



An enterprise workflow-based archive system



May 2014

Your World

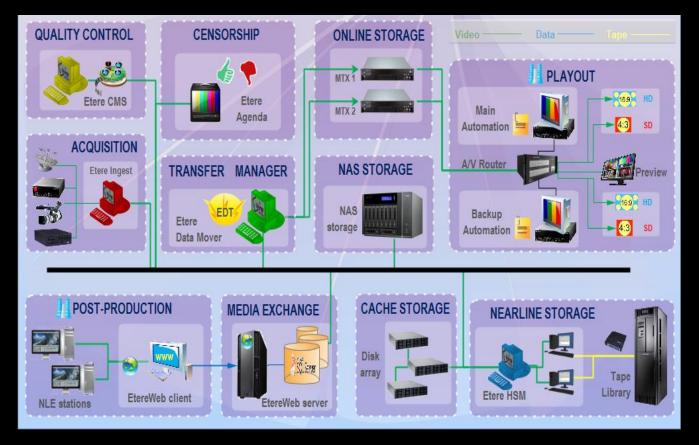
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▼ 1. INTRODUCTION

TodayTV is a television channel established in 2008 with the slogan *"TodayTV – Your world"* by IMC and other groups and enterprises. **TodayTV**'s programming offers national and international programs, Vietnam and Asian Pictures, Hollywood movies, reality show, gameshow, and kids show, broadcasting 24 hours daily.

In order to consolidate its top level position and continue delivering excellence in programming to Vietnamese families, **TodayTV** has requested a cutting-edge system able to streamline its entire media management. Etere's proposed solution consists of a "enterprise workflow-based archiving system" intended to efficiently acquire, archive, produce, delivery and playout content from multiple stations (*TodayTV*, *SNTV*, *RAIL TV*, *YOUTV*) while keeping the system cost-effective thanks to the use of a file-based workflow framework.



This paper is aimed to describe how the solution proposed by ETERE is able to fulfill all the specifications required by **TodayTV**, providing detailed information on every module forming part of the overall solution.

▼ 2. OVERVIEW

TodayTV has requested a consistent project for the digital management of media content under a filebased workflow environment. Etere's solution consists of a media archive system with acquisition, management and delivery capabilities of multilingual media. The proposed solution will be relied on a **workflow-based framework** able to cover the end-to-end archive management including ingest, storage, catalogue, search, retrieval, production and playout.

KEY FEATURES

- A distributed architecture managed via workflow to avoid any single point of failure
- Seamless integration with existing and co-existing systems
- Safe and fully-tracked access to the content archive
- Reliable playout of multilingual assets based on metadata tags
- Enterprise transport and transformation of media between storage devices
- 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
- Editing interface with preview, slow-motion, timecode, bookmarking and metadata
- Full integration support for NLE systems including content delivery
- Reliable monitoring of the modules and equipment integrated within the global system
- Redundant SD/HD simultaneous playout based on IT technology

The Etere-based system will comprise media ingest, archive, management and distribution solution combining powerful modules with an easy to use interfaces, this solution will permit to straightly connect content captured by Etere Ingest with Etere MAM to view and catalog video assets before delivering them via workflow, in either standard definition or high definition. Etere MAM (Media Asset Management) will be the core of the overall system, providing workflow management, production project management and content management features; thus ensuring a streamlined tapeless environment able to capture, edit, catalog and deliver contents, fast and efficiently.

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 HSM, automatic tape-based storage system for long-term management archive,
- EtereWeb, web-based interface to exchange media with NLE systems (e.g. FCP, Avid, Premiere, Edius, etc.)
- Etere DataMover, intelligent and fast transfers between devices (SAS, NAS, etc.), enabled with EDT protocol
- Etere MTX, HD/SD capture and playback for all major industry standard codecs
- Etere Automation, redundant playout system supporting real-time device control

▼ 3. MEDIA FUNCTIONALITIES

▼ 3.1. 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.).



▼ 3.2. 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.

▼ 3.2.1. Search filters

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

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	۷ 🔍 🔍	/IMN SINGAPORE (3)	Subtitles of any or a specific language
with subtitles				
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.):

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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

▼ 3.2.2. 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:

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(search based on multiple "person in charge")

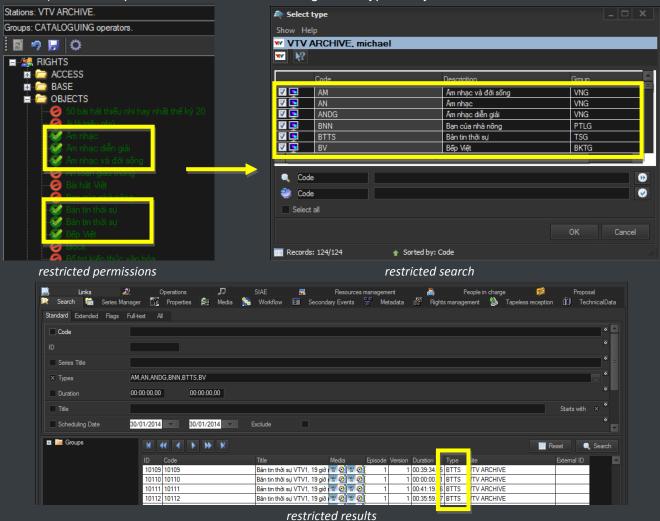
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(retrieved asset with "persons in charge" matching the search criteria)



▼ 3.2.3. 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:



▼ 3.3. Operations history

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

▼ 3.3.1. 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:

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2. The operation is automatically logged in the system:

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▼ 3.3.2. 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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▼ 3.3.3. 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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▼ 3.3.4. Statistics

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

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	Details	Dettaglio	Printed by Blere 23.04 michael 11/10/2013 12:40:06
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Application=MM	PR0G000000017 1 00:05:41	40.563,67 118,96 IN ARCHIVE PAR-ETERE-D	fr_etere_trmv.
FromDate=01/11/2013, 01/10/2013 D		40.563,67 115,24 ARCHIVE AUTO UPLOAD PAR-ETERE-D	
Operation=C. = 01/10/2013 D		22.605,47 120,24 ARCHIVE AUTO UPLOAD PAR-RHOZET	
OptionDate=1. 01/10/2013 D State=All. 01 /10/2013 D		10.077,34 2,18 ARCHIVE SIG PAR TO AM PAR-ETERE-E	
Stations=All,			fr_etere_trmv.
ToDate=11/10/2013, 01/10/2013 D	ROCKET MONKEY 1 00:07:09		fr_etere_trmv.
Wrk=CD00452. 01/10/2013 D Wrk=CD00453. 01/10/2013 D	ROCKET MONKEY 1 00:07:11		fr_etere_trmv.
Wrk=CD00453. 01/10/2013 D Wrk=CD00458. 01/10/2013 D	LA LEGENDE DE K 1 00:01:22 LA LEGENDE DE K 1 00:01:27	9.820,12 118,31 ARCHIVE AUTO UPLOAD PAR-ETERE-D 9.760.06 110.91 ARCHIVE AUTO UPLOAD PAR-ETERE-D	
Wrk=CD00459, 01/10/2013 D	LA LEGENDE DE N 1 00:01:27 LES TORTUES NIN 1 00:38:52	9.760,06 110,91 ARCHIVE AUTO UPLOAD PAR-ETERE-D 9.755,27 4,18 ARCHIVE SIG PAR TO AM PAR-ETERE-D	
Wrk=CD00460, Wrk=CD00463, 01/10/2013 D	LES TORTUES NIN 1 00:30:52		frietere_tmv.
Wrk=CD00463, Wrk=CD00467, 01/10/2013 D	LES TORTUES NIN 1 00:01:20	9.751,46 4,21 ARCHIVE SIG PAR TO AM PAR-ETERE-D	
Wrk=CD00475, 01/10/2013 D	LES TORTUES NIN 1 00:01:29		fr etere trmv. ▼
		III	·····

▼ 3.3.5. **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				
Assignee	All			Validity period	1/07	2012 - 1/10/2012			
Workflow - A	Action								
Code	Title	Assignee	*Validity start	"Validity end	Status	*Executor	*Execution time	Duration	Result
RES - QUICK C	Censorship - WS Censorship App	oroval (wip)							
2	Ferrari 150 spot	Vasquez Michael	18/09/2012 10 12:07 AM	25/09/2012 10.12.07 AM	Running				
2280	test work order	Administrators	27/09/2012 11:28:07 AM	4/10/2012 11:28:07 AM	To do				
3671	Casablanca	Administrators	27/09/2012 10:56:44 AM	4/10/2012 10:56:44 AM	To do				
3745	A biue 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

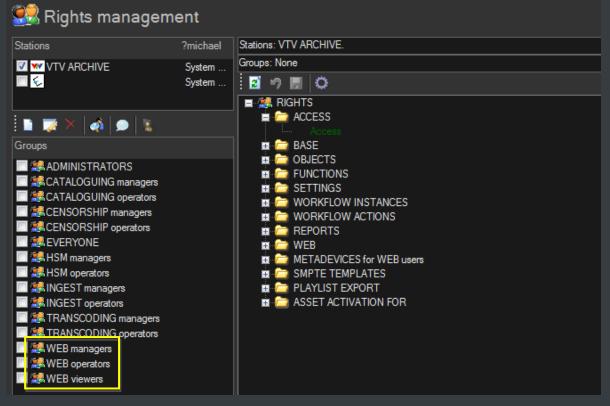
▼ 3.4. Role-based Access Control

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.

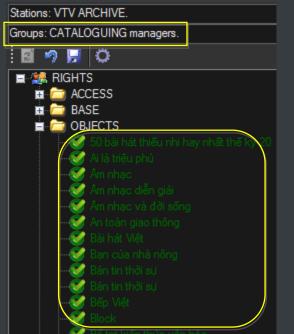
▼ 3.4.1. Permission levels

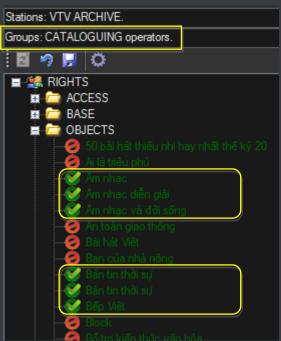
Etere allows managing different access levels for users which form part of the system; specific access rights not only for different users, but also for different stations. As shown below, groups can be split into sub-groups to enable a more-specific assignment of permissions, for example, the **"Web"**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

▼ 3.4.2. 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>group/user</u> will be removed from the <i>Etere Rights</i> since it is missing in the MS Active Directory.
0	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>

▼ 3.5. Documents Management

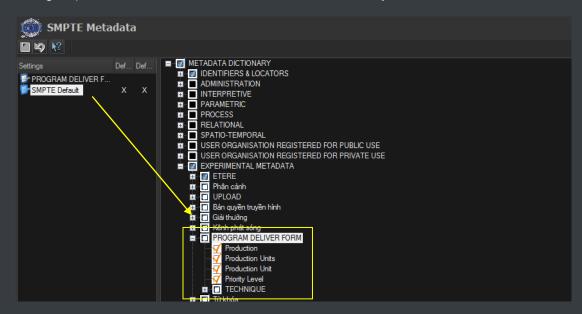
The **Document Management (Do.Ma.)** feature is a big deal for many enterprises especially when the amount of documents raises the cost of ownership to high levels. Reducing paper documents and cataloguing by digitizing and saving in a SQL database, allows an integrated enterprise information system.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

Do.Ma.	ACCOUNTS OF	-
200 4 4		
Date	Description	
30/09/2011 12:52:00	Tecnical user of View attached file	
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.

▼ 3.6. Metadata Cataloguing

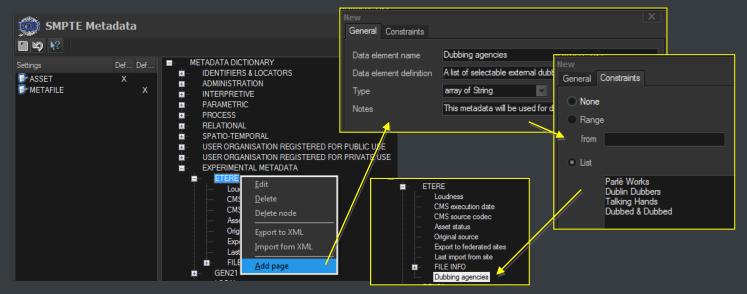
SMPTE Metadata is a key part of the media management, that's why Etere provides a dedicated module for defining eventually useful metadata (e.g. 'technical comments', 'descriptive names', 'intellectual rights') and store them into a robust SMPTE dictionary:



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▼ 3.6.1. Custom definition

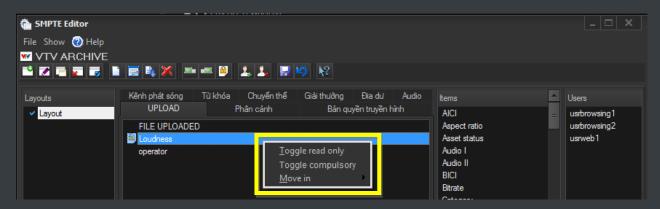
The metadata elements comprised in the media management can be freely configured, for example, adding custom metadata:



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.

▼ 3.6.2. Read-only and compulsory fields

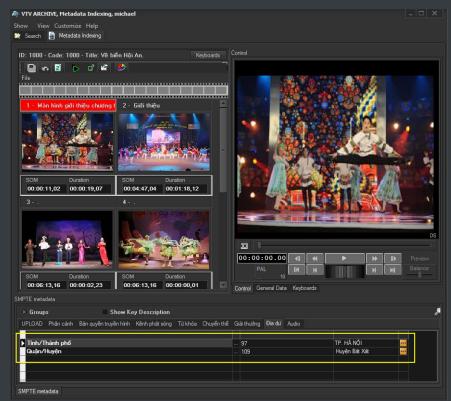
Etere allows administrators configuring metadata fields as either:



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

▼ 3.6.3. 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):

2	🖗 VTV ARCHIVE, Media Library, michael									
File	File Tools Show Utilities ?									
	VTV AR	CHIVE								
Ľ	📕 🕫 📓	EB 🦓 👯	1 😽	- 🐨 🐨	- E 💽 🖳	🖱 🖻 🧕 🧕		K? 4:3 BD		
ID	1000	Code	1000		Title	Vê biển Hộ	ội An.			
1		Rights mar	nagement	ព៍	0	TechnicalData	a ,	<u>0</u> 2	Keys/Keyb	
	Search	🛅 Ge	eneral Data	Prop	erties 🖆	Media 📲	Metadata	SMPTE I	Metadata	
						Exi	isting metadata not	viewed for this for	n	
U	PLOAD Phân	n cành Bàn	quyền truyền	hình Kênh phả	át sóng Từ kho	óa Chuyển thể	Giải thường Đia	du' Audio		
		1.5		Thursday						
	Tinh/Thành		74	TÎNH AN GIA						
	Quận/Huyệr	1	17	Huyện Ba Vì	<u></u>					
- 12										

▼ 3.7. 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:



▼ 3.8. Multi-version management

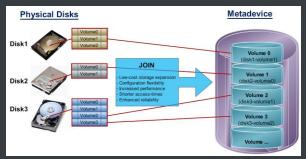
Assets (i.e. media holders) can be organized –along with their related information-under a hierarchical structure based on Parent-Children relationships, thus allowing, for example, handling different versions of a same asset and all the assets derived from them:



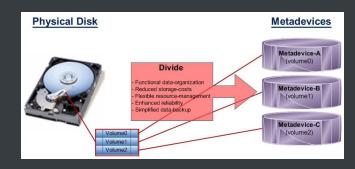
▼ 3.9. Multi-storage management

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:



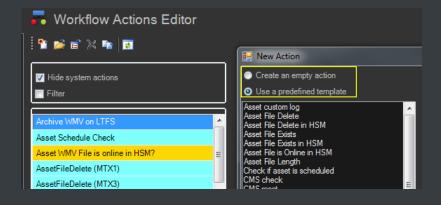
▼ 3.10. Workflow management

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:

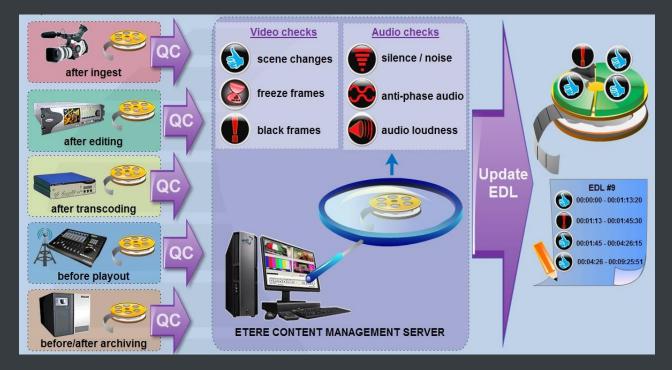
- Clear definition of each complex step of the broadcasting process,
- Visual representation of each step mapped out on a PC not in a paper document,
- \succ Set of instructions and authorizations that must be followed in order to move forward,
- Complete log of all steps carried out, operations denied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

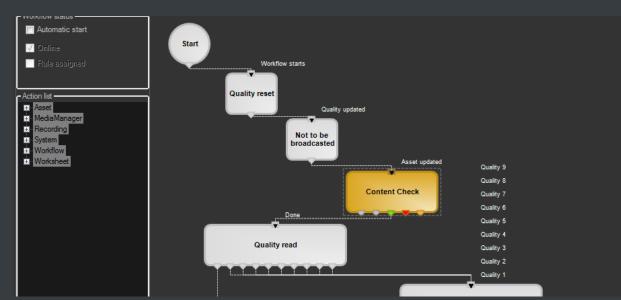


▼ 3.10.1. Content check

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.



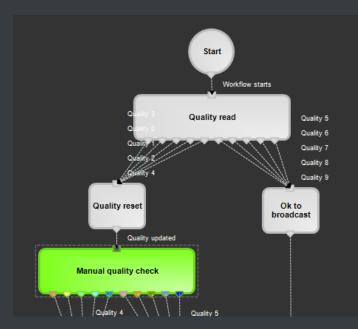
CMS is based on a workflow action which, once included into a workflow that will automatically analyze the asset's proxy video to detect and log (into its EDL) the following audio/video issues:

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.

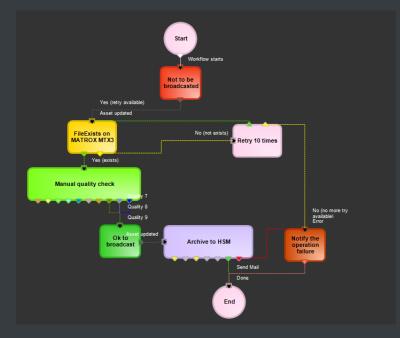
▼ 3.10.2. Quality check

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:



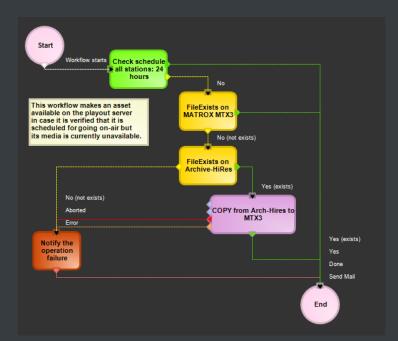
▼ 3.10.3. Archive

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:



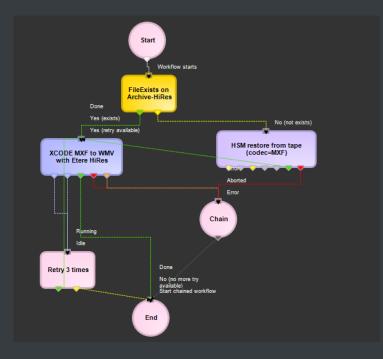
▼ 3.10.4. Restore

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:



▼ 3.10.5. 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:



▼ 3.10.6. MD5 checksum

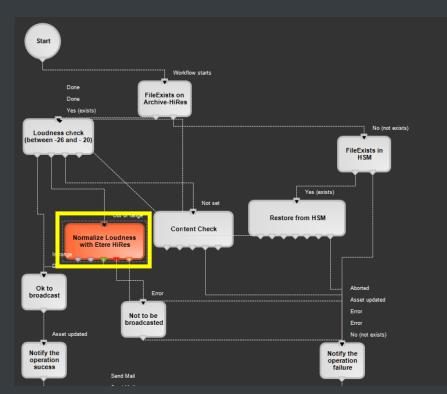
Etere offers an enterprise control of video files integrity; it keeps a log of the hash md5 of video files such in a way that it is possible to verify at any time if they have been modified after their approval. All video files registered on the Etere's database can be verified through an md5 checksum,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

9			mm-dm-7055e2d5-f161-4
Source	Device Archive-HighRes	Codec MX 30	•
Destination *Process type	MD5 Checksum	- -	<u></u>
-	*Process settings		
+ *Setup MD	95 params "Generate MD5 file hash		
	*Check MD5 file hash		
-			

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

▼ 3.10.7. Audio normalization

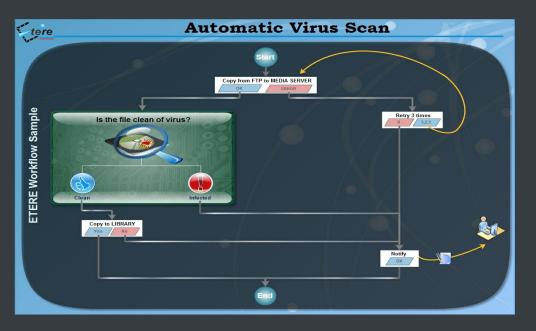
Etere provides a file-based loudness control, allowing stations not only to check the loudness level of media contents but also to normalize them to meet specific limitations.



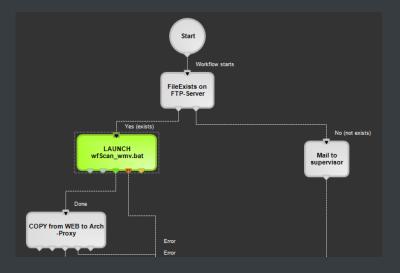
As shown in the sample above, "loudness normalization" workflows can be launched automatically for specific assets, for example, after their ingestion or tapeless reception (i.e. web upload).

▼ 3.10.8. Antivirus scan

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

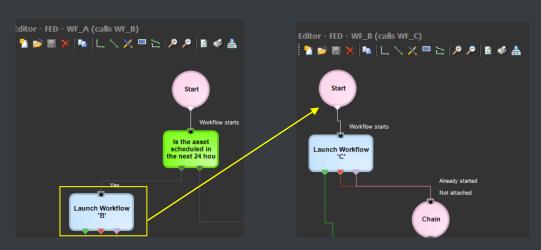


As shown in the figure above, the automatic virus scan capability can be easily integrated within any workflow at any stage just by inserting an action block configured to perform the virus checking; stations can insert them, for example, within the default workflow to be launched after an EtereWeb upload.



▼ 3.10.9. 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'.

▼ 3.10.10. 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:

🌄 Workflow Actions Editor									
1 🔭 📂 🗃 💥 🃭 🔯									
P New Action									
Create an empty action									
 Use a predefined template 									
Set type Set type Set Workflow Priority SMPTE check SMPTE set current time SMPTE set value Update asset code from SMPTE Used Space on metadevice	Name Update asset code as "MOV + ID" SMPTE metadata Asset_ID Check mode Always on asset Loading string MOV								
Wait for time Web request Workflow action Worksheets	Leading string MOV								

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

▼ 3.10.11. 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:

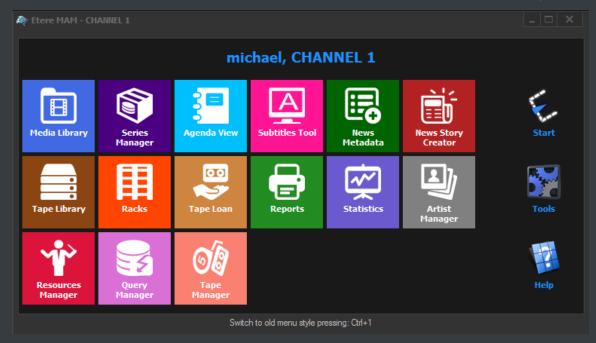
1			
Operation	Workflow	*All stations	"If workflow is running
After a streaming ingest	CC - Audio and Logo setup		*Ask for confirmation
After a Tapeless upload	CC - WebRtpOrganize		*Ask for confirmation
After a video file import	CC - QualitySet (Manual)		*Force workflow reset
After an Etereweb upload	CC - WebRpOrganize		*Ask for confirmation
After an ingest operation	MM - XCOD MXF to WMV		*Ask for confirmation
Asset is modified	CC - Update Harris	•	*Operation allowed
Conforming	MM - CONFORMING	(e)	*Operation allowed

▼ 3.11. Look and feel

In Etere, the GUI experience gives you a professional interface with less distractions and more focus. The high contrast will help working on any light condition from dark master control rooms to enlightened editing rooms:

A Mee	dia Library, michael,	CHANNEL 1									90 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -	<u> _</u>]q	⊐ ×
	ools Show Utilities												
6	HANNEL 1												
	=> 🛛 🛍 🖑 🔀	1 😽 🖥 🖷 🖷	🗄 M. 🔁 🖸	. 🖳 🐡 🖻	ی 🤄	X	= 'e'e'e'e	X				A	
ID 1	Code	1	Title	e W	onderwall						Ver	rsion 1	
	Tapeless reception Search 🖬 G	(j ř.) TechnicalDat ieneral Data 🔂	ta 😤 Properties	SMPTE Metada		Links 🎵 Workflow 🚮	SIAE 🧖	Operations nagement	Keys/Keyboards Secondary Events		People in charge adata	🧭 Pro Rights manage	oposal ement
		Proxy							Media List				
Phys 00:0	00:00.00 📘 🗃 00:0	00:30.07 🔲 🛃 00:0				Archive-Proxy	Archive-Proxy	MATROX MTX3	MATROX MTX3			Der 10000006	
	00:00.00 💽 🗃 00:0	00:30.07 🔲 🔠 00:0	00:30.08 ed. Duration					1		1	AT AT		
	SOM 1 00:00:22:22 2 00:00:00.00	EOM 00:00:22:22 00:00:22:22		Duration 9 00:00:00.01 00:00:22.23				Fere	els the way I do about you	J now			
Segme	ents Number=2				2	101 00:00:28 PAL	.23 41 4 1 14 F	4 	► Shuttle 0.00		▶		DS eview lance

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



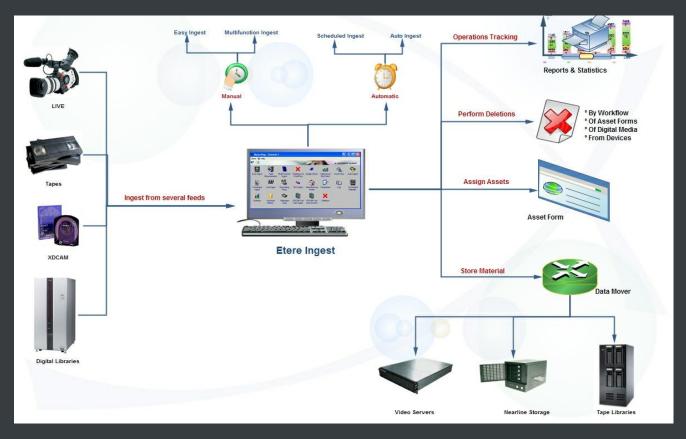
4. MODULES

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.

▼ 4.1. Ingest: A versatile acquisition system

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



▼ 4.1.1. Wide range of acquisition modes

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

lultiche	Scheduled Ingest - CHANNEL 1													
Iultichannel ingest 16/01/2013 13:25:20 - Wednesday										16/0	1/2013	13:25:	20 - Wed	dnesday
Channel 1	hannel 1 Channel 2 Channel 3													
														2
Channel Next ingest Type ID Code Description														
1		pe IV -	Lod -	e	- Descri	iption								
		art			uration		tart Mode -							
							top Mode -							
Resource	es		Status	Counter	Free	e space	File							
127.00	HQ		STOP	00:00:00,0		37:45,00							Test Resource	
	вк													
	LR	0.												
1000	VTR	1												
Scheduled	lingest	operation	s Errors											
DATE		START		DURATI	ON	CH ID_	TIMEREC	TYPE	ID_F1	ILMATI	DESCRI	PTION		
200906	18	14. 63.						-						
				00:00: 02:00:				S	0		Record	ling of us - Re	•Oasis - al Madri	- She's d Char
				00:00:: 02:00:				S S	0		Record Juvent	ling of us - Re	"Oasıs - eal Madri	- She's id Char
							Autor	s natic ing	0		Record Juvent	ling of us – Re	"Oasıs - eal Madri	- She's .d Char
	18 :	22:00:	:00.00	02:00:			Autorr		0		Record Juvent	ling of ∶us - Re	-Oasıs - eal Madri	- She's id Char
200906	jest -	22:00: Schedu	: 00 . 00 led Inge	02:00:			Autorr		o Jest	46104120	Juvent	us – Re	eal Madri	- C ×
200906	jest -	22:00: Schedu	: 00 . 00 led Inge	02:00:			Autorr		o Jest	16/01/20	Juvent	us – Re	eal Madri	- C ×
200906	jest - har	Schedu	led Inge	02:00:) est			Autor		o Jest	16/01/20	Juvent	us – Re	eal Madri	- C ×
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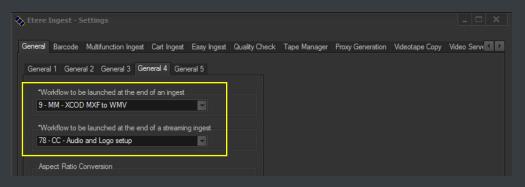
Etere Ingest supports multiple parallel ingest streams, managed automatically either on a single workstation or across various workstations, allowing also to schedule the video files to be ingested: 🗞 Etere Ingest - Scheduled Ingest

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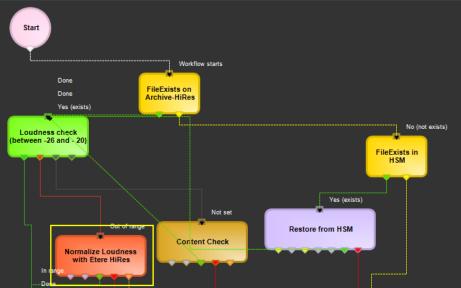
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▼ 4.1.2. Automatic workflow actions

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:



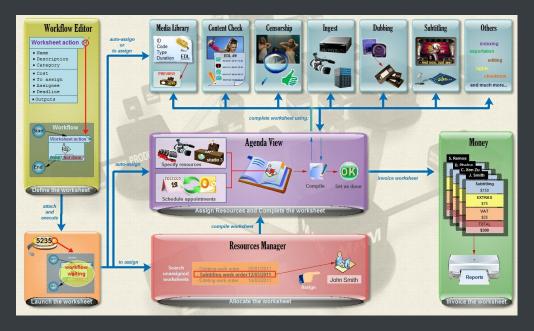
▼ 4.2. MAM: Browsing, editing and more

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



▼ 4.2.1. 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.



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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:

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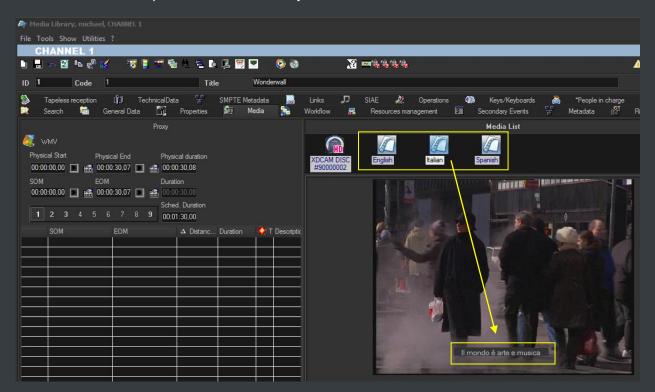
Worksheets related to media tasks (e.g. censorship, trimming, segmenting, subtitling, etc.) are greatly improved with the inclusion on key features such as proxy preview, slow-motion playback, EDL timecode marking, bookmarking navigation and metadata insertion:

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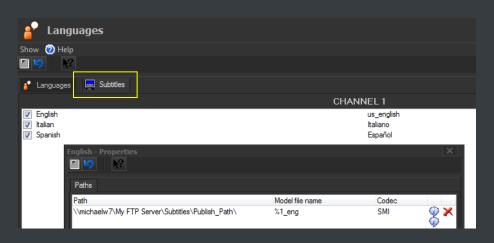
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▼ 4.2.2. Subtitles tool

Etere includes, as a part of its enterprise media management, the capability of managing subtitles, subtitles can be generated whether using the WMP synchronized lyrics tool or any other external tool, in all cases Etere will import them automatically:



As shown above, subtitles are stored in a repository, ready to be moved to the subtitle engine when either the broadcast playlist will require it or a proxy preview will be performed (e.g. for quality check purposes). Additionally, multiple language subtitle files are supported, allowing stations to specify so many subtitling languages as needed (including their storage paths):



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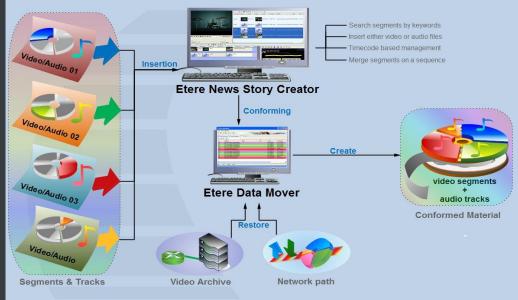
▼ 4.2.3. Media cataloguing and Metadata insertion

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):

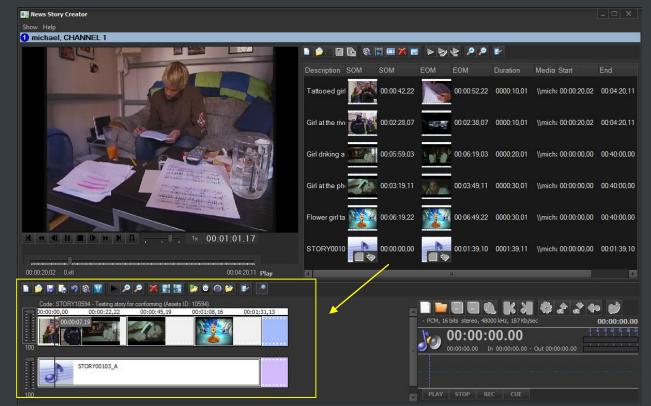


▼ 4.2.4. Video conforming and audio over

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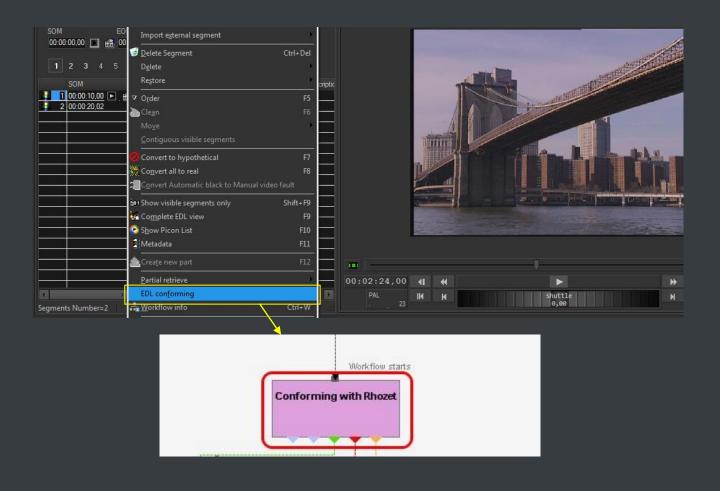
Use this function to, for example, dubbing contents by overlaying audio tracks over a video(s):

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.



▼ 4.2.5. 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:



▼ 4.2.6. 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:

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- 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,
- o 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.

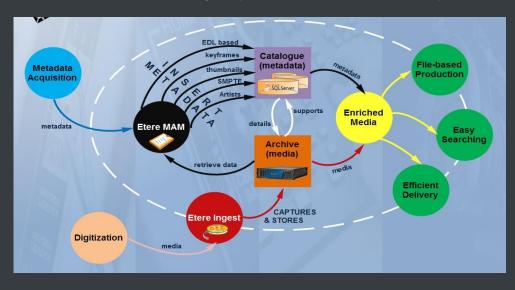
▼ 4.2.7. Logged operations

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

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▼ 4.2.8. Integration between MAM and Ingest

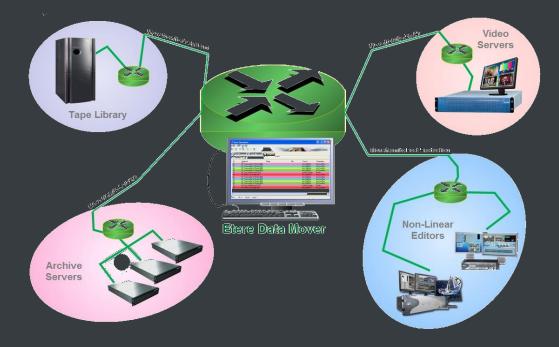
MAM can be used along with Etere Ingest to enrich captured media contents and thus leverage all benefits of a file-based production including easy research and efficient delivery capabilities:



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▼ 4.3. 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.



▼ 4.3.1. Simple and user-friendly interface

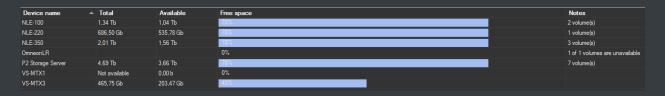
Video contents will be transferred between the various departments (e.g.: near-line storage, archive, post-production, playout, browsing, and even non-Etere systems) by Etere DataMover; this migration process also includes rewrapping and transcoding capabilities.

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▼ 4.3.2. Logical management of data

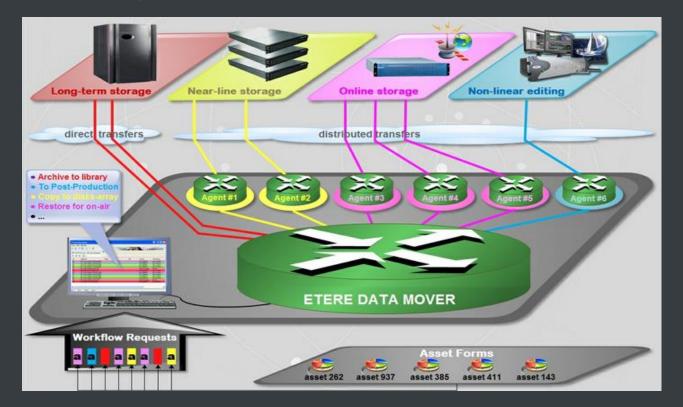
Etere's approach is oriented to "virtualize" the entire media management process, improving it with flexibility, customization and most important cost-effectiveness. Etere manages (logical) metadevices instead of (physical) devices, this approach results in a wide range of possibilities for the media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

▼ 4.3.3. Distributed parallel jobs

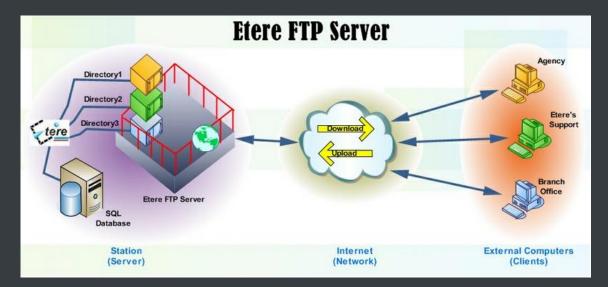
Data Mover is capable to provide both, distributed processing for using an independent agent per data transfer and parallel processing for simultaneously performing different instances of one data transfer; these features will allow stations to exploit high computing resources to use a single workstation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



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▼ 4.4. 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:

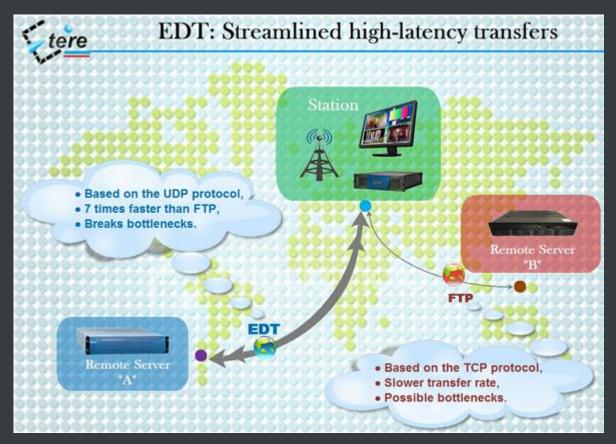
- ✓ Allows external entities to exchange (either upload or download) files with your organization.
- ✓ Avoids excessive disk fragmentation,
- ✓ Easy, reliable and efficient transfer of High volumes of data,
- ✓ Capable to share an unlimited number of directories to specific users.
- ✓ Availability of 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>:

F Etere FTP Server					Etere FTP Server						
File Server Log Style Help					File Server Log Sty						
🕨 Start 💻 Stop 🔲 🔲 Show Activity 🛷 🖸	ear Activity				🕨 Ştart 🔳 Stop		vity 🥔 Glear Activity				
🔹 Activity 🗐 Configuration					Activity Confi 15 / 44.029 [dec]		.31.230.106:60847] >	curp /			
Users	Server				5.19.44.046 (de:	livery@172.	.31.230.106:60847] >				int directo
Default User External	IP Ad Any IP X 0.0.0		Port 21		5.19.44.070 [de:	livery@172.	.31.230.106:60847] >	200 Ok. Parameter was CWD / 250 CWD command succes		/" is curr	ent directo;
Delivery Editing	Clients Max	Login timeout	Idle timeout	Transfer timeout	.5.19.44.082 [de: .5.19.44.087 [de:	livery@172. Livery@172.	.31.230.106:60847] >	PWD 257 "/" is current dir			
List of enabled	0	60	300	0	.5.19.44.098 [de: 5.19.44.113 [de: 5.19.44.118 [de:	livery@172. livery@172. livery@172.	.31.230.106:60847] <	250 CWD command succes TYPE I 200 Type set to 00			
users (featuring	Passive mode IP Address		Port Range Sta	rt Port Range Size	5.19.44.129 [de] 5.19.44.136 [de] 5.19.44.136 [de]	livery@172. Livery@172. Livery@172.		227 Entering Passive M SIZE projectx.vmv 213 12560188	ode (17:	2,31,230,6	8,225,170).
custom shared	EDT			Ports for	.5.19.44.152 [de: 5.19.44.884 D:\(livery@172. iemo_archiv	.31.230.106:60847] <	150 Opening data conne wmv 12,0Hbytes sent in			с. маат.
directories)	_		Port Range Size	FDT				u.			
	Enabled X 90	000	10	EDT	Client 172.31.230.68:57741	User	Root	Last Cmd 15:17:38> CWD /C:/TEMP/	Cmd n. 10	Get bytes 345	Put bytes ED 106
	Logfiles				172.31.230.68:57750	anonymous delivery	D:\demo_archive\delive	15:19:09> STOR Tim.wmv		1819	16595517
	📕 Use a differen	t file for each clien			172.31.230.106.60847	delivery	D:\demo_archive\delive Users	15:19:44> RETR projects.wmv	19	12561194	176
Add Remove Edit	Rollover Size (MB) 2	ytes) Rollov 10	ver Number				"				

▼ 4.4.1. EDT protocol

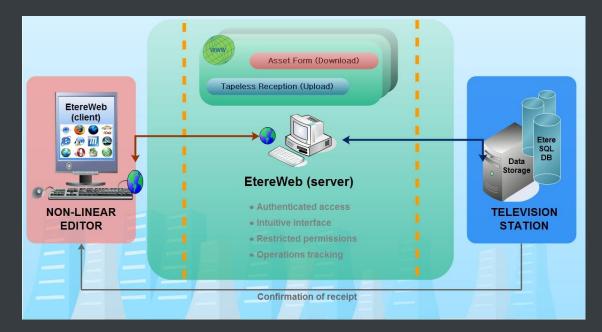
EDT (Etere Data Transfer) is a technology developed by **Etere** based on the high-performance data transfer protocol UDT (UDP-based Data Transfer), it uses a streamlined algorithm capable to utilize all the available WAN bandwidth, making of it the ideal solution for data intensive transfers over high 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.

▼ 4.5. 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	etere web login page Home page
Media library 💌 Series 💌 Schedule 💌 Tape library 💌 Ingest list 💌 Extra 💌 Air Sales Tapeless reception 💌 Account 💌	
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	

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▼ 4.5.1. 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	ANNEL 1			×
File Tools Help				
🛗 💈 🔲 🖘 🗶 😒 Ž	🏄 🛋 🗷 🕅			
Code DevilsAgency				
🔯 Search 🛄 Personal Data F	orm 🖗 Invoicing Data 🕒	Dtherdata 🖭 Banks	💉 Contacts 😧 Web and F	Rights 🧊 Proposal
User Name	evil666			
				Virtual Document
PASSWORD	•••••			Viituai Document

▼ 4.5.2. 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	banel)		
	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.

▼ 4.5.3. 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 par	nel)									
Standard Exten	nded	Notes Quality	Workflow	Worksheet	Media Si	te Stations	Options			
No me	edia									
With linked t	tape	Yes No								
I	Live	Yes No								
Co	odec	WMV		-	-					
Name of video	o file				_					
Devi	rices									
			Ļ		Se	arch				
Record found: 32 / P	age 1		🚽 Save	e search						<< 1 2 >>
Code	I	D Title		Duration	Media				Types Expired	
	1	Wonderwall		00:00:30.0	18 💽 👱	💽 🗉 🧟	🖭 🌉 🖭	🌉 👱 <mark>Seta</mark> 🕞	CLIP	
	2	939SexyPhone2011	spot	00:00:00.0		🧕 🖭 🕺			SPOT	
		Ferrari 150 spot		00:00:30.0	17 💽 👱 (<u>a</u> 🗉			SPOT	
	2	5 "Bee Beer" Com	mercials	00:00:20.0	11 💽 👱 i	<u>a</u> 🗉			SPOT	
		8 Blank Bottles 20	09-IV	00:00:00.0	11 💽 👱 i	<u>a</u> 🗉			SPOT	
	2	9 XYZ spot 2001		00:00:00.0	12 💽 👱 🕯	🗿 👱 📚			SPOT	
2	2	D. I		00 00 00 0		M			01.10	

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)	<mark>-</mark> + &	Download 👱 👆
SOM EOM Duration * X # 00 01:00 00 00:01:00 00 00:00 00 00 00 00:00 00 00:01 * X # 00:04:00 00 00:03:00 00 00:00:00 00:00 00:00:00 00 * X # 00:03:00 00 00:03:00 00 00:00:00 00 00:00:00 00 * X # 00:02:00 00 00:02:00:00 00:00:00 00 00:00:00 00	· · ·	00:05:52.7

▼ 4.5.4. 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		_	
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 💌 Tape library 💌 Ingest list 💌 Extra 💌 Ai	r Sales Tapeless reception 💽
Back to the form > Upload	
Image: Constraint of the server Image: Constraint of the server Image: Point of the server Image: Constraint of the server Image: Point of the server Image: Point of the server Image: Provide the server Image: Point of the server Image: Provide the server Image: Point of the server Image: Provide the server Image: Point of the server Image: Provide the server Image: Point of the server Image: Provide the server Image: Point of the server Image: Provide the server Image: Point of the server Image: Provide the server Image: Point of the server Image: Provide the server Image: Point of the server Image: Provide the server Image: Point of the server Image: Point of the server Image: Point of the server Image: Point of the server Image: Point of the server Image: Point of the server Image: Point of the server Image: Point of the server Image: Point of the server Image: Point of the server Image: Point of the server Image: Point of the server Image: Point of the server Image: Point of the server Image: Point of the server Image: Point of the server Image: Point of the server Image: Point of the server Image: Point of the server Image: Point of the server<	Wait
File Selected: D:\MyStorage\My FTP Server\P2\CONTENTS\PR0XY\0063FX.wmv	
Upload and update File Name: 0063FX.wmv File Size: 2,20 MB 0 ABORT UPLOAD START UPLOAD	

▼ 4.5.5. 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:

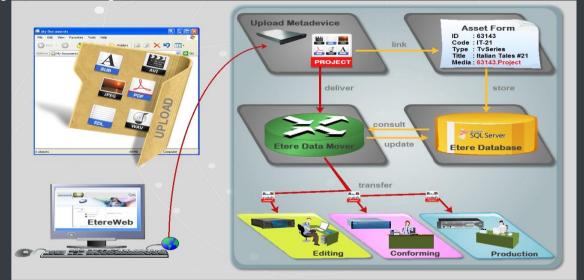
C Web Settings	
B 9	
SQL Server	ETERES1
Database	
Database name	EtereMichael
Login	sa
Password	•••••
Historical Database	
Database name	EtereMichael_historical
Login	sa
Password	•••••
🖻 Paths	
EtereWeb	C:\inetpub\wwwroot\EtereWeb\
Deny contemporary access with same account	False
Etere Web Services	C:\inetpub\wwwroot\EtereWSApi\
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 recention	

• Post-upload workflows:

 Personal Data, michael, CHA File Tools Help File Provised and the second se			
		Other data 🛄 Banks 🦸 Contacts	💮 Web and Rights 🎉 Proposal
Groups Agencies	Options Language Post-upload workflow	english X CC - QualitySet (Manual) MM - COPYVACP BMS to HR MM - XCOD MXF to WMV (RO MM - XCOD MXF to WMV MM - COPY OMN1 to OMN2 MM - COPYBALANCED on NL MM - COPYBALANCED on NL MM - COPYBMS to HR MM - COPYSDI BMS to K2	

▼ 4.5.6. Multi-file upload support

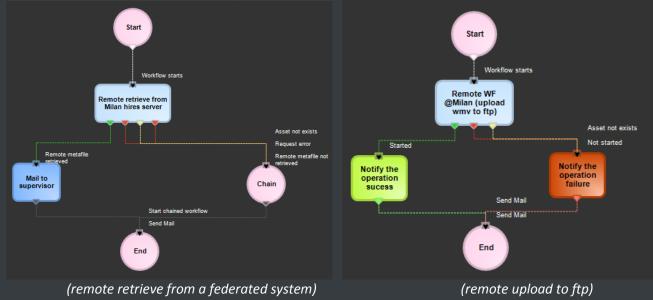
EtereWeb supports not only uploading multiple files with a simple drag and drop action, but also manage them as a single metafile:



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.

▼ 4.5.7. 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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▼ 4.5.8. 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: CHANNEL 1				etere we login page 🖡 Home page 🖬 Login rep
fedia library 🔽 🛛 Series 📘	🔹 Schedule 💽 Tape library 💽	Ingest list 💽 Extra 💽 Air Sales 🛛 Tapeless rec	eption 💽 Account 🔄	
Login report Load Search				
(Company Name/Surname)				
Code	Search	Data Logio	Data LonOut	Time in Ftere Web
Code Devils&nency	Company Name/Surname	Data Login 25/07/2012 15:49:00	Data LogOut 25/07/2012 15:59:00	Time in Etere Web
DevilsAgency		Data Login 25/07/2012 15:49:00 26/06/2012 16:49:04	Data LogOut 25/07/2012 15:59:00 26/06/2012 16:49:25	Time in Etere Web 00:10.00 00:00.20
Code DevilsAgency JonesAndJones Michael	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 Devils 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 00:10:00
DevilsAgency JonesAndJones	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 IonesAndJones Michael DevilsAgency Mark DevilsAgency System admin	Company Name/Surname Devil's Agency Jones & Jones Vasquez Devil's Agency Feilings 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 16:19:53 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
DevilsAgency JonesAndJones Michael DevilsAgency Mark DevilsAgency	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:

	er: evil666 ition: CHANNEL						etere we Login report - Users statistic
				Ingest list 💽 Extra 💽 Air Sales	Tapeless reception 🔝 Account		
	statistics						
Daily in	¹¹⁰ Date	20/07/2012					
	. Login per day						
	Users per day						
No. He day (ave	ours in use per erage for login)	5h 4m					
No. Hi day (av	ours in use per rerage by user)	14m					
	Month	July	•				
	Year		•				
		Show	Export Excel				
Day	Users No.		Login No.	Use Time (User Average)	Use	Time (Login Average)	
1				Om		Om	
				Om		Om	
3			44	5h 22m		14m	
4				5h 4m		14m	
5				0m		0m	
				Om		Om	
				90h 56r		12h 59m	

▼ 4.5.9. 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 page) Ho	me page) Search		ere web Media Library
Media library 💌 Series 💌 Schedule 💽	🛛 Tape library 💽 Ingest list	Extra	 Air Sales 	Tapeless re	ception 💌 Account				
Asset form									
	ID 1 Code 1		Title Wond						
General Data Properties Media Seco Virtual Document Keys/Keyboards	ondary events Metadata Right	ts management	Media data	Workflow	Resources management	*People in charge	SMPTE Metadata	Operations	Links
Prod Self-j	luction Country luction date production Percentage pendent producer res	United Kinge 01/12/1994 0,0% Genres Code 2	sic video dom Genres Descri Rock Alternative	iption					

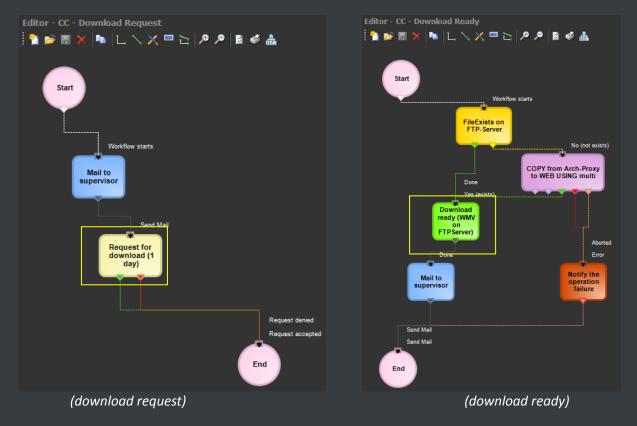
Specially, a section dedicated to the media management will provide information regarding all media files associated to the asset, indicating for all of them the timecode details and EDL configuration with further preview/cut/download/upload capabilities.

▼ 4.5.10. 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) Home page) Search Asset
Media library 💌 Series 💌 Schedule 💌 Tape library 💌 Ingest list 💌 Extra 💌 Air Sales Tapeless reception 💌 Accour	nt 🔽
Asset form	
📑 🖬 📽 📑 👍 🖒 🚳 🚰 ID 1 Code 1 🔤 Title Wonderwall	
General Data Properties Media Secondary events Metadata Rights management Media data Workflow Resources management	ent *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 🥙 MTX Beta Beta 🛄
SOM 00:00:00.00 The request has been already sent	
1 - (EDL n.1	•

Page 51 of 67 © Contents of this publication may not be reproduced in any form without the written permission of Etere. Web requests are managed via workflow to allow a custom and automatic launch of worksheets:



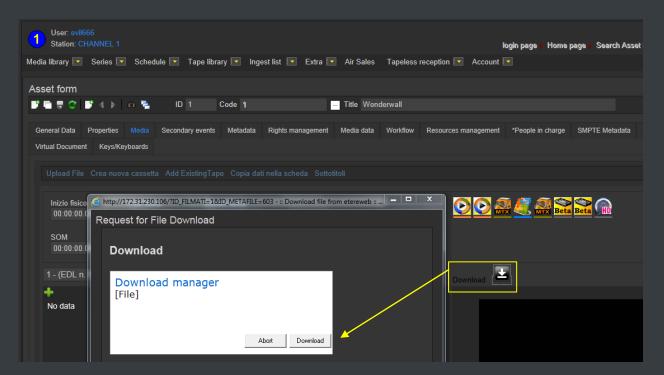
Supervisors count with a dedicated interface for viewing pending requests and accept/deny them:

Media Library, michael, CHANNEL 1							_ 🗆 🗙
File Tools Show Utilities ?							
CHANNEL 1							
🖿 📰 🗠 🗃 🎼 🖑 🔣 👘 🦉 🗮 🖷 👘 👘	L D 🖟 🛒 🎽 🛛 📀	8	2 🔤	` \$ ` \$			🛕 File copy running
ID 1 Code 1	Title Wonderwall						
诊 Tapeless reception [ʃ] TechnicalData [□] ★ Search 镭 General Data [ʃ] Proper ★			D SIAE	Ø Operations sources management	Keys/Keyboards Secondary Events	🚔 *People in charge 🐨 Metadata 🚮	Proposal Rights management
Requester Devil's Agency Request	Download metafile		Codec	WMV			
Notes			Respo	nse Request accepted			
Requester Jones & Jones Request	Download metafile		Codec	WMV			
Notes			Respo	nse			
Nide temporary rights							
Requester	Request	Codec		Expiry date			
Skywalker Luke	Download metafile	WMV		05/12/2124 15:18:50			

Page 52 of 67 © 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:



▼ 4.5.11. 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.

▼ 4.6. MTX: IT ingest/playout based on Matrox technology

Etere MTX is the application offered by Etere to drive the most popular HD/SD Matrox digital video editing platforms, it combines the professional effects technology of a wide range of industry standard codecs with an Etere system, allowing to capture and playback in both high and standard definition formats over digital inputs.



The highly integrated, end-to-end workflow streamlines all the core processes, MTX forms part of global Etere MAM solutions, thus allowing it to use the same metadata and interface available for ingest, content management, transmission control, traffic, archiving, and monitoring.

▼ 4.6.1. Robust IT solution

The multi-format ingest allows to use any codec and wrapper on the market, whereas for playout it can mix in real-time all types of footage on a timeline with more layers and/or effects, as well as parallel multi-format ingestions, all these under a user-friendly interface. Besides the common preset and preview bars, available on a friendly touch-screen graphic interface, MTX includes most graphics and audio functions such as:

- 8 logo layers with unlimited sizes
- 1 Crawl /CG

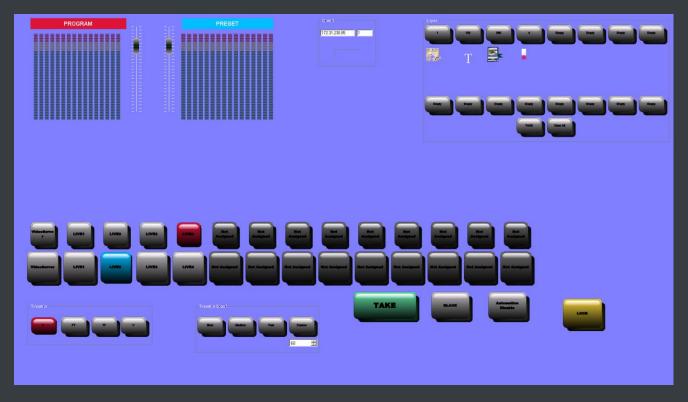
- Audio shuffling
- Audio control

- Dolby E Passthrough
- Video transitions

Supported P	layout Forn	nats	Supported	Ingest Form	nats
Codec	Resolution	Wrapper	Codec	Resolution	Wrapper
Apple ProRes 422	SD/HD	MOV	Apple ProRes 422	SD/HD	MOV
Apple ProRes 422 HQ	SD/HD	MOV	Apple ProRes 422 HQ	SD/HD	MOV
Apple ProRes 422 LT	SD/HD	MOV	Apple ProRes 422 LT	SD/HD	MOV
Apple ProRes 422 Proxy	SD/HD	MOV	Apple ProRes 422 Proxy	SD/HD	MOV
AVCHD	HD	MOV	DVCAM	SD	MXF, MOV, AVI
AVC-Intra 100	HD	MXF	DV 25	SD	MXF, MOV, AVI
AVC-Intra 50	HD	MXF	DVCpro	SD	MXF, MOV, AVI
DVCAM	SD	MXF, MOV, AVI	DVCpro50	HD	MXF, MOV, AVI
DV 25	SD	MXF, MOV, AVI	DVCPRO HD	HD	MXF, MOV, AVI
DVCpro	SD	MXF, MOV, AVI	HDV 720p	HD	AVI
DVCpro50	HD	MXF, MOV, AVI	HDV 1080i	HD	AVI
DVCPRO HD	HD	MXF, MOV, AVI	HDV 1080p	HD	AVI
H.264/MPEG-4 AVC	SD/HD	MOV	IMX 30,40, 50	SD	AVI
HDV 720p	HD	AVI	MPEG2 I-Frame	SD/HD	AVI
HDV 1080i	HD	AVI	MPEG2 LGOP	SD/HD	MXF, MOV, AVI
HDV 1080p	HD	AVI	XDCAM HD	HD	MXF
IMX 30,40, 50	SD	MXF, AVI	XDCAM HD422	HD	MXF, MOV
MPEG2 I-Frame	SD/HD	AVI	WMV	SD/HD	
MPEG2 LGOP	SD/HD	MXF, MOV, AVI			
XDCAM HD	HD	MXF			
XDCAM HD422	HD	MXF, MOV			
WMV	SD/HD				

▼ 4.6.2. Master Control Panel

The **MTX Master Panel** is a standalone user graphical interface to allow operators to manually switch a master control, it combines the management of the inputs/outputs of a master control with its preset and take functions, allowing also to customize the various on-screen descriptions.



The **MTX Master Panel** requires only a card with 1 input and 2 outputs to deliver full Master Control functionalities, with a really cost effective system, and the possibility of working in SD and HD without any additional cost. The **MTX Master Panel** will provide all the standard functions of a master control with just a touch of the monitor.

▼ 4.7. 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.:

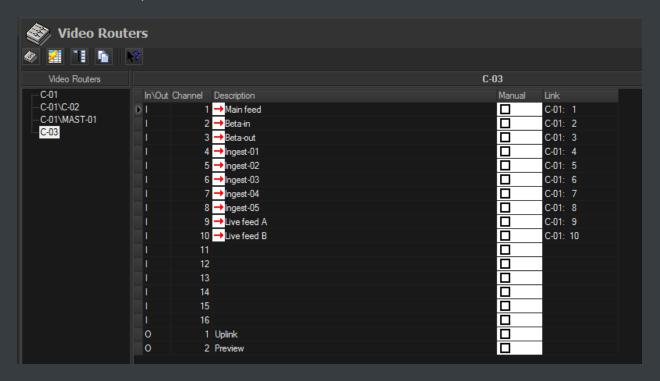
iumain - On-Air - I	Main							auclone -	Idle - Clone	
aumain auclone		Count do		1,13	01 : 26 : 50 , 03	types/break	3:01,12			
OAR 3D		- 189 18 SD	100 m	NG VTR	Beta-01 ???					
	Date	Time	Duration	Code	Description	Туре	File name	Secondary Events	Properties	Blocks
Þ	1/16/2013	11:30:07,21	00:00:00.00	START	********** START **********	START				
	1/16/2013	11:30:07,21	00:45:00,00	News_Natio	National Live News	Informational	1-Main feed		🚳 🖗 📼 🎆 🖢	
	1/16/2013	12:15:07:21	00:00:40,08	PromoE01	PROMO EtereTV 001	Self-Produced	0MTX 2936		🔁 🗈 🕵 🙆	
S II	1/16/2013	12:15:48,04	00:00:40,08		SexyPhone2011 spot	Commercial Pr		₹ () <i>₹</i>		
3	1/16/2013	12:16:28,12	00:00:30,01	3637	"Bee-Beer" spot (Lucy Pinfield)		0MTX 3637		🗐 🖗 🗖 🚟	
SAI	1/16/2013	12:16:58,13	00:00:30,08	1411	20104-"Killer" cigarettes		0MTX 1411			
2	1/16/2013	12:17:28,21	00:00:30,08	2	Ferrari 150 spot	Commercial Pr	OMTX 2		20) T 😤	
T C C C C C C C C C C C C C C C C C C C	1/16/2013	12:18:39,12	00:09:48,15	3772	On the waterfront	Entertainmen	0MTX 3772	/		
EA	1/16/2013	12:38:16,17	00:25:21,12	3068	Deep Trip	Entertainmen	0MTX 3068			
ereren kre <mark>s</mark>	1/16/2013	13:03:38.04	00:01:00,05	8	Adagio	Entertainmen	OMTX 8		🗐 🔊 📼 🧟 🗍	
N.	1/16/2013	13:04:38.09	00:02:30,00	30	Don't go away	Entertainmen	0MT 30		🛛 🔊 🖻 💆	
Ē	1/16/2013	13:07:08.09	00:00:30,08	1	Wonderwall	Entertainmen	MIX 1		🔤 🚧 🐨 🧖 🚥	
S.	1/16/2013	13:07:38,17	00:06:26,06	41	Alejandro Sanz - Mi soledad y yo	Entertainmen	OMTX 41		🖾 🔉 📼 🧟	
N.	1/16/2013	13:14:04.23	00:02:30,00	46	Stupid girl	Entertainmen	0MTX 46		🖾 () 📼 🧟	
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Description		00:	00:00,00		00:00:10,02	00:00:20,04	00	:00:30,06	00:00:	:40,08
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	Secondary Object		S		:00:00,00 Eon: 00:00:40,08 00:00:0,00 after the event start - Stop	command at 07:00:4	0,08 after the command	is launched		
*	Router				(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	1	Object] Som: 00:00:15, ers: Execute command 0		event start	
1 11						_				Z

▼ 4.7.1. 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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	00 <i>:20:26</i> ,0 H-1: comma	2 Liv nd successfull	e 81 : 34 : ly execute		Fixed &	0.00.00.00										11:54:41,20	2013-01-	
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		12:15:48 16/01/2013			•	+5:30:07		123 SexyPhone20	11 spot		OMTX	2939	00:00:00,00-> 00:00:40,0		😔 🗖 🆗	4		
		12:16:28			•	+5:30:07		3637 "Bee-Beer" sp	oot (Lucy Pi	infie 🌉	OMTX	3637	00:00:00,00-> 00:00:30,0		😔 🗆 🖗	4	2	
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		II STILL	II] D-STILL	► SKIP	K RESTAR	I€ T Recue	PROTE	OT CLONE	5 LIVE	SK2LIVE	D-STOF		TOP					

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:



▼ 4.7.2. 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:

-													
		Functions Edit	Tools AD Inserti	on AirSales	Show Help								
	CHAN		▶?							Real schedule	, Wednesday 1	16 January	2013
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			countd	own		live		types/break					
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0/	D	3D 4:3	4:3 189	136-3	189 VTR	Beta-01	_						
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lcor				Duration	Code	Description			File name	Secondary Events	Properties	Blocks	S 🔶
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	8	1/16/2013	12:15:48,04	00:00:40.0		SexyPhone2011 spot "Bee.Beer" spot (Lucy Pinfi	eld)	Commercial Pri Commercial Pri		2 U 9			
	ŠÅ I		12:16:58,13			2:15:07 to 12:15:48 - PD							
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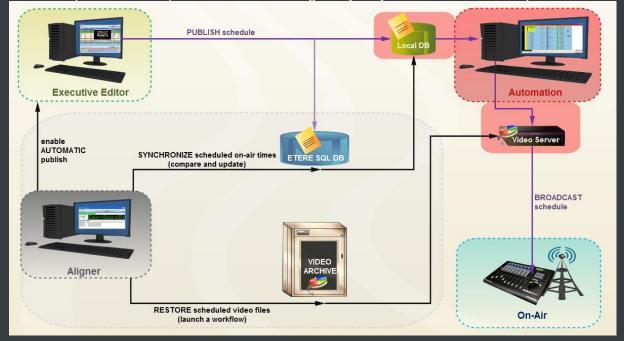
▼ 4.7.3. As-Run Logging

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
[A	PP] [2010-04-28	15:09:20.21 AUTOMATION RESET
[A	PP] [2010-04-28	15:10:31.05AUTOMATION IS ONAIR
[C	LIP] [2010-04-28	15:10:30.17Y , 210136785149, 22 , 0LIVE00000 , Live News , F, 00:00:00.00 , 00:59:59.24, 01:00:00.00
[C	LIP] [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
[C	LIP] [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
[C	LIP] [2010-04-28	16:47:08.02Y , 100000008996, 3 , 0MCL PathMov, PathMov , T, 00:00:00.00 , 00:08:12.24 , 00:08:13.00
[A	PP] [2010-04-28	16.48.13.20PLAYOUT COMMAND: STILL
[A	PP] [2010-04-28	16.48.14.19PLAYOUT COMMAND: RESTART_FROM_CURRENT
[A	PP] [2010-04-28	16.48.20.07PLAYOUT COMMAND: STILL
[A	PP] [2010-04-28]	16.48.23.01PLAYOUT COMMAND: RESTART_FROM_NEXT
[C	LIP] [2010-04-28	16:48:23.01Y , 100000008998, 32, 0MCL Minuet , Minuet , T, 00:00:00.00 , 00:11:10.24 , 00:11:11.00
[C	LIP] [2010-04-28	16:52:12.06Y , 100000009000, 33, 0MCL Prima , Primavera, T, 00:00:00.00 , 00:09:19.24 , 00:09:20.00
[C	LIP] [2010-04-28	16:54:13.12Y , 100000009003, 49, 0MCL Vivace, Vivace, T , 00:00:00.00 , 00:04:59.24, 00:05:00.00
[A	PP] [2010-04-28]	16:55:16.11PLAYOUT COMMAND: SKIP
[C	LIP] [2010-04-28	16:55:16.11Y , 100000009005, 51 , 0MCL OdeJ , Ode Joy , T, 00:00:00.00 , 00:04:59.24 , 00:05:00.00
[C	LIP] [2010-04-28	16.57.46.19Y , 100000018164, 12, 0LIVE00001 , Meloldy01, T, 00.00.00, 00.00.14.24 , 00.00.14.15
[A	PP] [2010-04-28]	16.59.53.01PLAYOUT COMMAND: EMERGENCY_LIVE_START
[A	PP] [2010-04-28]	17.05.57.05PLAYOUT COMMAND: EMERGENCY_LIVE_END
[A	APP] [2010-04-28	17:15:35.06AUTOMATION STOP
Log C	Closed	

▼ 4.7.4. 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:

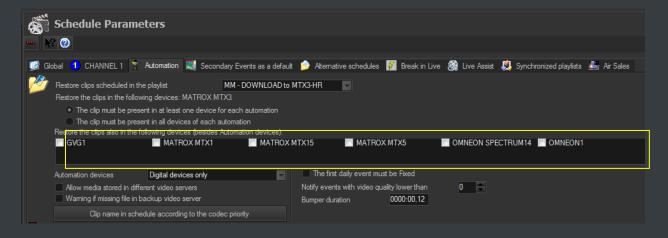
- Automatic publishing of the schedule by Executive Editor,
- Ensure consistency of the published schedule by updating it with last changes,
- Launch workflows automatically to restore video clips scheduled to go on-air.

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

-				
📑 Etere Aligner, michae	el, CHANNEL 1			
Edit Show Help				
1 michael, CHANN	EL 1			
2				
aumain - On-Air - Main			auclone - Idle - Clone	
	countdown	live	types/break	
●aumain ■ ■ ■ ●auclone ■	00 : 08 : 24	,01 01 :22 :	12,16 00:08:2	Y,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\TP/ \\michaelw7\etereau\user.001\2013\TP/			=

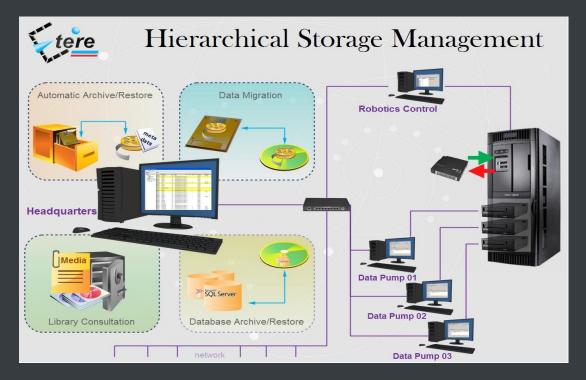
Page 60 of 67 © Contents of this publication may not be reproduced in any form without the written permission of Etere.

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:



▼ 4.8. HSM: A tape-based archiving

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	⊘ <u></u>									
a 👔 Etere HSM - Headquarters	Таре	Media Pool	Slot	Drive	Used	Test	Free space	Used Space	Space deleted	Library
• Servers	0008B3L5	MP MAIN		1002	x		0 bytes	1.30 TB	138.38 GB	HSM1\SON
⊳ <mark>1</mark> HSM1	0008B4L5	MP MAIN	3037		x		54.00 MB	1,38 TB	0 bytes	HSM1\SON
Workflows	0008B5L5	MP MAIN	3012		X		4,15 GB	1,37 TB	0 bytes	HSM1\SON
Operator Requests	0008B6L5	MP MAIN	3004		X		4,16 GB	1,38 TB	0 bytes	HSM1\SON
Work queue	0008B7L5	MP MAIN	3074		X		13,13 GB	1,37 TB	0 bytes	HSM1\SON
The second secon	0008B8L5	MP MAIN	3099				1.36 TB			HSM1\SON
	0008B9L5	No Media Pool	3003		X		1.23 TB	156,16 GB	108.91 GB	HSM1\SON
	0008BAL5	MP MAIN	3007		X		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		X		1.38 GB	1.38 TB	0 bytes	HSM1\SON
	0008BHL5	MP MAIN	3019		Х		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
	•			III						Þ
	Page	(0008B3L5-0008CJL5)	•		Records: 5	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:

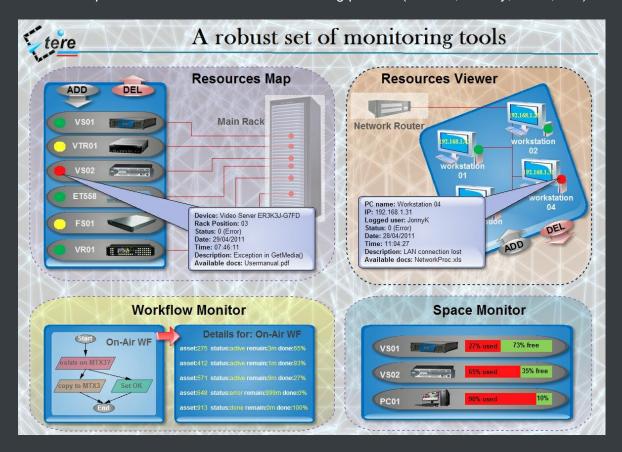
Etere HSM - Robotics Com File Configuration ? MASTER [NO CLONE] Library Properties Contents Slots		etlibraryws2008\IBM 3573-TL	 Carry out loan-balanced movements on an intelligent multi-volume scenario, Extend your storage space by joining physical devices into one metadevice,
4096 A 459AAGL5 4097 4 458AAGL5 4098 4 458AAGL5 4099 4100 4101 4102 4103 4104 4105	256 1 457AAGL5 257 🗃 455AAGL5	SCSI Library (driver-claimed) Licensed slots: 10 Enabled drives: 2 of 2 of this library	 Physical devices into one metadevice, without altering the archiving workflow, Categorize your storage devices by dividing them into metadevices with no partitioning required, Space limits and storage distribution are defined by the user and not by devices itself, Classify metadevices in media pools in order to automate their management, Background defragmentation and online/offline tape management, Scheduled archiving of devices, media contents and entire databases.

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.

▼ 4.9. 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.

▼ 4.9.1. 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			
Name By range 0 - 99999999	Filter name	By range 0 - 99999999	Active 🔽	
ERRORS	General		Description	
INFORMATION	Login name		PC name	
By GPI	Site]	
ETERE-AUTO-FILTER WARNING	Severity —	🔽 Warning	V Error	🔽 Unknown
0 - 5000	Error code From	0	То	99999999
	From	172.31.230.1	То	172.31.230.255
	Action Manage	Archive Only re-set	end 💿 Manage	and re-send 🛛 Discard
	Alarm type	To email address	michael@etere.eu	
	V Sound	File Name	C:\windows\media	vnotify.wav 🗾 ▶
	GPI	Device number *Switches GPI test		MICHAELW7

▼ 4.9.2. 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.

Monitoring Console File SNMP Tools	🕜 Help		NRN Is anyour		Contra Contra		and the	-	l	- 0 X
				Spac	e monitor					
2 💿 🗉										
Device name	▲ Total	Available	Free space						Notes	
DB Server HSM SERVER			0% 0%						2 of 2 volumes are u	
Masstech MassStore	1,34 Tb	1,04 Tb	78%						2 of 2 volumes are u 2 volume(s)	Inavaliable
MichaelW7	6,70 Tb	5,23 Tb	78%						10 volume(s)	
NLE-100	1,34 Tb	1,04 Tb	78%						2 volume(s)	
NLE-220	686,50 Gb	535,78 Gb	78%						1 volume(s)	
VLE-350	2,01 Tb	1,56 Tb	78%						3 volume(s)	
Change view				Resou	rce Viewer					
💈 🔟 🔑 🔎 题	View connection typ	e All	- 🗈 👬 - 🗉 - 🛛 🐺	Last ping executed	16/01/2013 12:37:20					
File View	Everiz New New Logo4			v G G R R	ANEO W2 W2 Feot	Ch-1 Ch-2 MTX1- Logo Ch-1 Ch-1	CHANN EL 1 CHANN EL 2 LL 2 LL 2 LL 2 LL 2 LL 2 LL 2 LL 2			
Workflow Total workflo		 Object Total objects 	- Status Total statu	- T) (*	- .					
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▼ 4.9.3. 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".				

▼ 5. KEY BENEFITS

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

- ✓ Flexibility, on meeting all requirements by proving a versatile media management system tightly integrated with all the metadata and equipment
- ✓ Scalability, to increase the capturing/playing channels without altering the workflow complexity, minimizing operational overheads overall costs
- ✓ Efficiency, achieved by reducing repetitive manual operations, allowing to define and include in advance in automatic preset workflows
- Reliability, derived from the use of streamlined workflows provided with detailed logs for tracking the overall and individual functioning of the system

- ✓ Accuracy, on all phases, reducing the risk of mistakes when archiving data since all archived contents are continuously checked and monitored
- ✓ Integration, of non-linear editing systems to allow direct access to archive through a web interface empowered with the highest security standards
- ✓ Security, across all operations based on specific user permissions depending on the structure of the customer's Active Directory domain
- ✓ Usability, a sophisticated interface guarantees a smooth use and intuitive management of media content, from ingest to delivery

Etere: a consistent system!

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

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

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

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