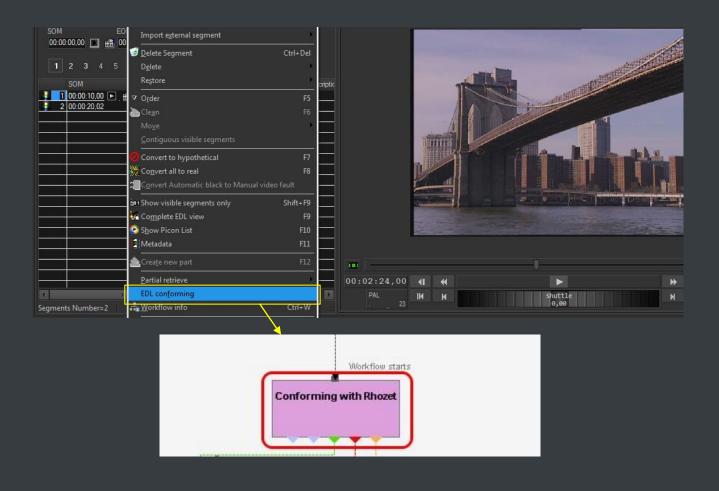
Use this function to, for example, dubbing contents by overlaying audio tracks over a video(s):

The image above illustrates the user-friendly interface on which operators creates new video sequences of MAM captions which includes all relevant metadata associated to the inserted scenes.



## ▼ 3.2.5. Partial media restore

Etere also allows restoring only a part of video files by creating either high or low resolution video files including specific segments described on the source video EDL, it is important to note that as usual on Etere's operations, the conforming of video files is fully performed via workflow:



## ▼ 3.2.6. Search engine

Etere media management applications are enabled 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. Results are displayed according to custom properties. Summarizing, Etere provides a robust search engine, which ensures you to instantly find the results that meet his criteria. Among the several searching features which are available in this section, we can mention the following ones:

🔖 Media Library, michael, C	HANNEL 1					
File Tools Show Utilities						
CHANNEL 1						
🖢 🖶 🗠 👘 🖑 🥳			3			
ID Code	Title				Episode	Version
Einks Search 🛗 Series M Standard Full-text	🗼 Operations 🎵 Manager 🛐 Properties 🖆 Me		Resources ma Secondary Events		*People in charge ghts management 🐉 Tapeless	i Proposal reception [[γ]] TechnicalData
						× 🔺
Code						0
Title						Starts with 🗙 🏾
	clip					
	Сар					
		Exclude				
× Workflow	CC - Loudness Normalizing	Preview				8
× Status	Workflow active					
Action						
Executed by		4				<b>•</b>
H 44 4 Þ ÞÞ	M					📰 Reset 🔍 Search
Icon ID Code	Title	Media	Episode Duration	Types Aspect Ratio S	ite Scheduled Anival	Supplier Quality Virtual D
	Wonderwall	002244225	1 00:00:30.08	CLIP 💻 E	tere TV (Rome) 04/07/2010	Quality 9 🥥
	Falling down	() Beta		CLIP 🔮 E	tere TV (Rome)	Quality 9
27 27	Just like a woman	4			tere TV (Rome)	Quality 0
3 3	Pathetique Movement				tere TV (Rome)	Quality 0
30 30	Don't go away				tere TV (Rome)	Quality 0
3085 3085	Zi Yue - Popularity	5 22 <b>0</b>			tere TV (Rome)	Quality 8
21 21	luogoo do Azor		1 00/05/20 00		torn TV/(Pomo)	Ouslity 0

- Search for assets based on keywords related to database fields,
- o A Full-text search can be carried out across the various fields of the assets,
- o Full-text results are sorted based on their degree of relevance,
- Users can search for keyword synonyms to extend the range of results,
- Searches can be saved as profiles,
- o Batch modification functionality, allows user to modify several assets at the same time,
- o Customizable tabs and fields, drag & drop enabled,
- The last arrangement of tabs and fields is stored,
- Results can also be grouped by their types, genres or artists,
- o Allows the user to add, launch and view workflows on-the-fly,
- o Custom configuration depending on the place from which the Media Library is launched,
- o Possibility of filtering results by their SMPTE metadata or Metadevice allocation.

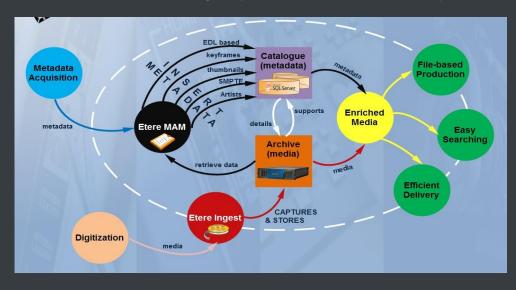
### ▼ 3.2.7. Logged operations

A dedicated section offers a list of all the operations performed on any asset (e.g. media linked, secondary event modified, metadata inserted, etc.):

ia Library, michael, Cl									
ools Show Utilities ?	·								
HANNEL 1				<b>A</b>		nà nà			
so 📓 🖶 🖑 🔣	- <b>1</b>	* 🚡	≒ lè li 🤔 🤔 🎽	و کې	🔀 🚥 🍖 🍖				🛕 File cop
Code 1			Title Wo	nderwall					Version 1
Search 💼 Gen	eral Data	Proper	rties 🚉 Media	🔝 Workflow	Resource	es management	Secondary Events	Metadata	🖉 Rights manage
Tapeless reception	🚺 Techr	nicalData	SMPTE Metadat	a 🔜 Links	🎵 SIAE	🧟 Operations	Keys/Keyboards	🐴 *People i	in charge 📁 Pro
	<b>V</b>								
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### ▼ 3.2.8. Integration between MAM and Ingest

**MAM** can be used along with Etere Ingest to enrich captured media contents and thus leverage all benefits of a file-based production including easy research and efficient delivery capabilities:



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# ▼ 3.3. Automation: Reliable playout system

**Automation** is the powerful, reliable and modular playout system able to enhance the station potential in terms of functions and workflow design, it is based on a unique approach which combines in a single product real-time device control and media asset management, offering a powerful mix of solutions and capabilities under a graphical user-friendly interface displaying for each event its source, type, description, properties, live status, secondary events, time code, GPI status, etc.:

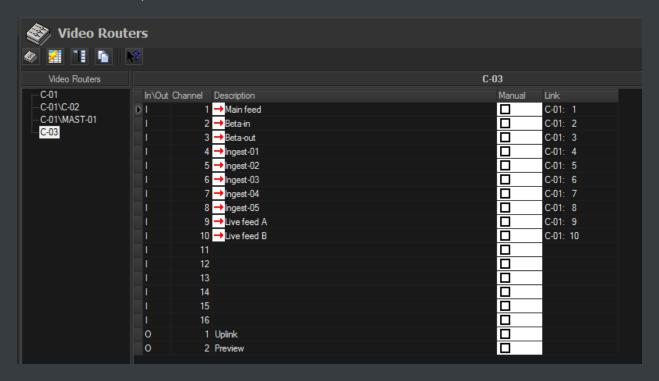
Countdown         Ive         types/break           Countdown         Countdown         Countdown         Countdown	
OAR 3D **-3 **-3 123 ** 139 130 ** 123 ** 127 ********************************	
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📘 😳 🖩 🛛 1/16/2013 12:15:48.04 00:00:40.08 123 SexyPhone2011 spot Commercial Pri OMT× 2939 🔮 🛈 🖗	7 🚳 🔊 🖬 🌉 🔤 👘
😳 👖 1/16/2013 12:16:28,12 00:00:30,01 3637 "Bee.Been"spot (Lucy Pinnield) Commercial Pri 0MTX 3637	
Sale         1/16/2013         12:16:58,13         00:00:30,08         1411         2010L-:Killer*cigarettes         Commercial Pri         OHTX         1411	
1116/2013         12:17:28:21         00:00:30.08         2         Ferrari 150 stpot         Commercial Pril         OMTX         2           Image: Commercial Pril         00:00:30.08         2         Ferrari 150 stpot         Commercial Pril         OMTX         2	
Intervent         Intervent         Entertainment         OMTX         3772           Intervent         Intervent         Intervent         Intervent         Intervent         Intervent	
Ministry         Ministry         Operation         Entertainment         OMTX         3063           Ministry         1/16/2013         13:03:38.04         00:01:00.05         8         Adagio         Entertainment         OMTX         3063           Ministry         1/16/2013         13:03:38.04         00:01:00.05         8         Adagio         Entertainment         OMTX         30           Ministry         1/16/2013         13:07:08.09         00:02:30.00         30         Don't go away         Entertainment         OMTX         1           Ministry         13:07:08.09         00:00:250.06         11         Wonderwall         Entertainment         OMTX         41           Ministry         1/16/2013         13:07:38.17         00:06:25.06         41         Alejandro Sanz-Misoledadyyo         Entertainment         OMTX         41           Ministry         1/16/2013         13:14:04/23         00:00:200.00         46         Stupidgiti         Entertainment         OMTX         45	
1/16/2013 13:03:38.04 00:01:00.05 8 Adagio Entertainment OMTX 2	
1/16/2013 13:04:38.09 00:02:30.00 30 Don't go away Entertainment 0MT 30	
1/16/2013 13:07:08.09 00:00:30.08 1 ₩vonderwall Entertainmen1_20MT× 1	
1/16/2013 13:07:38,17 00:06:26,06 41 Alejandro Sanz-Misoledad yyo Entertaingen 0MTX 41	🔤 🔊 🗖 🧱
1/16/2013 13:14:04:23 00:02:30.00 46 Stupid girl Enter Anneen OMTX 46	
Description 00:00:00,00 00:00:10,02 00:00:20,04 00:00:30,06	00:00:40,08
Logo 123 - SexyPhone2011 spot	
Execute command 00:00:00,00 after the event start - Stop command at 07:00:40,08 after the command is launched	d
Router  SecEvent [Secondary Object] Som: 00:00:15,00 Eom: 00 Code: 8/3 - Parameters: Execute command 00:00:15,00	
	3

### ▼ 3.3.1. Live events management

**Automation** offers complete support for live events present on the daily schedule, being possible to manage various different live inputs that can be switched at any time, few minutes before the event broadcasting or even during its transmission:

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	Status	Tx T	ïme		Info Tx	Diffe	rence		Description		Media	1		Marks		Properties	De	vices	
		D	11:30:0 16/01/201			•	+5:30:07		News_National National Live Ner	ws		LIVE000	01	00:00:00,00->0 00:45:00,00		<mark>⊛</mark> ⊤	<u>ک</u>	• 4P	
€	00		12:15:0 16/01/201			•	+5:30:07		PromoE01 PROMO Etere TV	/ 001	<b>e</b>	MTX	2936	00:00:00,00->( 00:00:40,0	3	<mark>⊛</mark>	<u>ک</u>	• 4A	
	00		12:15:4 16/01/201			•	+5:30:07		123 SexyPhone2011	spot	<b>a</b> o	MTX	2939	00:00:00,00->( 00:00:40,0		😔 🗖	<u>ک</u>	• 4P	
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			II Still	<b>II</b> ] D-STILL	SKIP	<b>K</b> RESTAR	KM T Recue	<b>PROTE</b>	OT CLONE	UVE S	SK2LIVE	D-STOP	ST	ГОР					4P

Additionally, Etere allows managing one video router per automation, being possible to create links between routers so when a channel is switched in the Main Router; the equivalent channel is also switched in the Backup Router:



#### ▼ 3.3.2. Secondary events manager

**Automation** manages all the secondary events intended to be transmitted by dedicated devices (e.g.: Logo Generators, Crawl Generators, Subtitlers, etc.) with a simple graphical tool, allowing previewing secondary events in low res before their playout through a browsing application:

-																
		tions Edit	Tools AE	) Insertio	on AirSal	es Show	/ Help						Real schedule	Manda and avail	C 1	. 2012
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		1/16/2013		5:48,04	00:00:4			SexyPhone2011 spo				0MTX 2939	¥ 🚺 🖉	<b>B</b> 🖉 🔁 🖗 🔁		
6		1/16/2013		6:28,12		0.01 3F		"Bee.Beer" spot (Lucy 2:15:07 to 12:15:48			Commercial Pri	0MTX 3637				
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i 👬		1/16/2013	12:2	8:28.02	00:09:							Y Land				
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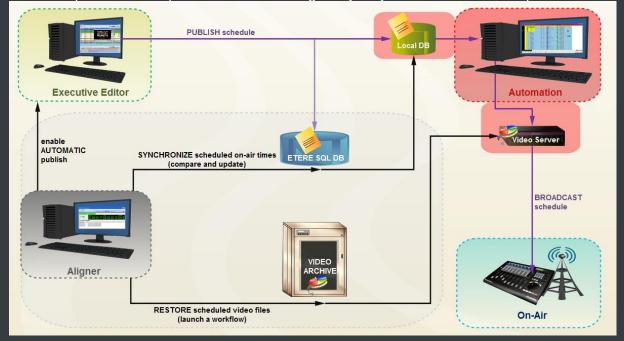
#### ▼ 3.3.3. As-Run Logging

The ability to export As-Run logs containing the schedule "actually" transmitted allows an easy reconciliation between planned and real playout, being possible to send to multiple (UNC and FTP) destinations a frame-accurate log in any of the available formats:

[-]04	28 15:09:20.593    Log Started
[ APF	] [2010-04-28 15:09:20.21AUTOMATION RESET
[ APF	] [2010-04-28 15:10:31.05AUTOMATION IS ONAIR
[ CLI	<b>[2010-04-28 15:10:30.17Y</b> , 210136785149, 22, 0LIVE00000 , Live News , F, 00:00:00.00, 00:59:59.24, 01:00:00.00
[ CLI	[2010-04-28 16:10:01.19Y, 210135546001, 28, 0MCL CBBot , B-Bottles , F, 00:00:00.00, 00:00:08.18, 00:00:08.19
[ CLI	[2010-04-28 16:17:03.21Y, 210136107001, 70, 0MCL JeuxD , Jeux D'E , T, 00:00:00.00, 00:30:00.00, 00:30:00.01
[ CLI	[2010-04-28 16:47:08.02Y, 10000008996, 3 , 0MCL PathMov, PathMov , T, 00:00:00.00, 00:08:12.24, 00:08:13.00
[ APF	] [2010-04-28 16.48.13.20PLAYOUT COMMAND: STILL
[ APF	] [2010-04-28 16.48.14.19PLAYOUT COMMAND: RESTART_FROM_CURRENT
[ APF	] [2010-04-28 16.48.20.07PLAYOUT COMMAND: STILL
[ APF	] [2010-04-28 16.48.23.01PLAYOUT COMMAND: RESTART_FROM_NEXT
[ CLI	] [2010-04-28 16:48:23.01Y, 10000008998, 32, 0MCL Minuet, Minuet, T, 00:00:00.00, 00:11:10.24, 00:11:11.00
[ CLI	[2010-04-28 16:52:12.06Y, 10000009000, 33, 0MCL Prima, Primavera, T, 00:00:00.00, 00:09:19.24, 00:09:20.00
[ CLI	] [2010-04-28 16:54:13.12Y, 10000009003, 49, 0MCL Vivace, Vivace, T, 00:00:00.00, 00:04:59.24, 00:05:00.00
[ APF	] [2010-04-28 16:55:16.11PLAYOUT COMMAND: SKIP
[ CLI	] [2010-04-28 16:55:16.11Y, 10000009005, 51, 0MCL OdeJ , Ode Joy , T, 00:00:00.00, 00:04:59.24, 00:05:00.00
[ CLI	[2010-04-28 16.57.46.19Y, 100000018164, 12, 0LIVE00001, Meloldy01, T, 00.00.00, 00.00.14.24, 00.00.14.15
[ APF	] [2010-04-28 16.59.53.01PLAYOUT COMMAND: EMERGENCY_LIVE_START
[ APF	] [2010-04-28 17.05.57.05PLAYOUT COMMAND: EMERGENCY_LIVE_END
[ AP]	] [2010-04-28 17:15:35.06AUTOMATION STOP
Log Clo	ed

#### ▼ 3.3.4. Synchronized broadcast

Aligner is the application that maintains the published schedule constantly synchronized, it aligns the independent automation schedule with the Etere stored schedule, this operation is very important for the broadcast process since published on-air timings may vary and will need to be updated:



Etere Aligner provides stations with the following key features on managing broadcast schedules:

- Automatic publishing of the schedule by Executive Editor,
- Ensure consistency of the published schedule by updating it with last changes,
- Launch workflows automatically to restore video clips scheduled to go on-air.

In the Parameters it's possible to specify that the system also carries out publication of the schedule at each **Etere F90** request.

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aumain - On-Air - Main			auclone - Idle - Clone	
<i>₹</i> ∕∕ ● ►	countdown	live	types/break	
aumain     auclone	00 : 08 : 24	1,01 01:22:	12,16 00:08:8	24,00
OAR 3D		VTR Beta-01		
On-air, schedule of 1/	16/2013			
Schedule Update	File			
1/16/2013 12:06:39 16/01/2013 11:32:33	\\michaelw7\etereau\user.001\2013\T \\michaelw7\etereau\user.001\2013\T			=

Page 20 of 68 © Contents of this publication may not be reproduced in any form without the written permission of Etere. Moreover, **Etere Aligner** allows restoring via workflow all those video files associated to scheduled events and which are missing in the remote archive, either manually or automatically:

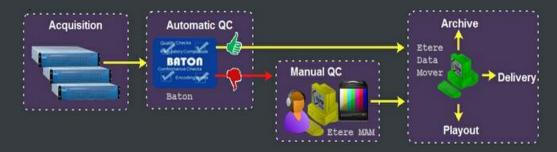
8	Schedule Param	ieters						
••••	2 🧭							
闅 GI	obal 🕕 CHANNEL 1 🥈	Automation 📑 Seco	ondary Events as a default	🍰 Alternative schedules	Break in Live	🎆 Live Assist	💐 Synchronized playlists	📓 Air Sales
1	The clip must be pre	owing devices: MATROX I esent in at least one device esent in all devices of each	for each automation automation	TX3-HR				
	Restore the clips also in the GVG1	MATROX MTX1	S Automation devices):	IX15 🔲 MATRO	X MTX5	OMNEON SPE	ECTRUM14 🔲 OMNEON1	
	Automation devices	Digital devices only	<b>•</b>	The first daily event mu	ıst be Fixed			
	Allow media stored in di	fferent video servers		Notify events with video q	uality lower than	0		
	Warning if missing file in	n backup video server		Bumper duration	0000:00,12			
	Clip name in scl	hedule according to the co	dec priority					

# ▼ 3.4. QC: automatic file-based quality check

Besides **Etere CMS** (see chapter <u>4.10.1</u>), the software solution developed by Etere to provide filebased detection of audio/video issues (*e.g. freeze frames, black frames, scene changes, audio loss, loudness, etc.*), Etere also allows integrating third party QC systems into its workflow environment.

#### ▼ 3.4.1. Baton QC

**Etere Workflow** provides the ability to integrate **Baton systems** and automatically request the execution of verification tasks based on Baton test plans for media files stored on **Etere MAM**:



Combine automatic control with manual control to ensure the quality of your valuable content:



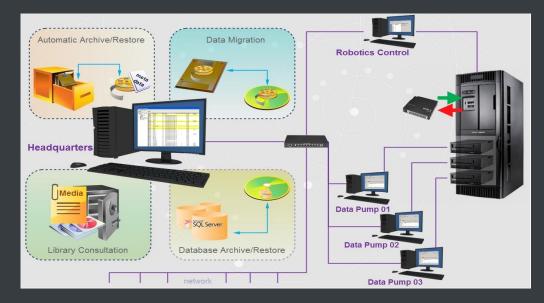
Results are saved as **PDF/XML reports** stored in the database, and linked to verified assets.

1 <b>1</b>	MPG Codec				
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SOM 00:0		Duration 5:20.24 🔳 🏥 00.05:19 Sched. D			Verification Report
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Ċ	1 00:00:00.00		00.00.00 00.00.01	System item, timecode discontinuity for	
	2 00:00:00,00 3 00:00:19,00		00:00,00 00:00:00,01 00:19.00 00:01:09,17	The number of audio channels does n     Video freeze	Balter Buskurger Lateran

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# ▼ 3.5. HSM: intelligent long-term storage

LTO tape libraries present in the station will be managed by **Etere HSM**, the cost-effective solution to radically streamline the management of expensive tape libraries; allowing stations to optimize the migration of contents including high and low versions as well as associated metadata.



**HSM** improves the management of libraries by controlling their mechanical movements through the HSM Robotics Control and HSM Data Pump applications, which are able to run several data pumps on different machines to boost their throughput, while offering access to real-time logs, reports and statistics.

Monitor MASTER/CLONE	<b>⊘ №</b> ?									
Etere HSM - Headquarters							-			
a Servers	Таре	Media Pool	Slot	Drive	Used	Test	Free space	Used Space	Space deleted	Library
► HSM1	0008B3L5	MP MAIN		1002	х		0 bytes	1,30 TB	138,38 GB	HSM1\SON
Media	0008B4L5	MP MAIN	3037		Х		54,00 MB	1,38 TB	0 bytes	HSM1\SON
Workflows	0008B5L5	MP MAIN	3012		Х		4.15 GB	1,37 TB	0 bytes	HSM1\SON
Operator Requests	0008B6L5	MP MAIN	3004		Х		4,16 GB	1,38 TB	0 bytes	HSM1\SON
Work queue	0008B7L5	MP MAIN	3074		Х		13,13 GB	1,37 TB	0 bytes	HSM1\SON
	0008B8L5	MP MAIN	3099				1,36 TB			HSM1\SON
	0008B9L5	No Media Pool	3003		х		1,23 TB	156,16 GB	108,91 GB	HSM1\SON
	0008BAL5	MP MAIN	3007		Х		195,00 MB	1,38 TB	0 bytes	HSM1\SON
	0008BBL5	MP MAIN	3005		Х		587,00 MB	1,38 TB	0 bytes	HSM1\SON
	0008BCL5	MP MAIN	3011		х		370,00 MB	1,38 TB	89,46 MB	HSM1\SON
	0008BDL5	MP LOWRES BKP	3018				1,36 TB			HSM1\SON
	0008BEL5	MP LOWRES MAIN	3021				1,36 TB			HSM1\SON
	0008BFL5	MP MAIN	3013		Х		2,12 GB	1,38 TB	0 bytes	HSM1\SON
	0008BGL5	MP MAIN	3002		Х		1,38 GB	1,38 TB	0 bytes	HSM1\SON
	0008BHL5	MP MAIN	3019		X		5,08 GB	1,38 TB	0 bytes	HSM1\SON
	0008BJL5	No media pool2copy	3006				1,36 TB			HSM1\SON
	0008BKL5	No media pool2copy	3016				1,36 TB			HSM1\SON
	•			m						•
	Page 1	(0008B3L5-0008CJL5)	•		Records: 50	0/101				

**Etere HSM** distinguish four different archiving levels into a broadcasting workflow, these levels required distinct access times which vary from 0 minutes (video server) to 15 minutes (standard video tapes). All these levels are managed "virtually", that is, you can use logical devices (metadevices) based on physical devices to free design your storage layout, enriching in this way the entire system with the benefits derived from the use of metadevices:

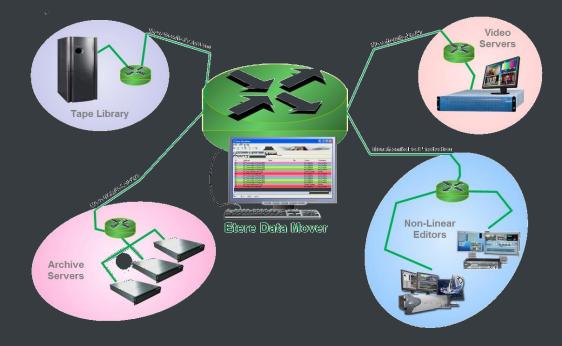
File       Configuration ?         MASTER [NO CLONE]       ?         Library       Properties       Contents       Slots       Drives       IEPorts       Operations	<ul> <li>Carry out loan-balanced movements on an intelligent multi-volume scenario,</li> <li>Extend your storage space by joining</li> </ul>
Slots     Drives     etilbraryws2008\IBM 357       4096 @ 459AAGL5     256 @ 457AAGL5     SCSI Library (driver-claimed)       4098 @ 456AAGL5     257 @ 455AAGL5     Licensed slots: 10       4099     4100     4101     Intersection       4102     4103     104     105	<sup>3-TL</sup> physical devices into one metadevice, without altering the archiving workflow,

**Etere HSM** forms a tandem with Etere Data Mover to be the only solution in the market with an embedded multi-level and multi-rule cache that offers an intelligent management which ensures the best performances with low investments.

Moreover, owing to Etere's comprehensive character, these applications are perfectly integrated with other modules (e.g.: Ingest, EtereWeb, etc.) to allow all these modules to use shared resources and have unlimited communication.

# ▼ 3.6. DataMover: Intelligent archiving and delivery

The Media Management solution proposed to encompass station's content transfer and archiving goes beyond of a simple copy concept by moving video files based on custom policies, transcoding video files when required and offering a full track of all operations.



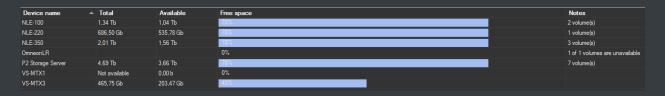
#### ▼ 3.6.1. Simple and user-friendly interface

Video contents will be transferred between the various departments (e.g.: near-line storage, archive, post-production, playout, browsing, and even non-Etere systems) by Etere DataMover; this migration process also includes rewrapping and transcoding capabilities.

🧧 Etere Data Mover							
Tools Show Help							
) michael, CHANN	EL 1						
) 🖬 📾 🖾 🗎 (	2 🔁 🕕						
🐝 Data Processors 🛛 🜌	Active Requests 🖷 Job queue 💻 Log	g					
itatus	Name	#	File	Source	Destination	Types	
ldle Idle Idle	CHECK-MD5 on Arch-Hires CHECK-MD5 on Arch-Proxy CHECK-MD5 on MTX1	1 1 1		Archive-HiRes Archive-Proxy MATROX MTX1		MD5 Checksum MD5 Checksum MD5 Checksum	
Offline	CONFORMING MXF USING etconfor	1		NLE	NLE	External Mover Exe	
Running	CONFORMING WMV USING etconfo		10594 / MM - CONFORMI	NLE	NLE	External Mover Exe	
ldle Idle Idle	Conforming WMV USING etconform.e CONFORMING WMV USING etconfo Content Check (Content Check)			PartiallyRestored NLE	PartiallyRestored NLE	External Mover Exe External Mover Exe External Mover Exe	
ldle Idle	Content Check (Content Check) Content Check (Content Check)	2				External Mover Exe External Mover Exe	
ldle	Content Check (Content Check)	4				External Mover Exe	
⊖ Offline	COPY from Arch-Hires to Arch-Proxy	1		Archive-HiRes	System Storage	Masstech Mover	
ldle - اد ا	COPY from Arch-Hires to MTX1			Archive-HiRes	MATROX MTX1	Multistep Copy	
M: Y TR: Y 00:04	sync2						

### ▼ 3.6.2. Logical management of data

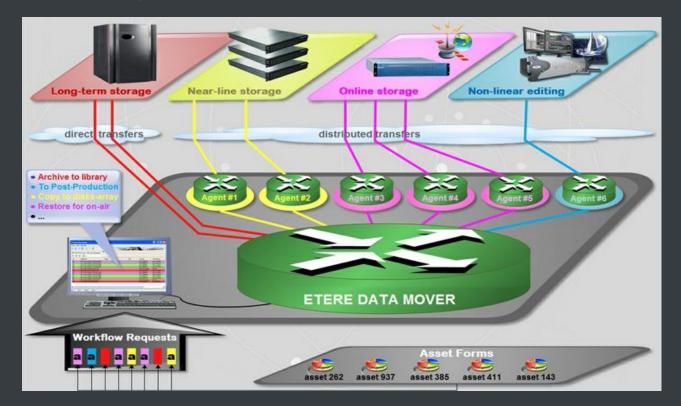
Etere's approach is oriented to "virtualize" the entire media management process, improving it with flexibility, customization and most important cost-effectiveness. Etere manages (logical) metadevices instead of (physical) devices, this approach results in a wide range of possibilities for the media management, for example, it is possible to control with one click the available space of all metadevices:



**Data Mover** is the application used to perform the physical storage and retrieval of video files, a typical Data Mover operation would be to move a video clip from a video server to an archive based on custom actions which are defined and executed via workflow.

## ▼ 3.6.3. Distributed parallel jobs

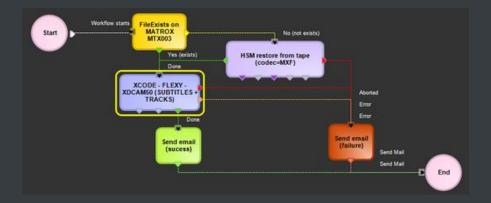
**Data Mover** is capable to provide both, distributed processing for using an independent agent per data transfer and parallel processing for simultaneously performing different instances of one data transfer; these features will allow stations to exploit high computing resources to use a single workstation to perform multiple transfers, thus enhancing the flexibility, scalability and fault-tolerance of the entire Etere system.



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## ▼ 3.6.4. Integrated transcoding

Etere's integration with **Carbon Coder** software handles a wide array of critical operations including format conversions that ensures content to be always stored in the right place in the right format:



Etere provides multiple ways to use Carbon Coder within workflows, you can use Carbon **presets** as well as complex **projects**:

掌 Transcoding					
💁 📭 💕 X 📷	<b>同</b> つ			138	95 [mm-tr-76afd270-9492-4e55-9e9
		Device	Codec		
Show all Columns	1200232	Current metafile			
		Archive-HiRes	<ul> <li>XDCAM 50</li> </ul>		-
XCODE - BATCH - Normalize Loudness	Destination	NLE	- WMV		•
XCODE - BATCH - OMNEON1 to MTX1 XCODE - BATCH - XDCAM50 to WMV	Process type	Flexy Converter	•		
XCODE - BATCH - XDCAM5016 WMV					
XCODE - FLEXY - XDCAM5016 WMV	Basic Settings	Process settings			
XCODE - RZCP - DV25 to DV25	Carbon Ta	ısk Builder			
XCODE - RZCP - PROXY to NLE	😽 😽 Carl	oon Project			
XCODE - RZCP - WMV with Subilities					
XCODE - RZCP - XDCAM50 to WMV	My H	oject 01			
	¥ Out	out			
	0 m	t filename			
		3s.WMV			%0:s Media name as requested
	Outpu	i esth			%1.s Media name without extension %2.s Asset ID
		//nle:1234@172.31.230.106/	HD100-V0/		%3.s Asset code %5.s Files path
					%6s Unique name %7s Custom name
	¥ 0th	er Settings			
	Path b	o Carbon Command line tool (rz	icp eve)		
	C:\Pr	ogram Files (x86)\Rhozet\Carbo	an Coder\		
	Comm	and line options			
	dhen	ewait			
	Job ou	tput path			
	C/U8	ers\MICHAE~1.ETE\AppData	\Local\Temp\Etere		
		ste custom name			
	qara	m type="filmati">ID_FILMATI </td <td>/param&gt;_qparam type="smpte"&gt;0f</td> <td>06 00 00 00</td> <td>8</td>	/param>_qparam type="smpte">0f	06 00 00 00	8

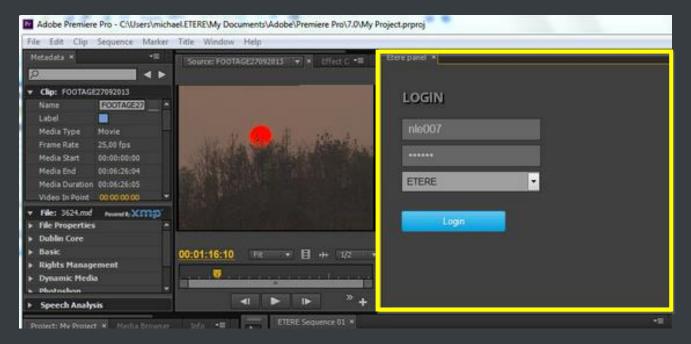
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# ▼ 3.7. NLE Plugin: Tight post-production integration

Besides the universal NLE integration provided by **EtereWeb** for media download and upload, Etere also offers more tight integration for specific editing systems, allowing to directly access the MAM system from within the NLE interface to any user authenticated in the system.

### ▼ 3.7.1. Adobe extension

The **Etere's Adobe Extension** enables **Adobe Premiere Pro** users to access an Etere MAM platform without leaving their editing workspace, allowing each user to quickly and easily create and deliver their own requested content through a user-friendly interface:



The integration is based on two components: the <u>Adobe Web Application</u> which is the html5-based application that makes the **Etere MAM** system available through the <u>Adobe Extension Panel</u>, the interface that allow users to graphically interact with Etere content from **Adobe Premiere Pro**:



# MEDIA NUSANTARA CITRA A Full Enterprise Wide Media Asset Management System

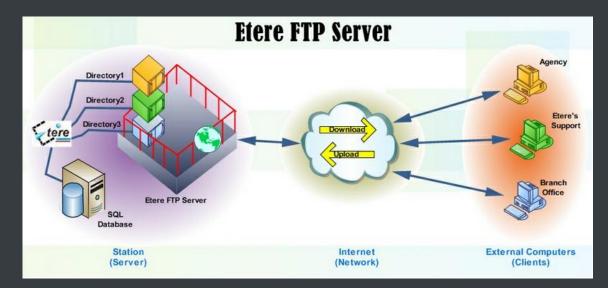
The advanced, efficient, and practical extension panel will improve the way Adobe Premiere users contributes their content to Etere MAM systems, this, through the following features:

Edit Clip Sequence Marker Tit	le Window Help								
e panel × Metadata Effect Contr	ols				*1	Program: ETE	RE Sequence 01 🔻 ×	Source: ETERE Sequence 0	1: CL
usks : Mc Manhara	My task:	Search	Send to Ete	re Settings	Log-out		*****	1997	
vailable tasks	▼ Time range				5			att the second s	
	Description								
WS Downtoad & Edit (NLE)	Stir it up		16/12/2013	23/12/2013					
WS Download & Edit (NLE)	Turn the lights down		16/12/2013	23/12/2013					
WS Download & Edit (NLE)	Ferrari 150 spot		16/12/2013	23/12/2013					-
▶ WS Download & Edit (NLE)	Pathetique Movement		16/12/2013	23/12/2013				HILL PL	5
WS Download & Edit (NLE)	Despedida		16/12/2013	23/12/2013					
WS Download & Edit (NLE)	Like a rolling stone		16/12/2013	23/12/2013					
WS Download & Edit (NLE)	Adagio		16/12/2013	23/12/2013					è
WS Download & Edit (NLE)	Blank Bottles 2009-IV		16/12/2013	23/12/2013		-0	00:00	:15:07	
WS Upload edited (NLE)	XYZ spot 2001		16/12/2013	23/12/2013					1
WS Upload edited (NLE)	Jeux D'Enfants		16/12/2013	23/12/2013					
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			6 A3 8	M S	E .				
			& A4 🕾	MS					
💻 🔺 0	III 🔎 🖿 🖬 🏛			10					

- Content delivery based on login authentication
- Search for Etere MAM segments
- Manage up to five different status for segments
- > Insert an Etere MAM segment into an Adobe Premiere sequence
- Conform an Adobe Premiere sequence and upload it in Etere MAM
- Nunzio integration to deliver material related to rundown stories
- > Centralized workflow media management without heavy file transfers nor duplicated media

# ▼ 3.8. FTP Server: A fast and reliable data sharing

Etere FTP Server is a special product mainly designed for sharing large video files, so most of its efforts are directed toward optimizing the file exchange process. Its unique architecture allows you to share large files minimizing fragmentation, improving in this way its overall performance by almost 20% more than any other currently available FTP software.



**Etere FTP Server** is a really useful tool, with a great performance and scalability as usual in Etere applications, it provides an advanced feature set, giving you total control through a simple and intuitive interface which makes of **Etere FTP Server** easy to configure and use. Its advantages and salient features are described in brief in the following key points:

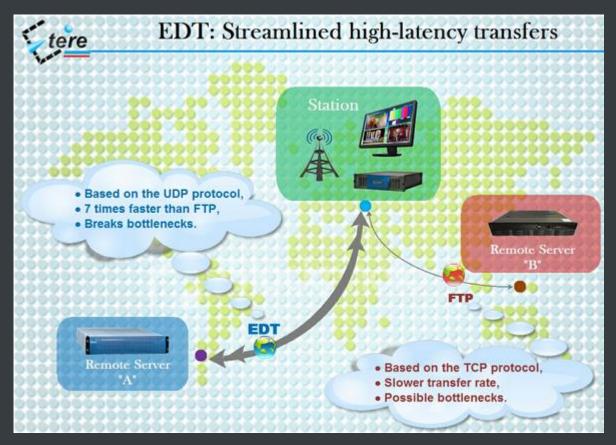
- ✓ Allows external entities to exchange (either upload or download) files with your organization.
- ✓ Avoids excessive disk fragmentation,
- ✓ Easy, reliable and efficient transfer of High volumes of data,
- ✓ Capable to share an unlimited number of directories to specific users.
- ✓ Availability of the new EDT technology to increase the transfer rate efficiency in up to seven times on high-latency WAN networks.

**Etere FTP Server** provides a wide set of parameters (e.g. enabled users, EDT ports, etc.) and a detailed log of <u>operations</u> and <u>connected users</u>:

🖻 Etere FTP Server			– Etere FTP Server
File Server Log Style Help			File Server Log Style Help
🕨 Start 💶 Stop 🔲 🔲 Show Activity 🥔 🤇	ear Activity		🕨 Start 🔎 Stop 🗹 Show Activity 🥒 Glear Activity
= Activity Configuration			🕫 Activity 📃 Conliguration
= Activity 🔄 Conliguiation			15 /
Users	Server		5.19.44.046 [delivery0172.31.230.106:60847] > NOOP
Default User	IP Address	Port	5.19.44.057 [delivery@172.31.230.106:60947] < 200 Ok. Parameter was ''. 5.19.44.070 [delivery@172.31.230.106:60947] > CWD /
External	Any IP 🗙 0.0.0.0	21	5.19.44.076 [delivery@172.31.230.106:60847] < 250 CWD command successful. "/" is current director
Delivery Editing			5.19.44.082 [delivery@172.31.230.106:60847] > PWD 5.19.44.087 [delivery@172.31.230.106:60847] < 257 "/" is current directory.
		Idle timeout Transfer ti	flimeout 5.19.44.093 [delivery@172.31.230.106:60947] > CWD / 5.19.44.098 [delivery@172.31.230.106:60947] < 250 CWD command successful. "/" is current director
List of enabled	0 60	300 0	5.19.44.113 [delivery@172.31.230.106:60847] > TYPE I 5.19.44.118 [delivery@172.31.230.106:60847] < 200 Type set to Operations
List of enabled			5.19.44.118 [delivery@172.31.230.106:60847] < 200 Type set to CUCICUIS 5.19.44.125 [delivery@172.31.230.106:60847] > P&SV
usors (featuring	Passive mode		5.19.44.129 [delivery@172.31.230.106:60847] < 227 Entering Passive Mode (172,31,230,68,225,170). 5.19.44.136 [delivery@172.31.230.106:60847] > SIZE projectx.waw
users (featuring	IP Address	Port Range Start Port Rang	nge 5/2e 5.19.44.141 [delivery@172.31.230.106:60847] < 213 12560188
averta na ale avert		0	5.19.44.147 [delivery@172.31.230.106:60847] > RETR projectx.waw 5.19.44.152 [delivery@172.31.230.106:60847] < 150 Opening data connection for projectx.waw.
custom shared	EDT	Ports	5.19.44.884 D:\deno_archive\delivery\projectx.www 12,0MBytes sent in 733 milliseconds
		Range Size	5 IUI 11.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1
directories)	Enabled × 9000 10		
· ·	Enabled X 3000	EDT	fient User Root Last Cmd Cmd n. Get bytes Put bytes LD
			172.31.230.68.57741 anonymous 15:17:38> CWD /C:/TEMP/ 10 345 106 172.31.230.68.57750 delivery D:\demo archive\delive 15:19:09> STOR Tim.wmv 33 1819 16595517
	Logfiles		172.31.230.68.57750 delivery D:\demo_archive\delive 15.19.09> STOR Tim.vmv 33 1819 16595517 172.31.230.106.60847 delivery D:\demo_archive\delive 15.19.44> RETR projectx.vmv 19 12561194 176
	Use a different file for each client IP		Users
	Rollover Size (MBytes) Rollover №	lumber	
	2 10		

## ▼ 3.8.1. EDT protocol

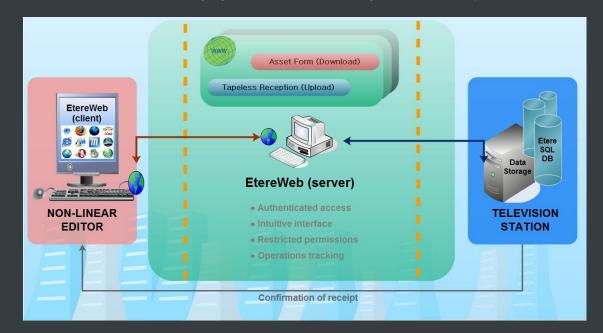
**EDT (Etere Data Transfer)** is a technology developed by **Etere** based on the high-performance data transfer protocol UDT (UDP-based Data Transfer), it uses a streamlined algorithm capable to utilize all the available WAN bandwidth, making of it the ideal solution for data intensive transfers over high speed wide area networks (it's 7 times faster than FTP):



Etere EDT is included in the Etere FTP server for custom and faster FTP transfers.

# ▼ 3.9. EtereWeb: Post-production integration

Etere's NLE integration will allow stations to achieve a tight integration with NLE systems, without using insecure "hot folders" or "ftp open sites" but including full tracked uploads (i.e. digital receipt of files) and immediate workflow triggering. EtereWeb is best solution for integrating NLE systems (e.g. FCP, Avid, Edius) with the station's broadcast workflow; it provides non-linear editors with 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 integrates the latest streaming technologies for video distribution and a comprehensive rights management system that gives to authorized users the possibility to access via web to a user-friendly interface:

User: evil666 Station: CHANNEL 1 Media library  Series  Schedule  Tape library  Ingest list  Extra  Air Sales  Tapeless reception  Account CHANNEL 1
1 CHANNEL 1
Assets search Segments search Current (view 1) Assets to send
Latest news 25/07/2012 15:48:38 Web server maintenance Dear users, We inform you that due to a scheduled
26/06/2012 15:19:06 Etere Web 22.5 is now available! Dear users, The Etere Web server has been updated View all news

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#### ▼ 3.9.1. Authenticated access and rights

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:

🏠 Personal Data, michael, CH	IANNEL 1						
File Tools Help							
🛗 🗲 🛄 👟 🗶 🕺 🍠	🎪 🚠 🗷 🕅						
Code DevilsAgency							
🔯 Search 🛄 Personal Data F	Form 🦸 Invoicing Data	🖺 Other data	🖳 Banks 🤵	🦸 Contacts (	Veb and Rights	🧊 Proposal	
User Name	evil666						<b>6</b>
							🥩 Document
PASSWORD	•••••					VILLUAL	Document

### ▼ 3.9.2. Tapeless reception

**Tapeless Reception** is an extension of **EtereWeb** designed with the purpose of offering an efficient solution for **digital content delivery** between external agencies and stations, it integrates the latest streaming technologies for video distribution and a comprehensive rights management system that gives to authorized users the possibility to access via web to a user-friendly interface:

Sent Assets		
🔉 (Hide search p	panel)	
	Code	
	Title	
	Date	
	Search Reset	
Code	Description	Scheduled arrival
28	Blank Bottles 2009-IV	01/09/2010 Select
PromoE02	PROMO EtereTV 002	30/04/2010 Select
3082	"Bee Beer" 2012 (1st-quarter)	19/01/2010 Select
ADV-0001	New Collection "EMO CLOTHES" 2010-I	31/12/2009 Select
3065	Testing Advertising Commercial 01	31/12/2009 Select
PromoE03	PROMO EtereTV 003	01/12/2009 Select
	Alejandro Sanz - Mi soledad y yo	20/11/2009 Select
	Cuenta la historia	20/11/2009 Select
VirtualAsset01	Wonderwall	04/08/2009 Select

Etere provides **Tapeless Reception** to allow remote clients to deliver digital content into the library, this web portal will permit other station's areas (e.g. Post-production houses, NLE systems, News providers, MAM systems) to easily and safely **upload content** (e.g. dubbed audio, conformed video, subtitles, etc.) and related metadata into a web server; once content is delivered (i.e. uploaded), a post-upload workflow (e.g. nearline archiving) is automatically triggered and a confirmation email is sent to the deliverer (attaching a proxy video) and the station operator.

Additionally, a customizable security policy will allow the station to determine different levels for accessing the files delivered through the web portal, thus making possible, for example, to dictate that a certain web user (e.g. NLE system) will be allowed to retrieve only its own delivered files whereas another web user (e.g. MAM system) to retrieve its own delivered files and also other user's files.

#### ▼ 3.9.3. Search, retrieval and preview

The Quick and robust search engine of **EtereWeb** allows users to easily search and preview assets, even during the search:

Assets search											
🔉 (Hide search pan	iel)										
Standard Extend	ded	Notes Quality	Workflow	Worksheet	Media Sit	te Stations	Options				
No me	edia										
With linked ta	аре	🗖 Yes 🗖 No									
	_ive	Yes No									
Coo	dec	WM∨		1	-						
Name of video	file										
Devi	ces										
			- ↓		Se	arch	Reset				
Record found: 32 / Pa	age 1		- Gave	e search						7	<b>&lt;&lt; 1</b> 2 >>
Code	1	D Title		Duration	Media				Types Expired		
	1	Wonderwall		00:00:30.0	18 💽 🖭	o 🗉 🧟	🖭 🌉 🖭	🏭 王 📚 📚 🎧	CLIP		
	2	939SexyPhone2011	spot	00:00:00.0		<u>.</u>			SPOT		
		Ferrari 150 spot		00:00:30.0	17 💽 👱 🛔	<u>.</u>			SPOT		
	2	5 "Bee Beer" Comi	mercials	00:00:20.0	01 💽 👱 🛔	🧕 🖸			SPOT		
		8 Blank Bottles 200	)9-IV	00:00:00.0	11 💽 🖭	🧕 🖭			SPOT		
	2	9 XYZ spot 2001		00:00:00.0		🛐 🗾 📚			SPOT		
2	2	D. I. J. M.		00 00 00 0		<b>1</b>					

The Media tab holds information regarding the media associated to the asset, time code details and EDL configuration. By double clicking on any media item, if available, it will be available the preview and download of the asset:

Start         End           00:00:00.00         00:04:00.08	Physical duration 00:04:00.09	
SOM EOM 00:00:05.00 00:04:00.08	Duration         Sched. Duration           00:03:55.09         00:03:30.00	
1 - (EDL n.1)	🖬 🛨	🖨 Download 🖭 🎽
SOM         EOM         Duration            \$\$\mathcal{L}\$\$         \$\$\mathcal{D}\$\$:00:00:00:00:00:00:00:00:00:00:00:00:0	01	Picon   Picon   Picon     Picon </th

### ▼ 3.9.4. Selective upload interface

**EtereWeb** allows uploading media files into the server through a simple and intuitive wizard procedure. Depending on the upload interface set in the system, it will be possible to upload the media file using either a java-applet or an active-x interface:

• **Java-Applet**: This interface allows dragging and dropping the media file(s) to be uploaded from the file explorer into the web browser:

User: evil666 Station: CHANNEL 1			
Media Library 💌 Series 💌 Schedule 💌	Tape library 🔽 Ingest list 🔽	Extra 🔽 🛛 Air Sales	Tapeless reception 🔽
Back to the form > Upload			
File Help			
Select or drag and drop file to upload	€ Move		
	0%		
	Cancel		

• Active-X control: This interface allows browsing for the media file(s) to be uploaded, being also possible to create a zip file for uploading an entire directory:

User: evil666 Station: CHANNEL 1		
Media library 💽 Series 💽 Schedule 💽 Tap	e library 💌 Ingest list 💽 Extra 🛛	Air Sales Tapeless reception
Back to the form > Upload		
<ul> <li>□ d: []</li> <li>□ D:\</li> <li>□ MyStorage</li> <li>□ My FTP Server</li> <li>□ P2</li> <li>□ CONTENTS</li> <li>□ PROXY</li> </ul>	0063FX wmv	Wait
File Selected: D:\MyStorage\My FTP Server\P2\CDNTENT	S\PR0XY\0063FX.wmv	
Upload and update File Name: 0063FX.wmv		
File Size: 2,20 MB		
0	ABORT UPLOAD START UPLO	OAD

# ▼ 3.9.5. Pre/Post upload processing

**EtereWeb** allows setting different workflows to be launched at different stages of the web management, for example, it is possible to configure the following workflows:

## • Pre-upload workflow:

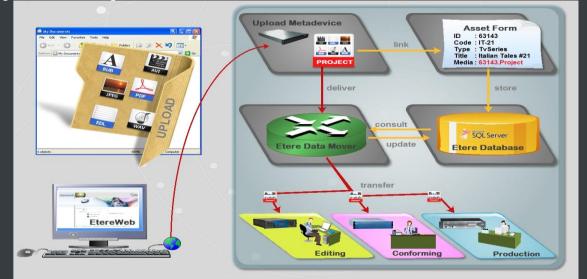
🦲 Web Settings	
SQL Server	ETERES1
Database	
Database name	EtereMichael
Login	sa
Password	•••••
Historical Database	
Database name	Etere Michael_historical
Login	sa
Password	•••••
🗆 Paths	
EtereWeb	C:\inetpub\wwwroot\EtereWeb\
Deny contemporary access with same account	False
Etere Web Services	C:\inetpub\wwwroot\EtereWSApi\
Creative Area	C:\inetpub\wwwroot\CreativeArea\
Tapeless reception	C:\inetpub\wwwroot\Tapeless\
Workflows	
EtereWeb	CC - WebPtpOrganize
Creative Area	[none]
Tapeless reception	[none]
Request for File Download	CC - Download Request
E Tapeless reception	

#### • Post-upload workflows:

🏠 Personal Data, michael, CHA File Tools Help 🔐 🖇 📑 🖙 🗶 😒 🍠					
Code DevilsAgency					
💢 Search 🛄 Personal Data Fo	orm 🚧 Invoicing Data 🖺	Other data 💻 Banks	🦸 Contacts 🙆	Web and Rights	🧊 Proposal
Groups Agencies	Options Language Post-upload workflow	english MM - COPYVACP BMS MM - COPYVACP BMS MM - XCOD MXF to W MM - XCOD MXF to W MM - COPY OMN1 to C MM - COPYBALANCED MM - COPY BMS to HF MM - COPYSDI BMS to	Sto HR		

### ▼ 3.9.6. Multi-file upload support

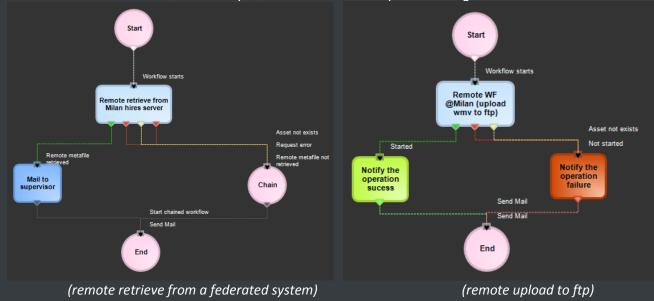
**EtereWeb** supports not only uploading multiple files with a simple drag and drop action, but also manage them as a single metafile:



This feature allows NLE systems to, for example, upload into the station's server all the files which make part of a project (e.g. production of promos, conforming of separate scenes, editing of source material, etc.) and deliver them to the related department with a single click and with the reliability of a workflow management.

### ▼ 3.9.7. Workflow integration with NLE systems

Thanks to the file-based approach of its media management, EtereWeb supports interfacing centralized NLE systems (Avid Transfer manager, Final cut pro server) via workflow. With Etere, it will be possible to transfer video files from and to NLE systems automatically via workflow, these workflows can be attached, for example, to assets which requires editing:



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## ▼ 3.9.8. Centralized monitoring interface

**EtereWeb** provides administrators with two key sections from which they will be able to consult:

• Login Report : Detailed information about user-specific accesses:

User: evil666 Station: CHANNE				etere Wi login page 🖡 Home page 🖌 Login re
ledia library 🔽 Series	s 💽 Schedule 💽 Tape library 💽 Ing	est list 🔽 Extra 🔽 Air Sales Tapeless recept	ion 💽 Account 💽	
Load				
Search (Company				
Name/Surname)				
	Search			
Code	Company Name/Surname	Data Login	Data LogOut	Time in Etere Web
Code DevilsAgency		Data Login 25/07/2012 15:49:00	Data LogOut 25/07/2012 15:59:00	Time in Etere Web 00:10:00
DevilsAgency	Company Name/Surname			
DevilsAgency JonesAndJones	Company Name/Surname Devil's Agency	25/07/2012 15:49:00	25/07/2012 15:59:00	00:10:00
DevilsAgency IonesAndJones Michael	Company Name/Surname Devil's Agency Jones & Jones	25/07/2012 15:49:00 26/06/2012 16:49:04	25/07/2012 15:59:00 26/06/2012 16:49:25	00:10:00 00:00:20
DevilsAgency IonesAndJones Michael DevilsAgency	Company Name/Surname Devil's Agency Jones & Jones Vasquez	25/07/2012 15:49:00 26/06/2012 16:49:04 25/07/2012 15:19:50	25/07/2012 15:59:00 26/06/2012 16:49:25 25/07/2012 15:19:53	00:10:00 00:00:20 00:00:02
DevilsAgency IonesAndJones Michael DevilsAgency Mark	Company Name/Surname Devil's Agency Jones & Jones Vasquez Devil's Agency	25/07/2012 15:49:00 26/06/2012 16:49:04 25/07/2012 15:19:50 25/07/2012 15:17:44	25/07/2012 15:59:00 26/06/2012 16:49:25 25/07/2012 15:19:53 25/07/2012 15:27:44	00:10:00 00:00:20 00:00:02 00:00:02
DevilsAgency ionesAndJones Michael DevilsAgency Mark DevilsAgency	Company Name/Surname Devil's Agency Jones & Jones Vasquez Devil's Agency Fellings	25/07/2012 15:49:00 26/06/2012 16:49:04 25/07/2012 15:19:50 25/07/2012 15:17:44 25/07/2012 13:29:49	25/07/2012 15:59:00 26/06/2012 16:49:25 25/07/2012 15:19:53 25/07/2012 15:27:44 25/07/2012 13:29:53	00-10-00 00:00-20 00:00-02 00:10-00 00:00-03
DevilsAgency onesAndJones Michael DevilsAgency Mark DevilsAgency iystem admin	Company Name/Surname Devil's Agency Jones & Jones Vasquez Devil's Agency Fellings Devil's Agency	25/07/2012 15:49:00 26/06/2012 16:49:04 25/07/2012 15:19:50 25/07/2012 15:17:44 25/07/2012 13:29:49 25/07/2012 13:22:31	25/07/2012 15:59:00 26/06/2012 16:49:25 25/07/2012 15:19:53 25/07/2012 15:27:44 25/07/2012 13:29:53 25/07/2012 13:32:31	00:10:00 00:00:20 00:00:02 00:10:00 00:00:03 00:10:00
	Company Name/Surname Devil's Agency Jones & Jones Vasquez Devil's Agency Fellings Devil's Agency System admin	25/07/2012 15:49:00 26/06/2012 16:49:04 25/07/2012 15:19:50 25/07/2012 15:17:44 25/07/2012 13:29:49 25/07/2012 13:22:31 20/07/2012 17:40:55	25/07/2012 15:59:00 26/06/2012 16:49:25 25/07/2012 15:19:53 25/07/2012 15:27:44 25/07/2012 13:29:53 25/07/2012 13:32:31 20/07/2012 17:50:55	00:10:00 00:00:20 00:00:02 00:10:00 00:00:03 00:10:00 00:10:00

### • User Statistics : Overall information about daily and weekly accesses:

User: evil666 Station: CHANNE							etere web Login report . Users statistics
			Ingest list 💽 Extra 💽 Air	Sales Tapeless reception 🔝	Account 🔝		
Daily info Date	20/07/2012 Show						
No. Login per day							
No. Users per day No. Hours in use pe							
No. Hours in use pe day (average for login	) 5h 4m						
No. Hours in use pe day (average by user	r 14m						
Month	July	•					
Yea		•					
		port Excel					
Day Users No.		Login No.	Use Time (User Average)		Use Time (I	Login Average)	
				Om		0m	
				Om		0m	
		44		5h 22m		14m	
4 5	2 0			5h 4m 0m		14m 0m	
6	0	0		Om		Om	
				90h 56m		12h 59m	

#### ▼ 3.9.9. Remote archive consultation

EtereWeb allows web users to check and also control the digital archive remotely via web. Web users will be provided with a fully-tracked access to the most relevant Asset Management operations through a robust search engine and including a wide set of function-specific sections (i.e. general information, media, properties, metadata, rights, technical data, workflows and much more).

User: evil666 Station: CHANNEL 1			login pag	e i Home page i Search	etere web Asset Form + Media Library	
Media library 💌 Series 💽 Schedule 💌 Tape libr	rary 🔽 Ingest list 💌 Extr	a 💌 Air Sales 🛛 Tapeless	reception 💌 Account 💌			
Asset form						
	Code 1	Title Wonderwall				
General Data Properties Media Secondary events	Metadata Rights managem	ent Media data Workflow	Resources management *People in	charge SMPTE Metadata	Operations Links	
Virtual Document Keys/Keyboards						
Type Production Coun Production date						
Self-production F	Percentage 0,0%					
	Genres Code	Genres Description				
Genres		Rock Alternative				

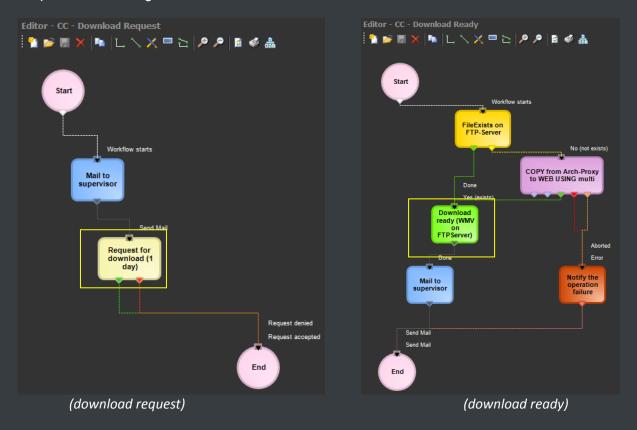
Specially, a section dedicated to the media management will provide information regarding all media files associated to the asset, indicating for all of them the timecode details and EDL configuration with further preview/cut/download/upload capabilities.

### ▼ 3.9.10. User Permissions

**EtereWeb** allow stations not only to share the right files to the right persons but it also allows sharing contents with the right permission levels; this capability is based on granting/denying function-specific permissions through Etere Worksheets, the module that allows web users to request temporary permission for specific functions (e.g. download a file linked to a certain asset):

User: evil666 Station: CHANNEL 1	login page 、Horne page 、Search Asset
Media library 💌 Series 💌 Schedule 💌 Tape library 💌 Ingest list 💌 Extra 💌 Air Sales Tapeless reception	Account
Asset form	
💕 🖶 🛱 🙄 💕 4 🕨 🙉 🚰 ID 1 Code 1 🔤 Title Wonderwall	
General Data Properties Media Secondary events Metadata Rights management Media data Workflow Resource	ces management *People in charge SMPTE Metadata
Virtual Document Keys/Keyboards	
Inizio fisico 🦽 http://172.31.230.106/?ID_FILMATI=1&ID_METAFILE=603 - :: Download file from etereweb	
00:00:00.00 Request for File Download	MTX C MTX Beta Beta
SOM 00:00:00.00 The request has been already sent	
1 - (EDL n.1	Download

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Web requests are managed via workflow to allow a custom and automatic launch of worksheets:

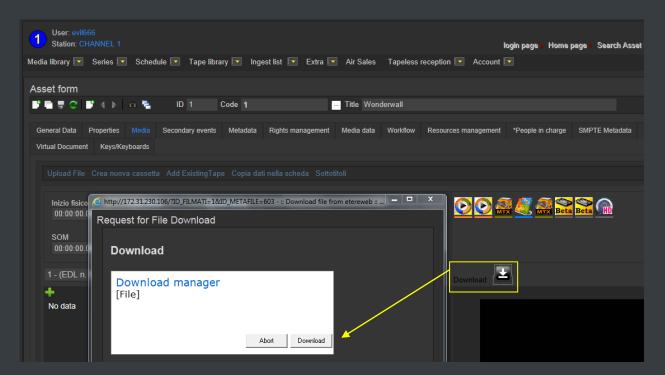
Supervisors count with a dedicated interface for viewing pending requests and accept/deny them:

Media Library, michael, CHANNEL 1							_ 🗆 ×
File Tools Show Utilities ?							
CHANNEL 1							
	= D (I 🗏 🛒 💌 (	) 🚯	<b>V</b>	18/8/8			A File copy running
				<i>र स स स</i>			
ID 1 Code 1	Title Wonderwa	all					
Tapeless reception (f) TechnicalData Search Control General Data Control Data	😤 SMPTE Metadata erties 🚉 Media	📄 Links	J SIAE		<ul> <li>Keys/Keyboards</li> <li>Secondary Events</li> </ul>	Areople in charge 😤 Metadata 🕅	Proposal Rights management
Requester Devil's Agency Reque	st Download metafile		Codeo	: WMV			
Notes			Respo				
Requester Jones & Jones Reque	st Download metafile		Codeo	WMV			
Notes			Respo	onse			
A *Hide temporary rights							
Requester	Request	Codec		Expiry date			
Skywalker Luke	Download metafile	WMV		05/12/2124 15:18:50			

Page 40 of 68 © Contents of this publication may not be reproduced in any form without the written permission of Etere. Once the requested is evaluated, web-users will automatically receive an email notification containing the information (e.g. ID, codec, fixed note and an evaluation note) about the asset for which the request has been performed. The email notification will be sent to the email specified in the personal data of the web-user who performed the request, this, depending on the entity type:

From:	supervisor@mytv.com [system-profile email account]
To:	user5@agencies.com [personal-data email account]
Subject:	WORKFLOW INFO ( workflow status report ) Personal data ID : 7 [personal-data code] workflow: CC - Download for NLE [workflow holding the web request action] status: Workflow active result: 0 message: <empty></empty>

Finally, in case the request is accepted, the web-user will be now allowed to download the requested file(s) through EtereWeb:

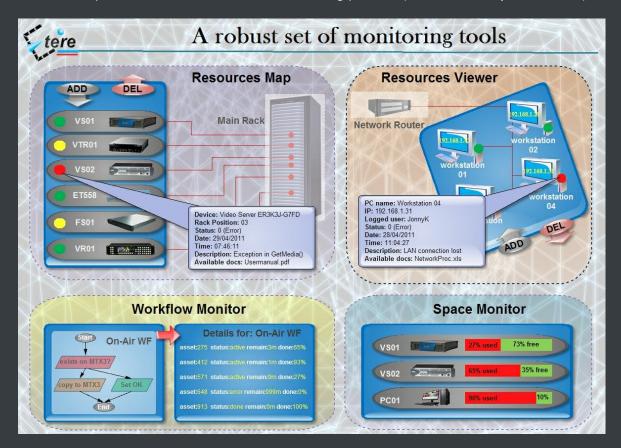


### ▼ 3.9.11. Security integration

**EtereWeb** works perfectly behind routers so remote access and ftp transfers are drastically improved. NLE systems can deliver contents via Etere Web as a digital equivalent of physical reception, where selected people can deliver video and metadata to the station, but owing to its digital nature, operations are perfectly organized, performed and logged, avoiding loss of any content information. Moreover, as a further security level, Etere provides direct authentication of web users through the station's active directory domain.

### ▼ 3.10. Monitoring Console: A complete SNMP monitoring

The **Monitoring Console** is a tool developed to help supervisors to have a global overview of the system, permitting them to monitor any Etere module which collects and stores its management information (errors, warnings, etc.) through the locally installed **SNMP Agent** which sends messages containing this information to a remote console which in this way monitors all the modules; through this console the operator can decide about the receiving policies (content, validity, filters, etc.).



The **Monitoring Console** is a key part of the broadcasting process because it permits to have a complete report of the way the Etere modules are working, allowing to catch errors, store them in a database for a further analysis and also forward them to an another console (forward the message to the pertinent operator who is intended to solve it) and thus saving time and resources on real-time which are invaluable assets in the broadcasting business.

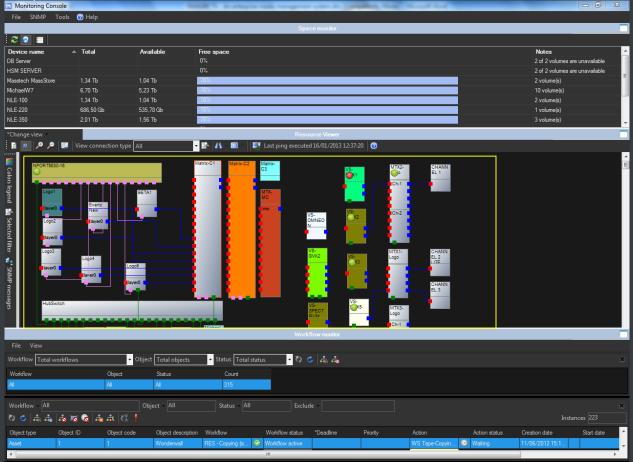
#### ▼ 3.10.1. SNMP monitoring support

In order to improve monitoring of devices, modules and workflows all Etere components are automatically subscribed to an SNMP Service, so it will monitor the periodic heartbeats sent via SNMP by the components. The Monitoring Console detects missing heartbeats and sends both a visual-alarm and an e-mail notification to the operations department. Owing to the use of this feature, the general health of the Etere system can be further examined to isolate raised faults.

Snmp Snmp filter			1	
By range 0 - 99999999	Filter name	By range 0 - 999999999	Active 🔽	
ERRORS	-General Owner		Description	
INFORMATION	Login name		PC name	
By GPI	Site			
ETERE-AUTO-FILTER	Severity		,	
WARNING	Information	🔽 Warning	V Error	🔽 Unknown
0 - 5000	From	0	То	99999999
	From	172.31.230.1	То	172.31.230.255
	Action — Manage Aam type —	Archive Only re-set	end 🧿 Manage	and re-send 🕥 Discard
	Send email	To email address	michael@etere.eu	
	Sound	File Name	C:\windows\media	vnotify.wav 🗾 下
	🔽 GPI	Device number	1 😫 😭	MICHAELW7
		*Switches GPI test 🥥 💽	<	Þ

#### ▼ 3.10.2. Visual real-time monitoring

In order to improve monitoring of modules and devices, all Etere components are automatically subscribed to the Etere SNMP Service, so it will monitor the periodic heartbeats sent via SNMP by the components.



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### ▼ 3.10.3. Robust monitoring features

The **Monitoring Console** is smartly divided across different panels to allow a quick monitoring of specific functions. Tools included in this module are listed below:

Module	Description
SPACE MONITOR	Visualize the storage space of all devices for which <i>metadevices</i> are defined (e.g. video servers, workstations, servers, etc.).
RESOURCE MAP	View and allocate resources (e.g. workstations) across the system, thus allowing to, for example, indicate the rack position of the workstation on which an error has occurred.
WORKFLOW MONITOR	Consult all workflows (transfers, checks, requests and much more) executed on the certain station, allowing also to view and manage them each one of them.
RESOURCE VIEWER	Show a map of all resources configured in the system, showing in real-time their connection status and SNMP messages.
STATUS BAR	Display the real-time status of monitoring background tasks such as "SNMP real-time checking", "Processes monitor", "Check pingable devices from this console", "Collect and check PC counters" and "GPI signals".

# ▼ 4. FUNCTIONALITIES

### ▼ 4.1. Distributed architecture

ETERE is an integrated broadcasting solution that implements a modular system based on a single database and formed by a set of modules oriented to cover each complex phase of a broadcasting system, focusing to efficiently carry out specific operations (e.g. ingest, archiving, transfer, etc.).



## 4.2. 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 Metadevice.

#### ▼ 4.2.1. Search filters

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

			opoide		
Search 🛗	Series Manager	Propertie	s 🖆 N	Me Unique identification in local system	
Standard Extended I	Flags Full-text	All		Asset identification code	
Code				Brief asset description	
Title				Asset expected length	
Duration	00:00:00	.00 00:0	0:00,00	Asset type (e.g. spot, promo, etc.)	
				Unique identification in federate system	
GlobalID X Site	<u>د</u> × ۷	(IMN PARIS (2390	))	Asset source site (local/federate)	
		IMN SINGAPORE	r		
with subtitles				Subtitles of any or a specific language	
Workflow				Information on asset workflows	

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.):

E	н •	4	• • •	1									Reset	🔍 Se	earch
🚊 📠 Types	ID	Code			Series Title	Title		/ledia		Version	Duration	Туре	Site		Ede 🔺
	25	23_2			YAMATO	1 2 3 test hsm virtual doc		🚽 🔝 🌮 🅫	<u>0</u> 1	2	00:03:29.01	PROG	VIMN PAP	ris	
🛛 📄 🖂 ACQU (1)		ACQU000				ADOBE TO DOWNLOAD		J 🖸	1		00:25:08.18				
			MONKEYS-00			ROCKET MONKEYS - No.0		_	7		00:22:30.00				=/
						ROCKET MONKEYS - No.0	0007	<u>  0</u>	7	2	00:25:08.18	PROG			
📃 🛛 🛄 🔤 PRT (4)					segment 2 singing		K	0	1	1	00:01:00.01	PRT	VIMN PAP		
						Remove Black and slate			1		00:02:00.01		VIMN PAR		
Genres						segment 1 need help		2	1		00:01:00.01		VIMN PAP		
De Arter				-		ROCKET MONKEYS - No.0			7		00:23:08.18		VIMN PAP		
Artists			ARK-0401			SOUTH PARK - No.0401		🚽 🕑	401		00:21:59.21		VIMN PAP		
🚊 🔤 Sites			ARK-0401_PF	R1 -	SOUTH PARK - No.	SOUTH PARK - No.0401		<u> </u>	1		00:01:00.01		VIMN PAP		
	394	ZZ-00006	9		ZOOLANDER	ZOOLANDER	5	୍ଦ୍ର 🖸	1	1	01:25:36.01	ACQU	VIMN PAR	ris	
i 🚞 VIMN PARIS (11)															
	8	🔒 Page: 1	/1		Records: 11/11	Sorted by: C	Code		Duration	: 3:32:01	.06/3:32:01.	06	F	Į O	

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

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

### ▼ 4.2.2. 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:

🔊 VTV ARCHIVE, Media Library, michael				
File Tools Show Utilities ?				
VTV ARCHIVE				
🗋 🗏 아 🗟 🖻 🖑 🔣 🦉 🦉 🛒	🚡 – 🔁 🖪 🖱 🕻	> 💿 🛛 🕷 🕅	2 4:3 80	
ID 10001 Code 10001	Title	Sông hồng 12 khúc: Tập 2		Version 1
Rights management	(jí) Teo	:hnicalData 🖚	Keys/Keyboards	A People in charge
🔯 Search 🛗 General Data 🛅	Properties 🚉 Med	ia 🛒 Metadata 🚏	SMPTE Metadata 📎 Tapeless rece	
Standard Extended Flags Full-text All				
Duration 00:00:00,00	00:00:00,00			8
Title				Starts with 🙁 *
Scheduling Date 30/01/2014	30/01/2014	Exclude		*
Ingest date 30/01/2014	30/01/2014			8
× Person in charge usrbrowsing1; us	srbrowsing2			
Records displayed 50				8
Timeout (sec.) 30				8
🔄 🔚 Groups	4 <b>b b</b> b			🗌 Reset 🔍 Search
ID Co 10001 10		Title Med	ia Episode Version Duration Type	Site External ID VTV ARCHIVE
10001 10		Sông hồng 12 khúc: Tập 2 Beta Điện Biên Phủ -Chuyện kể cu	1 1 00:45:29.00 PTL	VTV ARCHIVE VTV ARCHIVE
10016 10		Nhũng chiến sỹ chân đồng v	1 1 00:43:23:00 PTL	VTV ARCHIVE
10017 10		Thời gian của một khoảng kh	1 1 00:00:00.01 PTL	VTV ARCHIVE
10017 10		Vũ Kỳ - những ngày bên Bác	1 1 00:28:40.03 PTL	VTV ARCHIVE
10180 10		Biến động ngày hè - Tập 1 - 🔐	1 1 01:05:09.22 TRVN	
10205 10	205	Những chiến công thầm lặng 🔐	1 1 00:13:42.11 PS	VTV ARCHIVE
10206 10	206	Lễ vào nhà mới của người Ba	1 1 00:24:12.09 SMVH	VTV ARCHIVE
10208 10	208	Mãi mãi tuổi xanh 🔐	1 1 00:42:49.15 TTTT	VTV ARCHIVE
10216 10	216	Những cô dâu với thân phân 🔗	1 1 00·42·23 09 HS	VTV ARCHIVE

(search based on multiple "person in charge")

File	Tools Sho	w Utilit	ies ?									
	VTV AR	CHIV	Έ									
	🗠 📓	er 🦓	88	<b>8</b>	3 *	<b>i</b>			🥗 🖻	٩	)	
ID	10001	Code	10001				Tit	e	Si	òng hồng	12 khúc:	Tập 2
	Search	in Biabte	General manager		<u>i</u>	Prope	rties	鍧	Media People in	1	Meta	data
	on in charge	- Nights				Role						
usrb	rowsing1					1ST LE	/EL CEN	ISOR				
usrb	rowsing2					2ND LE	VEL CEI	SOR				
NLE						NLE OP	ERATO	R				

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

### ▼ 4.2.3. 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:

: VTV ARCHIVE.		🏘 Selec				
CATALOGUING open	ators.	Show H	Help			
ን 📕 🗘			/ ARCHIVE, michael			
RIGHTS		<b>*</b>	?			
access 🔁			Code	Description		Group
🚞 BASE			AM	Âm nhac và đời	รกักก	VNG
OBJECTS			AN	Âm nhạc	Song	VNG
🛛 🖳 🥑 50 bài hát thi		<b>V</b>	ANDG	Âm nhạc diễn gi	iài	VNG
🛛 🕰 Ai là triệu obứ		V 📮	BNN	Bạn của nhà nô	ing	PTLG
🛛 💓 Am nhạc		V 🔽	BTTS	Bản tin thời sự		TSG
📲 🥰 Âm nhạc diễr	n giải		BV	Bếp Việt		BKTG
🚽 🧭 Âm nhạc và c	đời sống					
An toan giao	thong	——————————————————————————————————————	ode			
Bài hát Việt		🔿 🖒	ode			
Discussion and the second		Sele				
- Si Bản tin thời si - Si Bản tin thời si	· · · · · · · · · · · · · · · · · · ·	Sei	ect all			
Pas VA	Ÿ					OK Cance
No neb viêr						
Block	ute state leafer	Recor	rds: 124/124	🔹 Sorted by: Code		
restricted peri	naventar	Reco		✤ Sorted by: Code estricted search		
 Links	n Operations 🔊	SIAE I	r ( Resources management	estricted search		Proposal
<mark>iinks</mark> ⋈ Search 🖬 Serie	🚀 Operations 🎵 Is Manager 🛐 Properties 😫 Media	SIAE I	r ( Resources management	estricted search		
Links Search 🖬 Serie Standard Extended Fla	🚀 Operations 🎵 Is Manager 🛐 Properties 😫 Media	SIAE I	r ( Resources management	estricted search		[]] TechnicalData
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Links Links Search Ma Search Standard Extended Ra	🚀 Operations 🎵 Is Manager 📆 Properties 😫 Media	SIAE I	r ( Resources management	estricted search		[]] TechnicalData
Code	🚀 Operations 🎵 Is Manager 📆 Properties 😫 Media	SIAE I	r ( Resources management	estricted search		[]] TechnicalData
Links Search in Sene Standard Extended Pa Code ID Series Title X Types	Operations     Operations     Manager     D     Properties     Full-text     All	SIAE	r ( Resources management	estricted search		[]] TechnicalData
Links Search Search Search Standard Extended Ra Code ID Series Title X Types Duration	Operations     Operations     Manager     D     Properties     Full-text     All	SIAE	r ( Resources management	estricted search	Tapeless reception (	() TechnicalData
Links Search Search Senie Standard Extended Ra Code ID Series Title X Types Duration Title	Operations     Operations     Manager     Operations     Properties     Medi      Al      AMAN, ANDG, BNN, BTTS, BV      00.00,00,00      O0.00,00,00	SIAE 🖬	Resources manageme Secondary Events 😤 Mete	estricted search	Tapeless reception (	[]] TechnicalData
Links Search Search Search Standard Extended Ra Code ID Series Title X Types Duration	Operations     Operations     Manager     D     Properties     Full-text     All	SIAE 🖬	r ( Resources management	estricted search	Tapeless reception (	() TechnicalData
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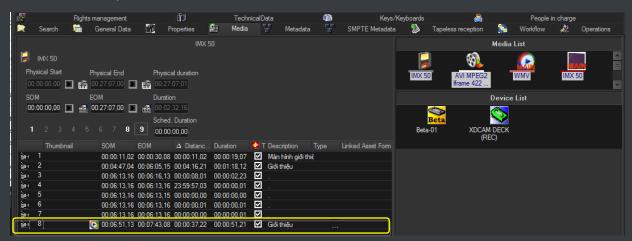
### ▼ 4.3. Operations history

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

### ▼ 4.3.1. 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:



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

1 de la compañía de l		Rights	manageme	nt		ព្រ		Technica	IData		<b>(</b> )		Keys/Key	yboards	۵		People	in charg	e	
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#### ▼ 4.3.2. 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**:

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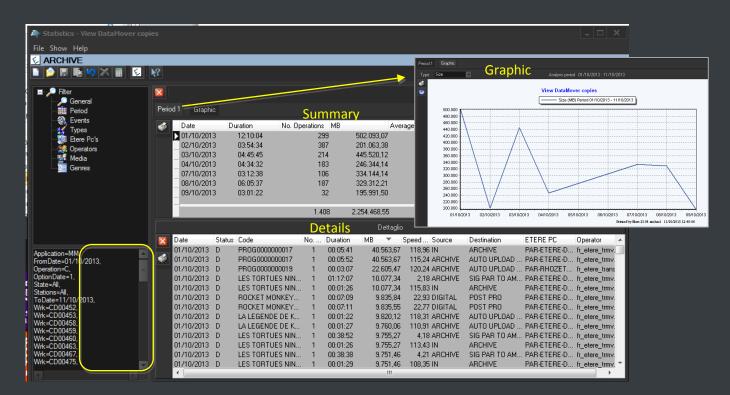
### ▼ 4.3.3. SMPTE stored values

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

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#### ▼ 4.3.4. Statistics

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



### ▼ 4.3.5. **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 though 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.

*Tasks s	tatus by workflow								
Workflow	RES - QUICK Censorship			Action	AI				
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"Workflow - A	ction								
Code	Title	Assignee	*Validity start	"Validity end	Status	*Executor	*Execution time	Duration	Result
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3671	Casablanca	Administrators	27/09/2012 10:56:44 AM	4/10/2012 10:56:44 AM	To do				
3745	A blue automobile	Administrators.	25/09/2012 4:05:22 PM	3/10/2012 4:05:22 PM	Done	michael	25/09/2012 4:06:09 PM	00.34.00	Approved

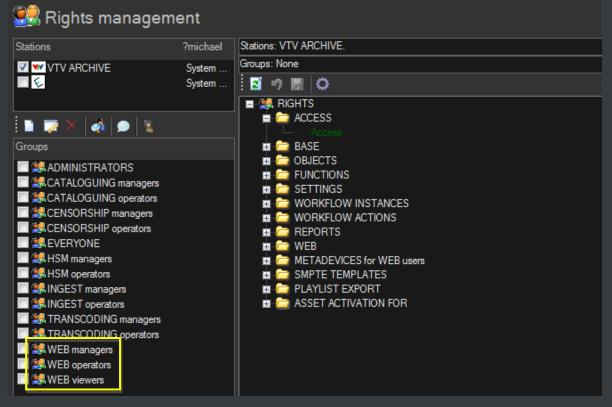
### ▼ 4.4. Role-based Access Control

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.

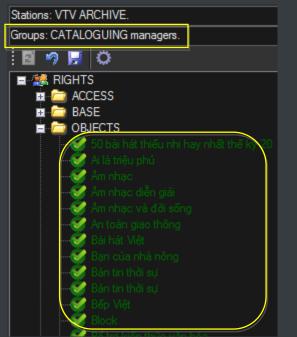
### ▼ 4.4.1. Permission levels

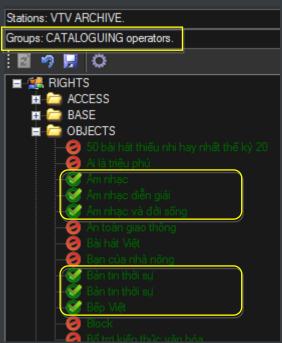
Etere allows managing different access levels for users which form part of the system; specific access rights not only for different users, but also for different stations. As shown below, groups can be split into sub-groups to enable a more-specific assignment of permissions, for example, the **"Web"** 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 <u>categories</u>, 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)

### ▼ 4.4.2. Active Directory Integration



Etere allows creating a new rights structure importing groups and users from your organization's **MS Active Directory**. Once opened, this tool will display all groups and users present in the Etere Rights structure, allowing to update the Etere Rights structure by synchronizing it against the MS Active Directory.

Groups and users will be displayed along with a status icon:

$\odot$	The <u>group/user</u> will be added to the Etere Rights since it is present in the MS Active Directory.
8	The <u>aroup/user</u> will be removed from the <i>Etere Rights</i> since it is missing in the MS Active Directory.
۲	The <u>group</u> has users that will be added/removed from the <i>Etere Rights</i> since they are present/ missing on the <i>MS Active Directory</i>

### ▼ 4.5. Documents Management

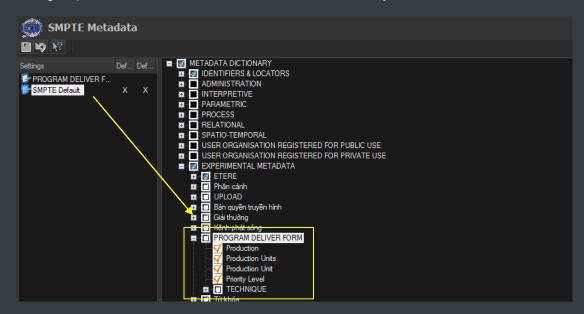
The **Document Management (Do.Ma.)** feature is a big deal for many enterprises especially when the amount of documents raises the cost of ownership to high levels. Reducing paper documents and cataloguing by digitizing and saving in a SQL database, allows an integrated enterprise information system. 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:

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30/09/2011 12:52:00	A diagram expl	
	Edit	

**Etere Document Management** allows associating files to one "virtual document" to 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.

## ▼ 4.6. Metadata Cataloguing

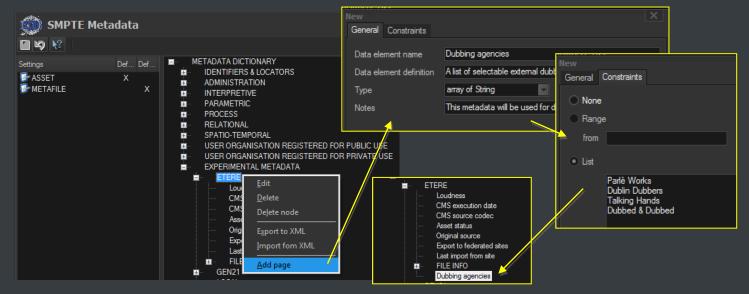
SMPTE Metadata is a key part of the media management, that's why Etere provides a dedicated module for defining eventually useful metadata (e.g. 'technical comments', 'descriptive names', 'intellectual rights') and store them into a robust SMPTE dictionary:



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### ▼ 4.6.1. Custom definition

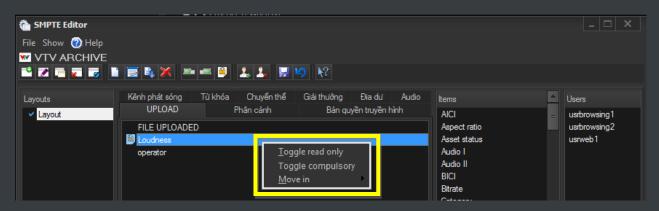
The metadata elements comprised in the media management can be freely configured, for example, adding custom metadata:



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.

### ▼ 4.6.2. 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

### ▼ 4.6.3. 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):

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### ▼ 4.7. 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:



### ▼ 4.8. Multi-version management

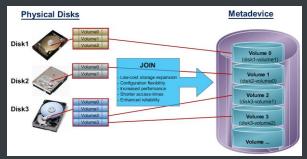
Assets (i.e. media holders) can be organized –along with their related information-under a hierarchical structure based on Parent-Children relationships, thus allowing, for example, handling different versions of a same asset and all the assets derived from them:



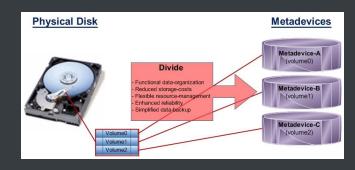
## ▼ 4.9. Multi-storage management

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 arching, 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:



### ▼ 4.10. 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,
- $\geq$  Set of instructions and authorizations that must be followed in order to move forward,
- Complete log of all steps carried out, operations denied etc.

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:

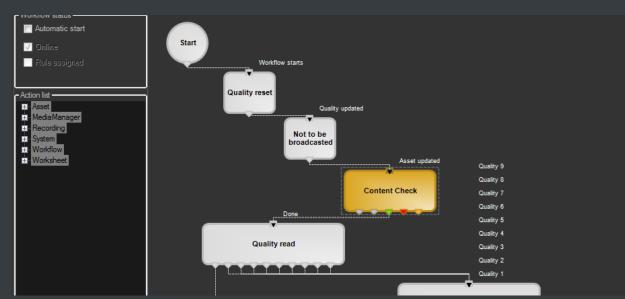
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Archive WMV on LTFS		Asset custom log Asset File Delete Asset File Delete in HSM Asset File Exists	Â
Asset Schedule Check Asset WMV File is online in HSM? AssetFileDelete (MTX1)	Е	Asset File Exists in HSM Asset File is Online in HSM Asset File Length Check if asset is scheduled	
AssetFileDelete (MTX3)		CMS check	=

### ▼ 4.10.1. 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.



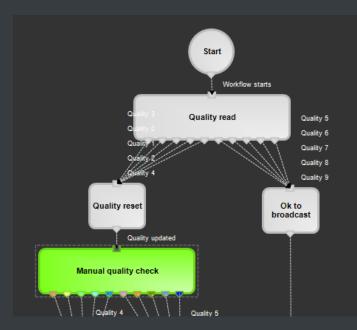
**CMS** is based on a workflow action which, once included into a workflow that will automatically analyze the asset's proxy video to detect and log (into its EDL) the following audio/video issues:

#### **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.

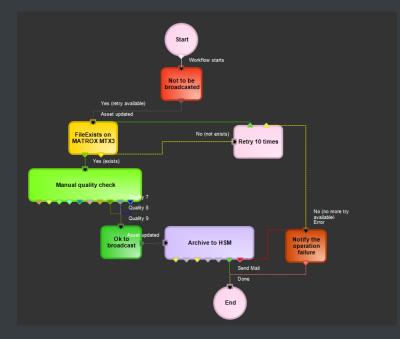
### ▼ 4.10.2. Quality check

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:



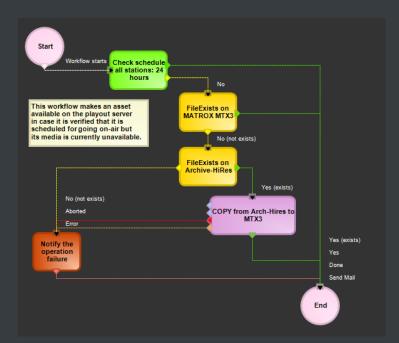
### ▼ 4.10.3. Archive

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:



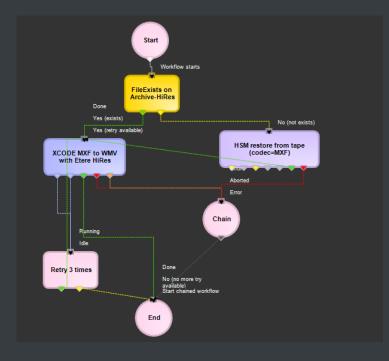
### ▼ 4.10.4. Restore

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:



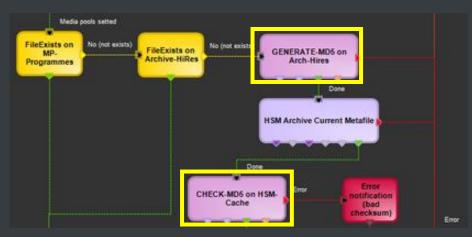
### ▼ 4.10.5. Transcoding

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:



### ▼ 4.10.6. MD5 checksum

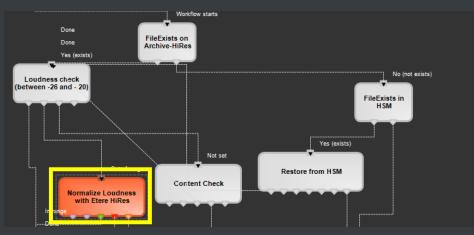
Etere offers an enterprise control of video files integrity; it keeps a log of the hash md5 of video files such in a way that it is possible to verify at any time if they have been modified after their approval. All video files registered on the Etere's database can be verified through an md5 checksum, 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 editor allows creating custom workflows to either generate or check the MD5 hash of files.

### ▼ 4.10.7. Audio normalization

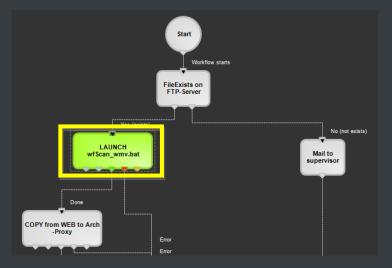
Etere provides a file-based loudness control, allowing stations not only to check the loudness level of media contents but also to normalize them to meet specific limitations.



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).

#### ▼ 4.10.8. Antivirus scan

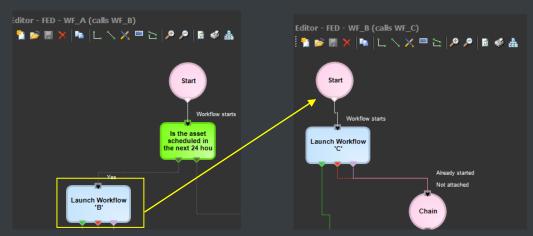
Etere includes the ability of integrating antivirus protection within workflows, allowing stations to improve their media workflows (e.g. post-upload) by giving them the capability of automatically scanning transferred files for virus and end their work with a flourish.



As shown in 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.

### ▼ 4.10.9. Integration between workflows

Etere allows calling workflows from others just by inserting an action that can perform a specific task (i.e.: attach, attach and start, start, abort, reset, restart, detach, etc.) on a certain workflow:



Etere maintains the system consistency by avoiding loops between workflows (a message is displayed indicating action incompatibilities between workflows). For instance, if 'workflow A' calls 'workflow B' and the 'workflow B' calls 'workflow C', the 'workflow C' will not be able to call the 'Workflow A'.

#### ▼ 4.10.10. 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:

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P New Action	
Create an empty action	
<ul> <li>Use a predefined template</li> </ul>	
Set original source Set type Set Workflow Priority SMPTE check SMPTE set current time SMPTE set value Update asset code from SMPTE Used Space on metadevice Wait for time Web request Workflow action	Name       Update asset code as "MOV + ID"         SMPTE metadata       Asset_ID         Check mode       Aways on asset         Leading string       MOV

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

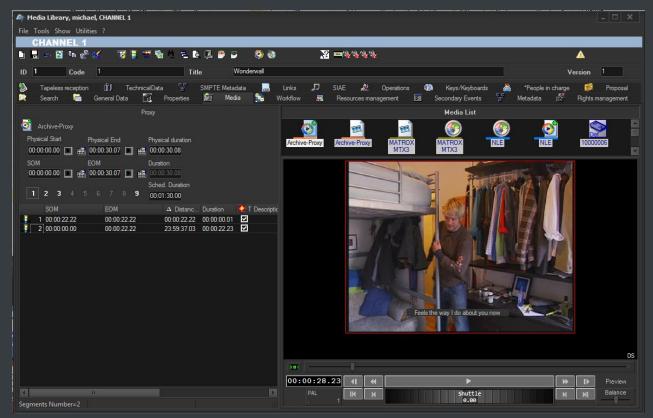
#### ▼ 4.10.11. External synchronization

A workflow action enables Etere to **automatically update** external system (e.g. Harris, Gen21, etc.) every time an asset metadata (e.g. EDL, title, type, etc.) is changed in the Etere Media Library, thus consolidating the tight integration between Etere and existing systems while preventing wasteful insertions and data discrepancies:

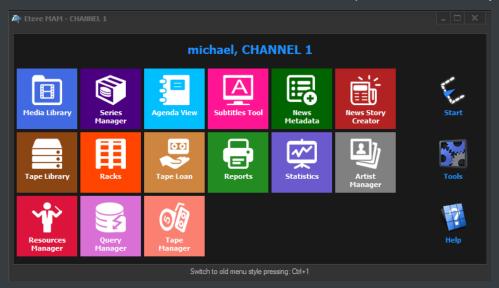
💽 Default workfi 🕅 🤊	ows			
Operation	• 1	Norkflow	*All stations	"If workflow is running
After a streaming ingest	c	C - Audio and Logo setup		*Ask for confirmation
After a Tapeless upload	c	C - WebRpOrganize		*Ask for confirmation
After a video file import	c	C - QualitySet (Manual)		*Force workflow reset
After an Etereweb upload	c	C - WebRpOrganize		*Ask for confirmation
After an ingest operation	, N	MM - XCOD MXF to WMV		*Ask for confirmation
Asset is modified	(	C - Update Harris		*Operation allowed
Conforming	h	MM - CONFORMING		*Operation allowed

### ▼ 4.11. Look and feel

ETERE's GUI experience gives a professional interface with less distractions and more focus; high contrast helps working on any light condition from dark master control to enlightened editing rooms:



Moreover, main menus now follow the Windows 8 GUI to be simple, intuitive and easy to use:



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# ▼ 5. BENEFITS

This paper has described how the development and deployment of an Etere-based "Full Enterprise Wide Media Asset Management System" able to provide the station with a large number of operational benefits and advantages derived from the correct use of ultimate media management technology. Etere will entirely manage the digital contents of the station, from acquisition to delivery, providing the following key features:

- Reliability, all workflow-based operations automatically generates fully customizable logs to track both the overall and individual functioning of the entire system
- Flexibility, on meeting all requirements by proving a versatile media management system tightly integrated with all capturing and storage devices present on the station
- Scalability, for increasing the number of capturing channels and devices without altering the system workflow complexity, thus minimizing operational overheads and reducing overall costs

- Efficiency, reduced need for repetitive manual operations, allowing to define them in advance and then include them in the ingest workflow, thus increasing productivity
- Accuracy, during the whole media management process, reducing the risk of mistakes when retrieving data since all archived contents are continuously checked
- Integration, for non-linear editing systems to access the digital archive directly and efficiently through a proper production environment, making use of the highest security standards

## 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.

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