PROJECT

Etere
a consistent system

VTVCab:

An enterprise archiving system based on MERP technology

May 2013

Table of Contents

▼ *1. INTRODUCTION* *4*
▼ *2. PROPOSAL OVERVIEW* *5*
▼ *3. ETERE ARCHITECTURE* *7*
▼ 3.1. Distributed system 7
▼ 3.2. Multi-level storage hierarchy 8
▼ 3.3. Access levels 9
▼ 3.4. Rights-based operations 9
▼ 3.5. Active Directory Integration 10
▼ 3.6. Look and feel 10
▼ 3.7. Reporting services 12
▼ 3.8. Documents Management 12
▼ *4. MEDIA FUNCTIONALITIES* *13*
▼ 4.1. Multiple Storage Management 13
▼ 4.2. Custom Workflows 14
▼ 4.3. Integration between workflows 15
▼ 4.4. File-based processing 16
▼ 4.5. Metadata Organization 23
▼ *5. ETERE COMPONENTS* *24*
▼ 5.1. MTX: Digital capture based on Matrox technology 25
▼ 5.2. Tape Manager: An enterprise management of tapes 28
▼ 5.3. HSM: A tape-based archiving 33
▼ 5.4. Ingest: A versatile acquisition system 35
▼ 5.5. MAM: Browsing, editing and more 38
▼ 5.6. DataMover: Intelligent archiving and delivery 46
▼ 5.7. EtereWeb: Post-production integration 48
▼ 5.8. Monitoring Console: A complete SNMP monitoring 58

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▼ 5.9. Scheduling: A complete playlist management 61
▼ 5.10. Multichannel View: Global scheduling management 65
▼ 5.11. Automation: Reliable playout system 67
▼ 5.12. STMAN: Secondary objects management 72
▼ *6. KEY BENEFITS 73*

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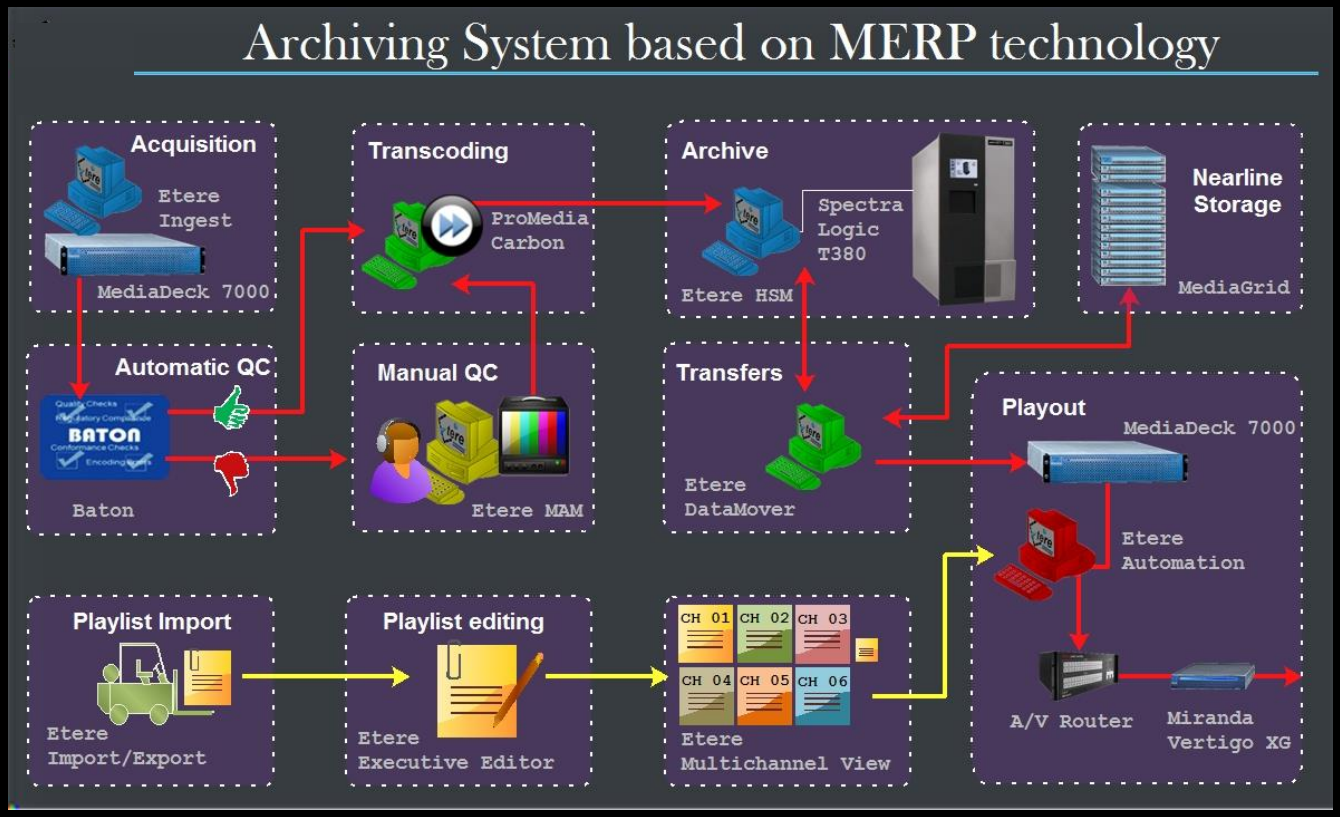
▼ 1. INTRODUCTION

VTVCab which stands for **Vietnam Cable Television** (formerly known as VCTV) is largest cable television network in Vietnam and a division of the national television **VTV** established in 1995. **VTVCab** includes a wide range of pay TV channels with plentiful contents and various forms including cartoons, dramas, music, news, sports, health, shopping, etc. The company's slogan ("mounting family") clearly defines the mission of **VTVcab**: mounting every member of the family under one roof with the best value, service and selection of content.

The proposed solution is designed to provide an **"Enterprise archiving system based on MERP technology"**, a solution able to store and transparently manage the facilities' archive material over the long term. Etere's solution consist of a system intended to be the core of the central archive, providing media archive management and delivery services to the global system including instant access and delivery of media files; all this media management is cemented on a file-based workflow framework featuring a wide range of function-specific workflows for ingest, production and playout with additional integration capabilities.



This paper is aimed to describe how the solution proposed by ETERE is able to fulfill all the specifications required by **VTVCab**, making a special focus on the Etere's MERP technology.

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▼ 2. PROPOSAL OVERVIEW

VTVCab has requested a consistent project for the digital management of media content under a file-based workflow environment. Etere's solution consist of a system intended to be the core of the global system, providing media archive management and delivery services including instant access and delivery of media files. Here below are listed the requirements specified by the **VTVCab** and the solutions proposed by **Etere** to fulfill them:

	VTVCab specifications		Etere solutions
1	**HD channels on MediaDeck 7000 (with MediaPort I/O modules)**	**20** (1 main and 1 backup per automation)	**Etere Automation** The system that automates the playout of playlists, providing a main/backup functioning for fault-tolerance capabilities. Four channels will be transmitted with a ChannelPort with 8 layers whereas other sixteen channels with a ChannelPort with 4 layers.
2	**Channels for baseband ingest on MediaDeck**	**10**	**Etere Ingest** A flexible solution for capturing SD/HD from a wide range of sources, including manual, scheduled and automatic acquisition and workflow integration for predefined tasks. The ingest system will acquire 60 hours per day content in XDCam HD 1080i /50mbsec format. The system will also ingest via satellite.
3	**Automatic File-based QC based on Baton**	**04**	**Etere Workflow** A tight integration with a Baton solution will permit to perform an automated QC of ingested files and get results into Etere workflows for decision making.
4	**Manual File-based QC**	**02**	**Etere MAM** The **Resource Management** application gives a workflow-based management of media tasks including preview and EDL features. A specific task will allow to manually control (in a baseband monitor) all those files flagged by the Baton's automatic QC.
5	**ProMedia Carbon licenses for HiRes Transcoding**	**05** (minimum)	**Etere DataMover** A workflow-based manager of transcoding empowered with a performance-based scheduling for a load balanced execution of jobs and a reliable content transformation.
6	**Nearline storage based on Media Grid (200TB usable)**	**01**	**Etere DataMover** The workflow-based manager also takes in charge the transferring of content for an efficient and timely delivery.
7	**Long-term storage based on Spectra Logic T380, 200 slots and 200 tapes**	**01**	**Etere HSM** An automatic tape-based storage system for long-term management archive, enhanced with workflow capabilities and automatic maintenance tasks
8	**Offline playlist preparation users**	**10**	**EtereWeb** A secure and robust threshold to the station's outside world, a web-based interface for allowing remote users to prepare playlists and preview lo-res media of scheduled events
9	**Supervisors for playlist editing**	**05**	**Etere Scheduling** The **Executive Editor** allows editing playlists and provides

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			enhanced preview capabilities (secondary events, logos and subtitles displayed in the correct position and at the correct time). Moreover, the **Import/Export** tool will allow to easily import playlists arriving in XML format into the broadcast system
10	**Operators for playout playlist control**	**05** (1 per 4 channels)	**Etere Multichannel View** An easy-to-use utility that provides a global view of playlists from multiple channels, allowing to visualize playlist events in real-time as well as making changes
11	**Channels with logo branding on ChannelPort**	**20**	**Etere STMan** The application for the multi-layer and real-time management of secondary objects (e.g. logos, branding, crawls, etc.) associated to events scheduled in broadcast playlists.
11	**CG licenses for sports channel graphics (on Miranda Vertigo XG)**	**04**	

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.

With Etere, **VTVCab** will get a rock-solid distributed system able to integrate into a single solution the key features of a Media Asset Management. Operations related to station media are cemented on a file-based framework featuring a wide range of workflows for ingest, production and playout. The station will be mainly provided with the following key features:

- A distributed architecture managed via workflow to avoid any single point of failure
- Seamless integration with existing and co-existing systems
- Safe and fully-tracked access to the content archive
- Enterprise management and transport of media between storage devices
- Transparent media transferring, the correct media format will be always delivered
- Quality control to ensure the reliability of archived assets over short and long terms
- High preservation and high availability of archived and catalogued media content
- Browsing features including preview, slow-motion, timecode, bookmarking and metadata
- Full integration support for NLE systems (Avid, FCP, etc.), including content uploading/downloading
- Fast and efficient transferring connection between internal –and external- systems
- Reliable monitoring of the modules and equipment integrated within the global system

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▼ 3. ETERE ARCHITECTURE

Etere is based on a distributed architecture which allows different modules to run on different workstations interconnected via a local area network. All system configuration parameters, security roles, user data, and pre-defined rules are stored in a reliable SQL database supporting backup and redundancy operations. A greater availability and reliability is achieved thanks to the ability to manage main and backup systems able to manage independent resources so in case of failure the station can recover from any hardware or software failure by simply switching to the backup system.

▼ 3.1. Distributed system

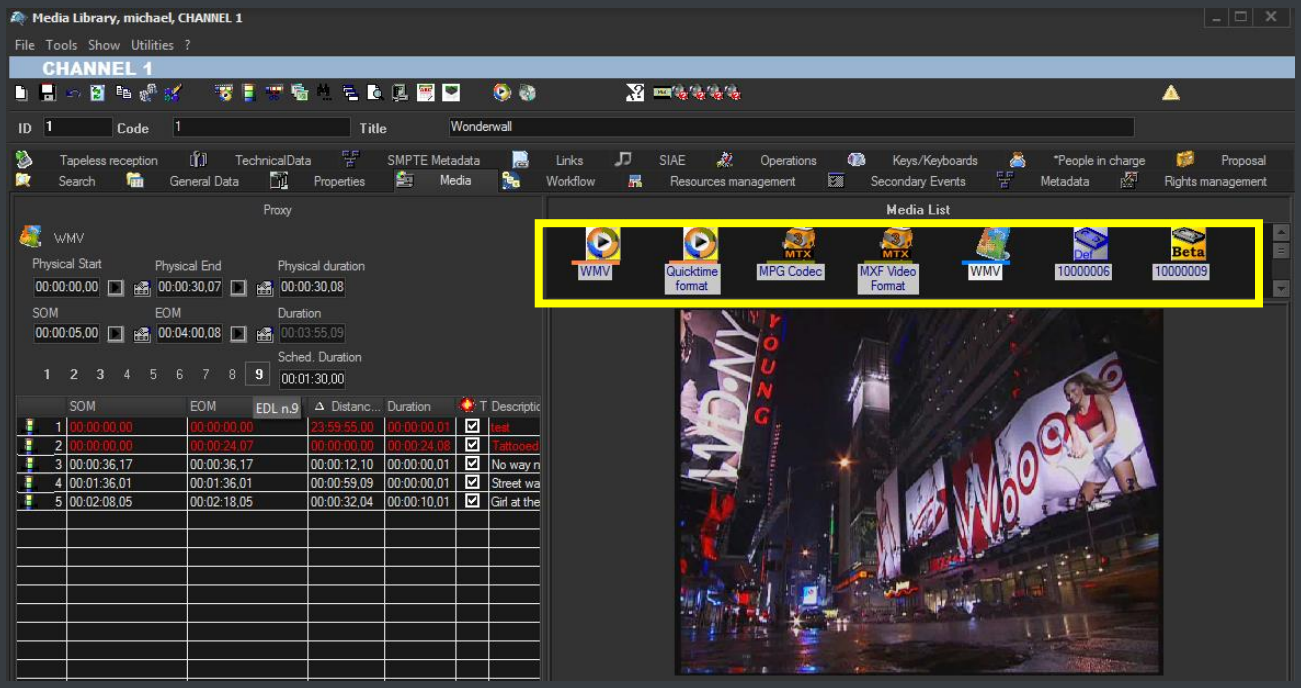
ETERE is a distributed, modular and fully integrated broadcasting system composed by a set of applications specifically oriented to efficiently perform each complex phase of the broadcasting chain synchronously within the same database environment, being all managed by suitable user-defined workflows that ensure an efficient overall system controlling.

Etere's distributed architecture allows achieving a top-level availability of resources and reliability of operations across the entire broadcast workflow thanks to its redundant capabilities to improve the fault resilience on any hardware or software failure. Etere provides free-of-charge periodical updates for all customers with a valid support service.

▼ 3.2. 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:



Moreover, media holders (i.e. asset forms) 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:

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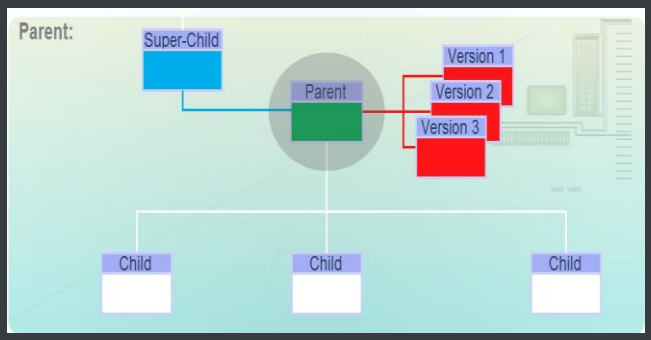
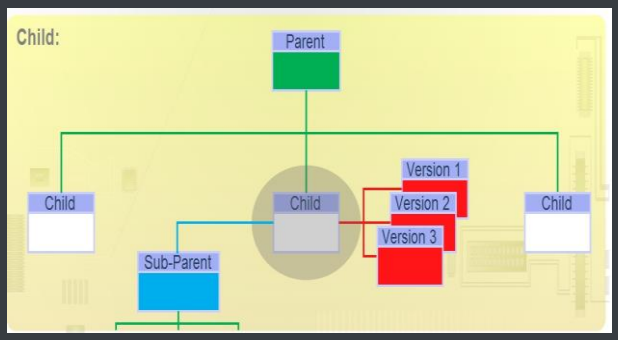
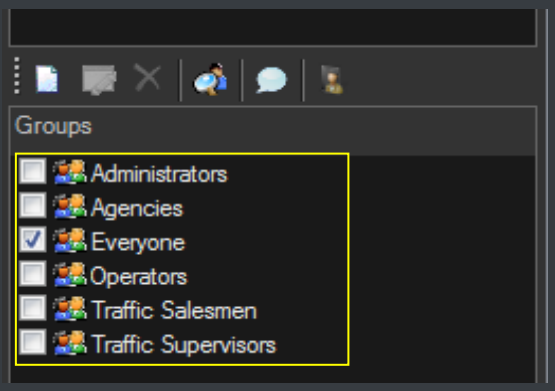




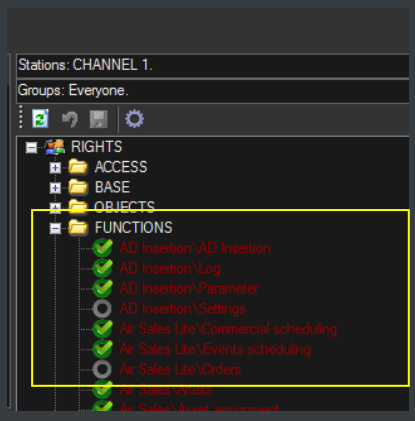
▼ 3.3. Access levels



Etere provides stations with a **"Rights Management Tool"** to control and track access to its various modules and functions, with it, stations will be able to freely assign (grant or deny) access to specific user groups (i.e. roles to which one or more users belongs to), thus allowing to set different mixtures of access levels for each group.
Etere allows managing different –and fully customizable- access levels for users which form part of the system, with Etere; set specific access rights not only for different users, but also for different stations.

▼ 3.4. Rights-based operations

All the functions provided by an Etere system (e.g. quality control, event scheduling, program playback, etc.) falls under different categories according to their nature (e.g. data mover, ingest, etc.), the availability of these functions is determined by the **"Rights Management Tool"**.
Thanks to this tool, stations will be allowed to reflect into the Etere system the actual way in which rights are managed within the station facility, for example, scheduling operators will be allowed to use only those modules to which they are authorized to use, including (or excluding) some sensitive functions intended to be managed by system administrators.



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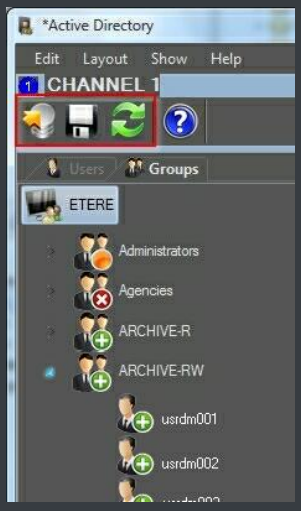
▼ 3.5. Active Directory Integration



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:

	The group/user will be added to the *Etere Rights* since it is present in the *MS Active Directory*.
	The group/user will be removed from the *Etere Rights* since it is missing in the *MS Active Directory*.
	The group has users that will be added/removed from the *Etere Rights* since they are present/ missing on the *MS Active Directory*

▼ 3.6. 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:

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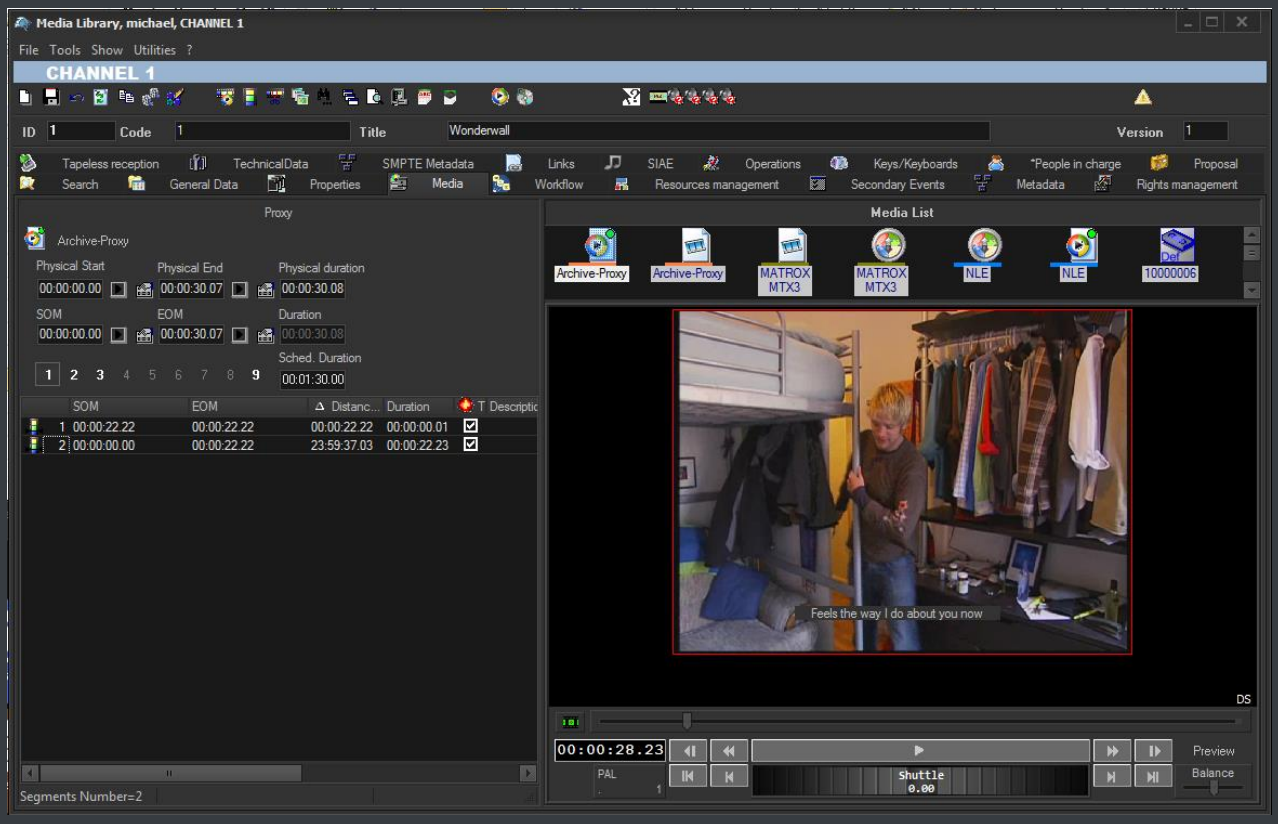
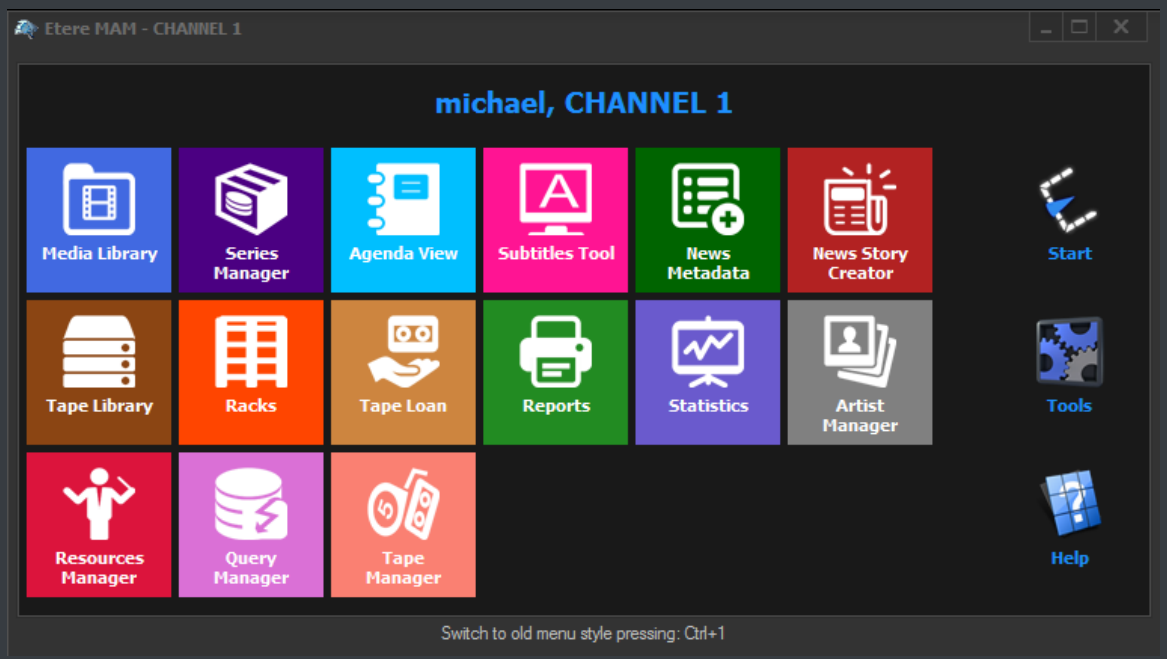


Moreover, main menus now follow the Windows 8 GUI to be simple, intuitive and easy to use:



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▼ 3.7. Reporting services

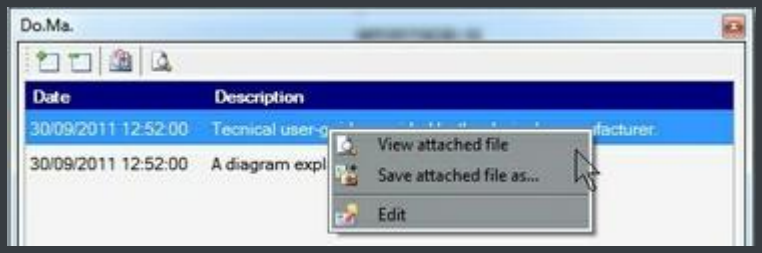
Etere Reporting Services provides an intuitive report environment to enable users to have an enterprise reporting environment enhanced with an unlimited number of custom reports; it permits reports to be easily designed and accurately managed though a reporting engine that allows to preview, print and 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.

Etere Reporting Services is based on the ultimate SQL Server Reporting Services technology that permits to leverage all key features of a web-based reporting server focused on simplifying the process of creating and editing reports:

▼ 3.8. Documents Management

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



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

▼ 4. MEDIA FUNCTIONALITIES

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.

▼ 4.1. Multiple 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:

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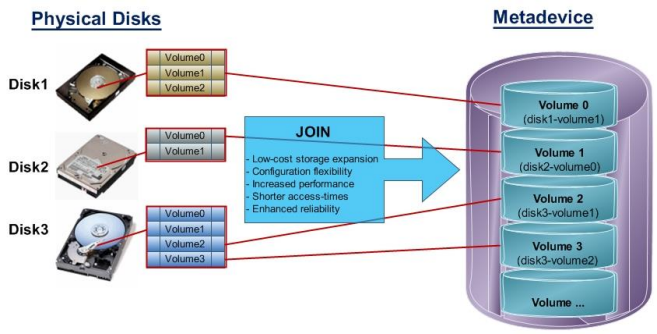
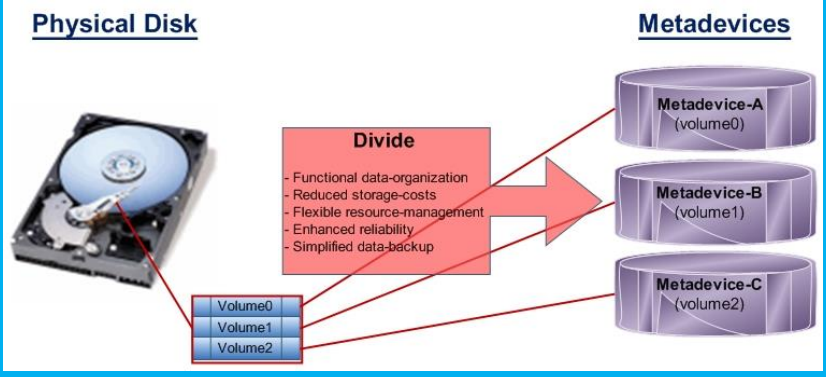
KEY STORAGE FEATURES

- Automated management via workflow of logical devices including arching, restoring, transcoding, etc.,
- Monitored storage space owing to the set of restrictions,
- Increased storage and better performance since metadevices acts as a virtual device representing several logical disks or disk systems:



- Distributed storage according to specific requirements without the need of creating partitions, just associate individual disk volumes to different:



▼ 4.2. Custom Workflows

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:

KEY CUSTOMIZATION FEATURES

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

A comprehensive and user-friendly workspace allows creating suitable workflows based on custom actions just by dragging and dropping the necessary elements into it:

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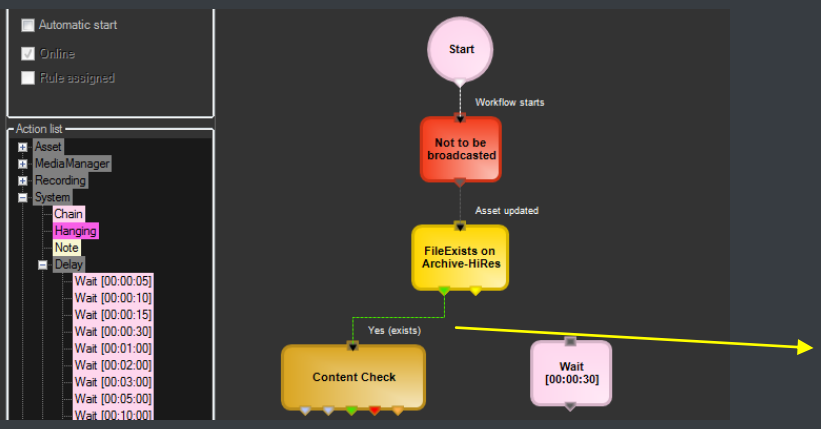
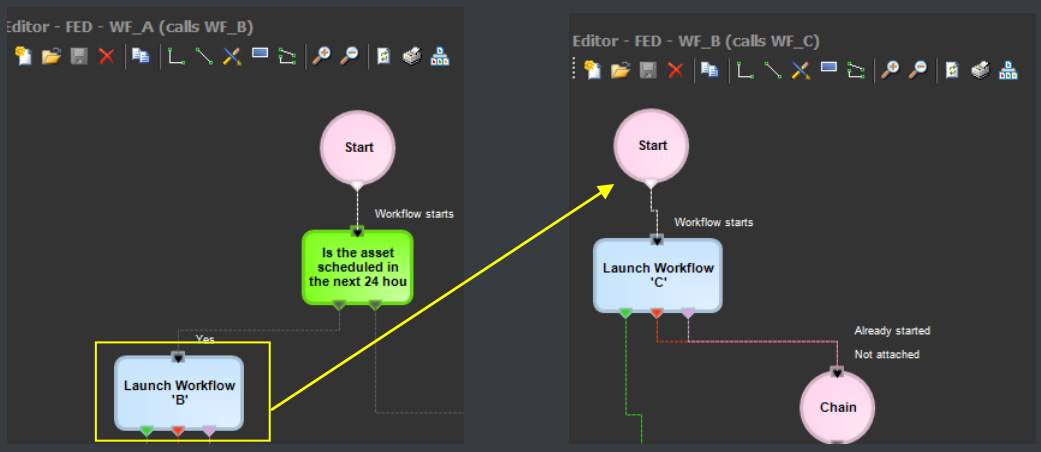


▼ 4.3. Integration between workflows

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:



The diagram below illustrates how Etere maintains the system consistency by avoiding loops between workflows (a message is displayed indicating action incompatibilities between workflows):

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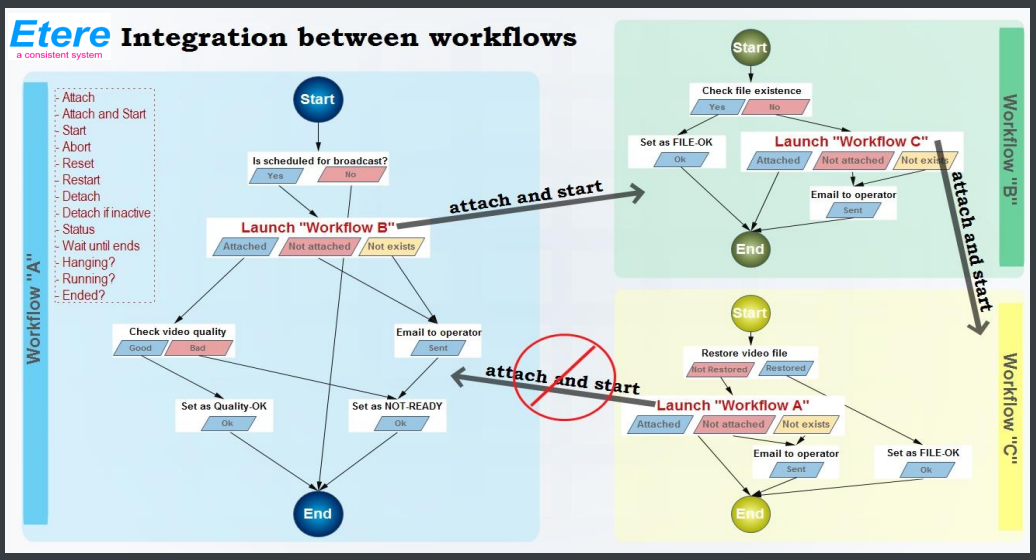
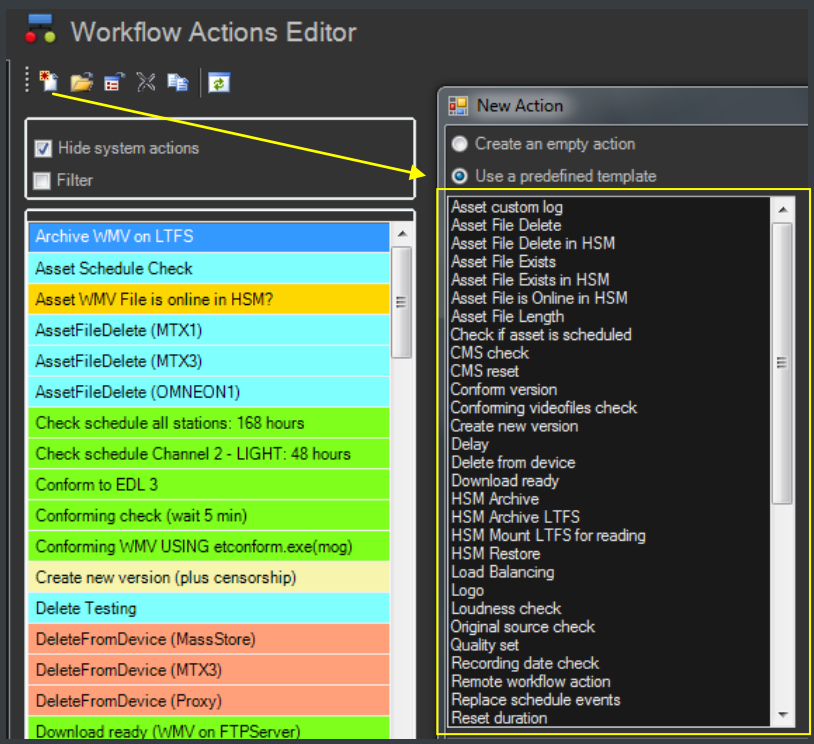


As shown above, for example, if 'workflow A' calls 'workflow B' and the 'workflow B' calls 'workflow C', the 'workflow C' will not be able to call the 'Workflow A'.

▼ 4.4. File-based processing

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



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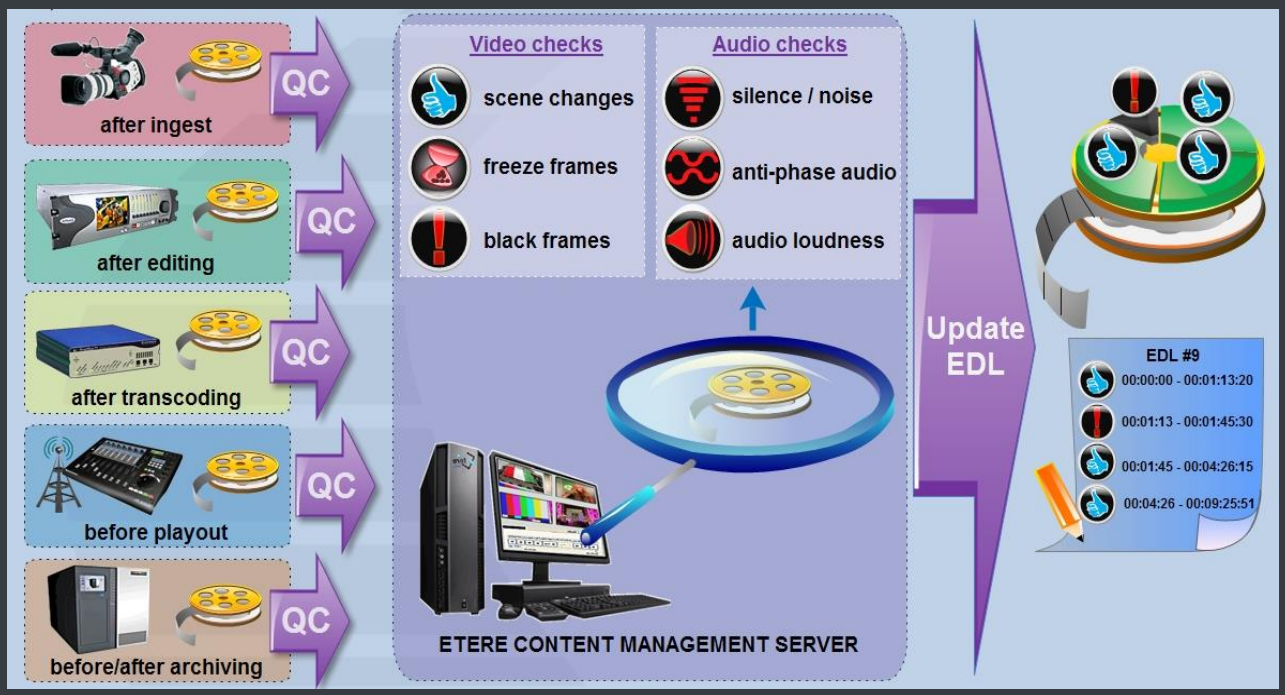
▼ 4.4.1. Content Check

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.

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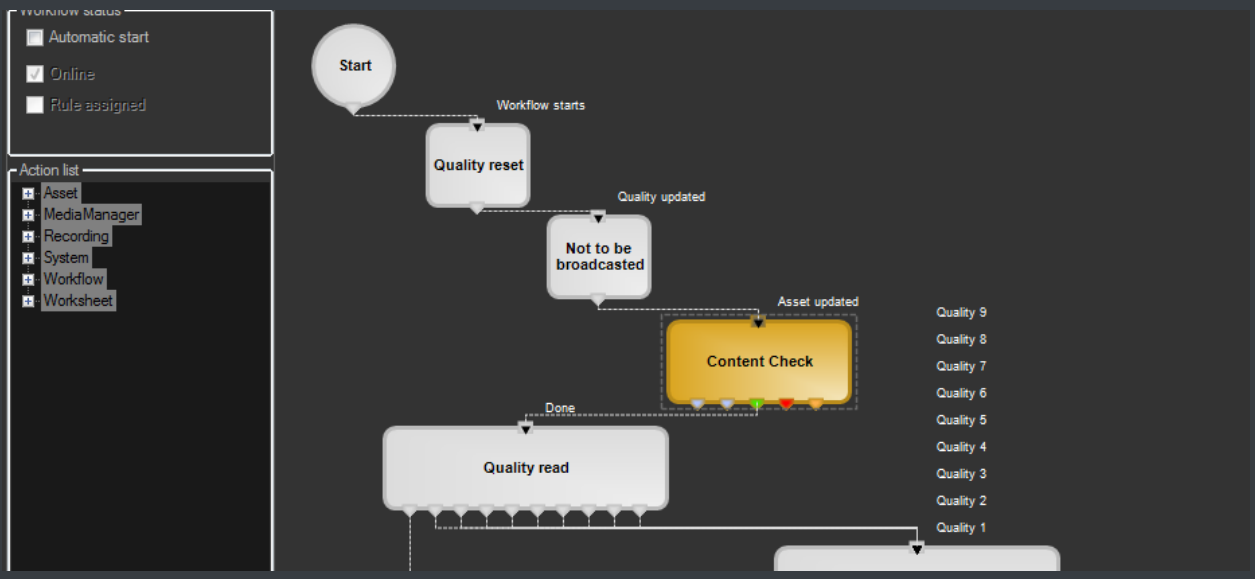

CMS is based on a workflow action which, once included into a workflow that will automatically analyze the asset's proxy video to detect and log (into its EDL) the following audio/video issues:

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 loudness metering algorithm widely used as loudness-compliant standard.

▼ 4.4.2. 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:

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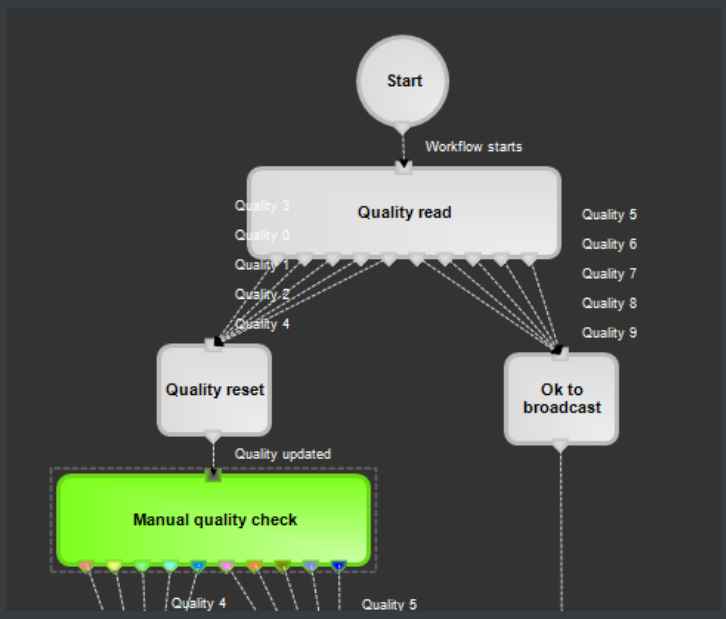
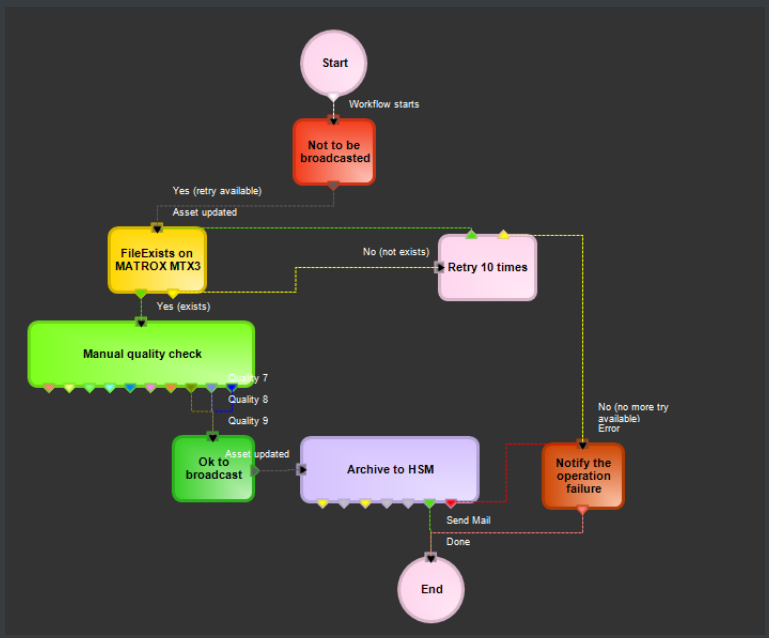


▼ 4.4.3. Archiving

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



▼ 4.4.4. Restore

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

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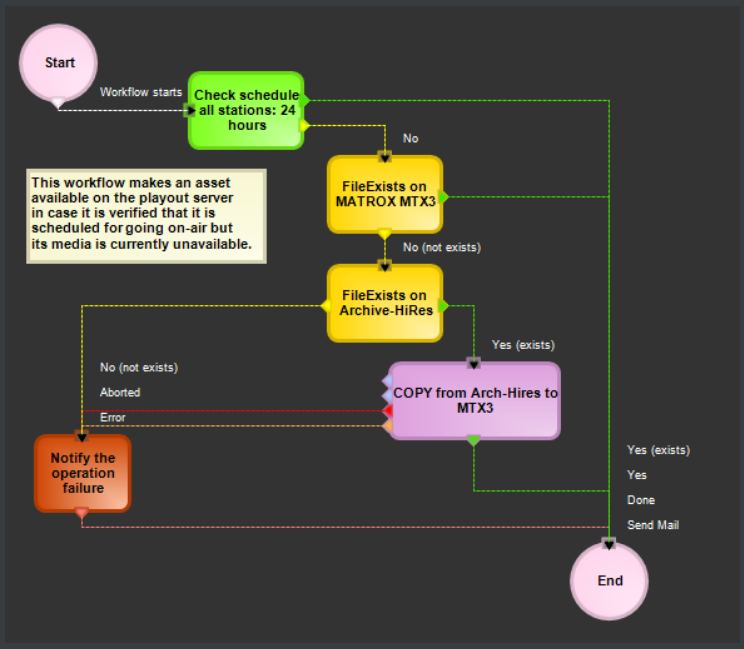
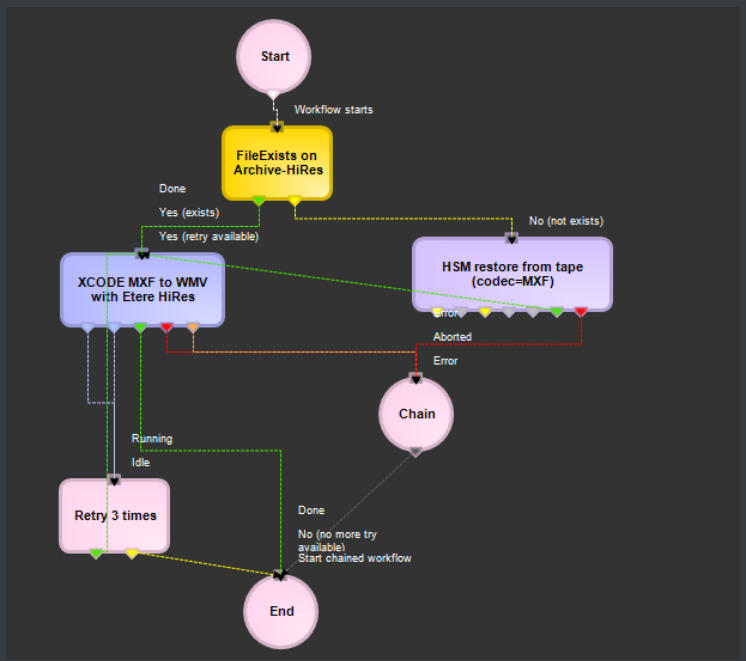


▼ 4.4.5. Transcoding

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:



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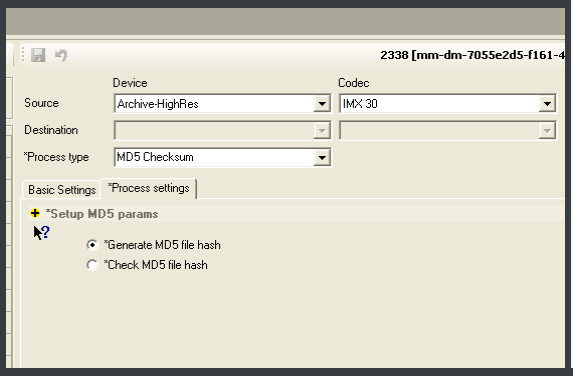
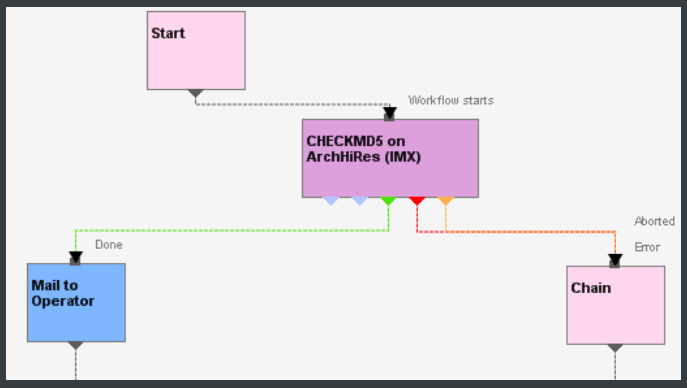
▼ 4.4.6. Checksum MD5 Verification

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

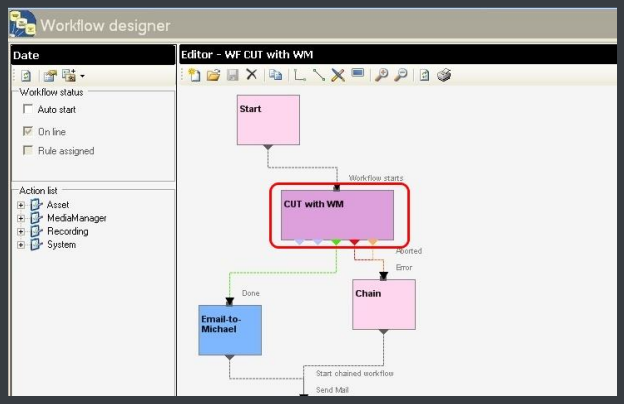


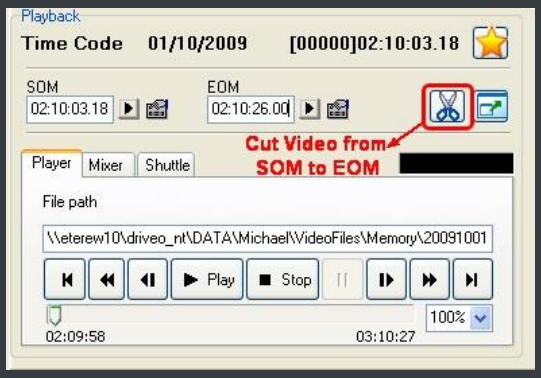


The workflow editor allows creating custom Checksum workflows to either generate or check the MD5 hash of a video file.

▼ 4.4.7. Video Cut

Etere offers 'Cut actions' that permits to take only a portion of a certain video file, using a given time code SOM and EOM. Defining and using a Memory Cut operation is as easy as shown below:





▼ 4.4.8. Audio Normalization

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

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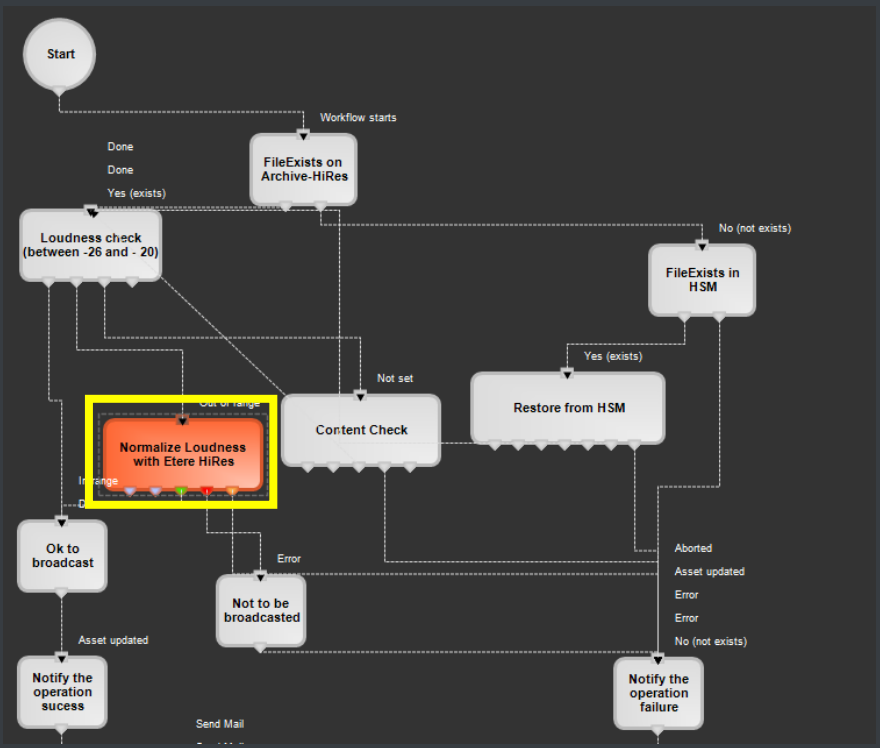

As shown in the sample above, “loudness normalization” workflows can be launched automatically for specific assets, for example, after their ingestion or tapeless reception (i.e. web upload).

▼ 4.4.9. Antivirus scan

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

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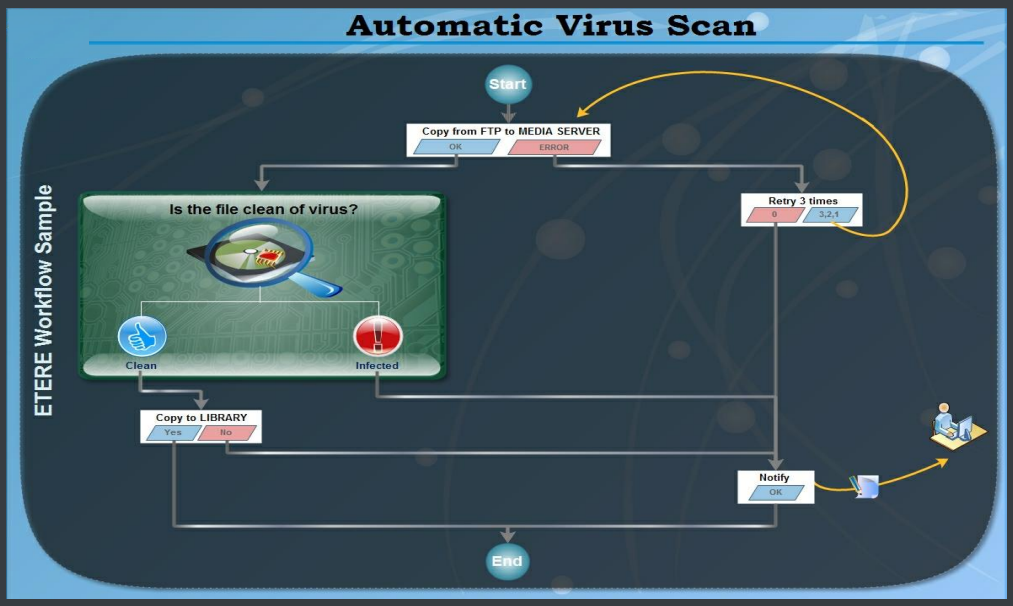
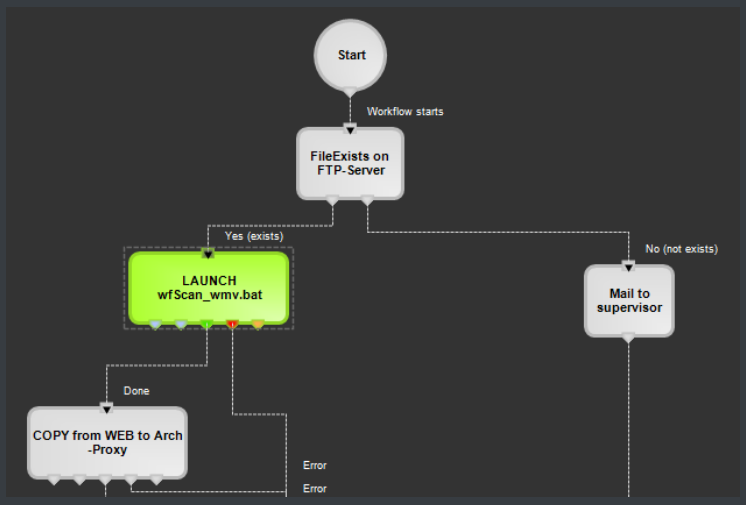


As shown in the figure above, the automatic virus scan capability can be easily integrated within any workflow at any stage just by inserting an action block configured to perform the virus checking; stations can insert them, for example, within the default workflow to be launched after an EtereWeb upload.



▼ 4.5. Metadata Organization

SMPTE (Society of Motion Picture and Television Engineers) 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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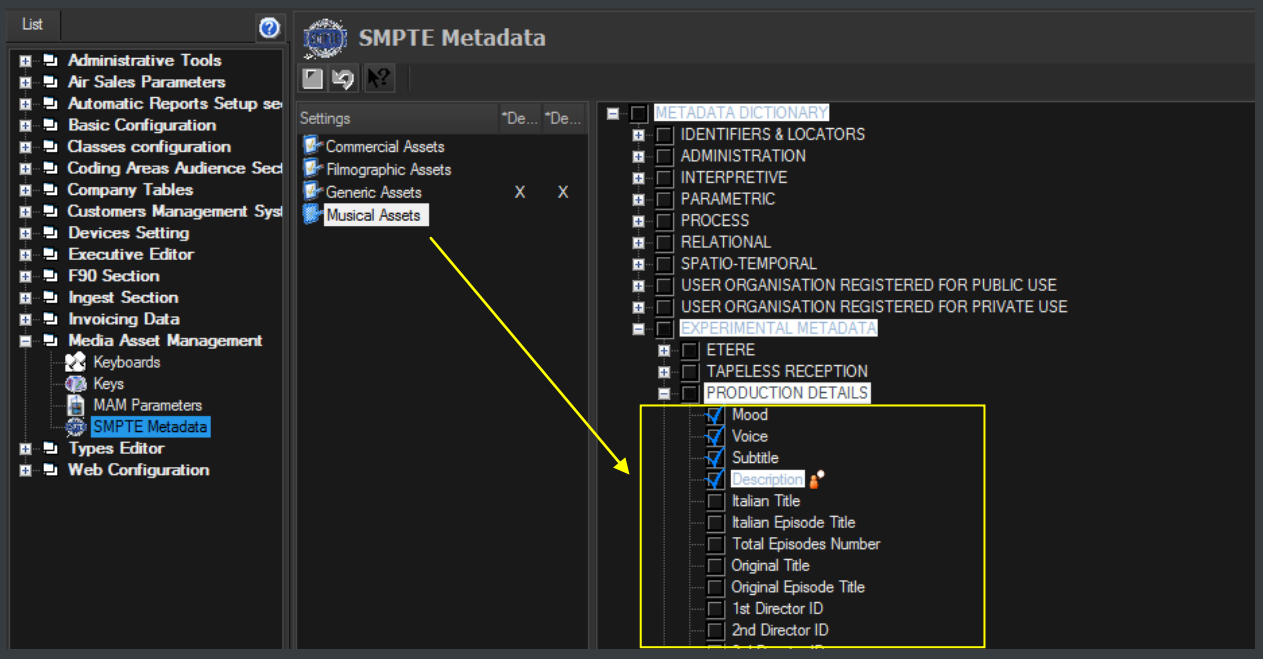
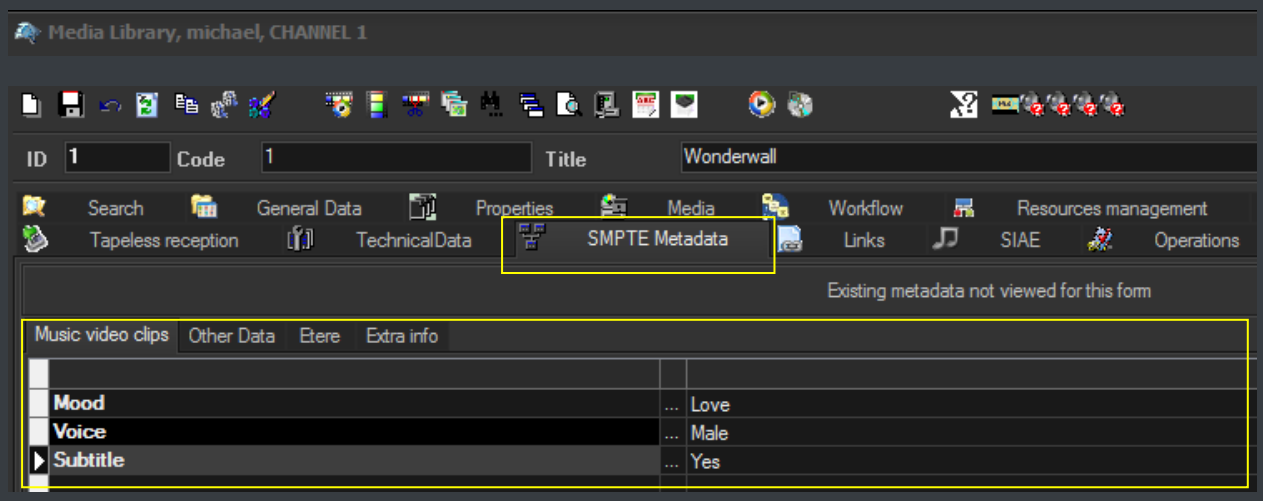


In Etere, all assets contain user-defined SMPTE metadata fields, these fields can be either manually compiled or automatically compiled (retrieved from specific asset properties):



SMPTE metadata can be used also for cataloguing media content, allowing operators to quickly add specific information to a video segment.

▼ 5. ETERE COMPONENTS

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.

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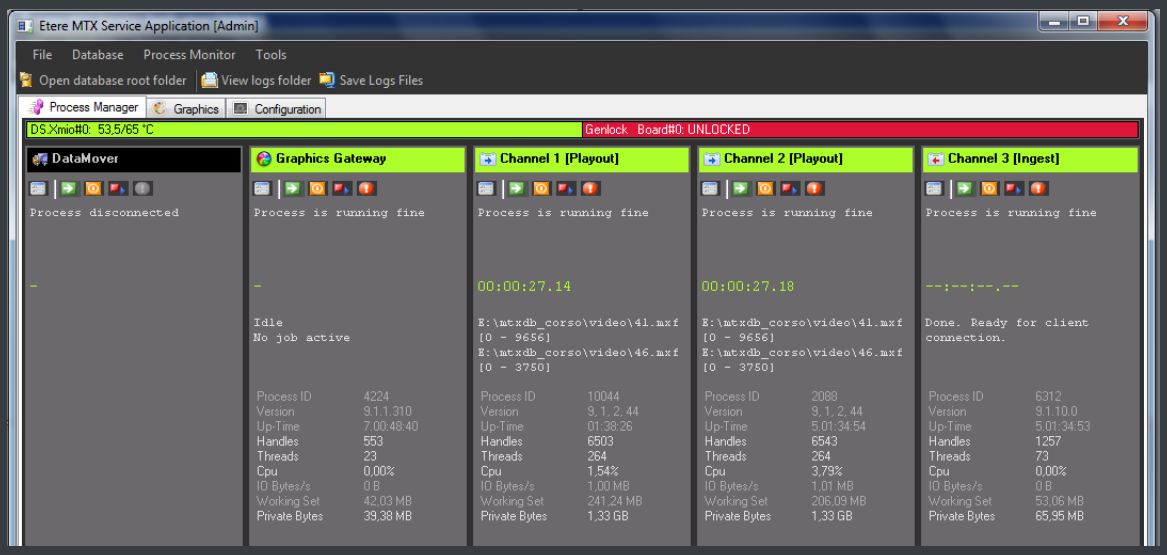
All these operations are synchronously performed within the same database environment and managed by suitable user-defined workflows that ensure an efficient overall system control; these are some of the main features that make of ETERE a solution that can easily fit any media management workflow. All 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.

▼ 5.1. MTX: Digital capture 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 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.

▼ 5.1.1. 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

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- Dolby E Pass-through
- Video transitions

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

Supported Ingest Formats		
Codec	**Resolution**	**Wrapper**
Apple ProRes 422	SD/HD	MOV
Apple ProRes 422 HQ	SD/HD	MOV
Apple ProRes 422 LT	SD/HD	MOV
Apple ProRes 422 Proxy	SD/HD	MOV
DVCAM	SD	MXF, MOV, AVI
DV 25	SD	MXF, MOV, AVI
DVCpro	SD	MXF, MOV, AVI
DVCpro50	HD	MXF, MOV, AVI
DVCPRO HD	HD	MXF, MOV, AVI
HDV 720p	HD	AVI
HDV 1080i	HD	AVI
HDV 1080p	HD	AVI
IMX 30,40, 50	SD	AVI
MPEG2 I-Frame	SD/HD	AVI
MPEG2 LGOP	SD/HD	MXF, MOV, AVI
XDCAM HD	HD	MXF
XDCAM HD422	HD	MXF, MOV
WMV	SD/HD	---

▼ 5.1.2. 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.

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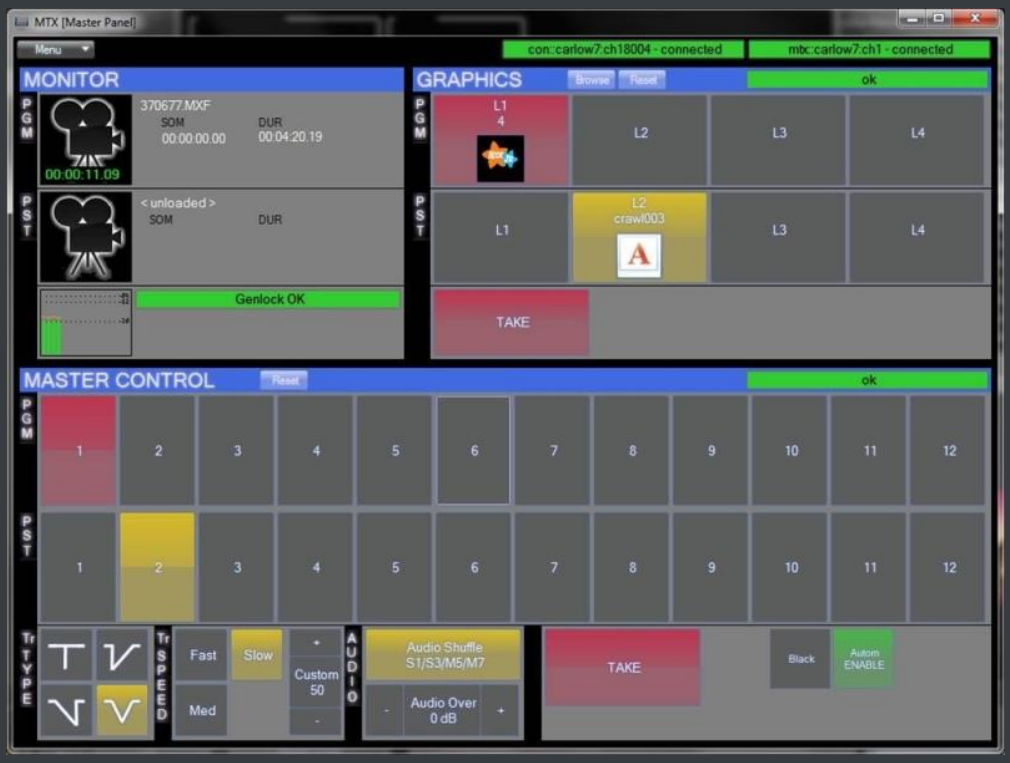

The **MTX Master Panel** requires only a card with 1 input and 2 outputs to deliver full Master Control functionalities, with a really cost effective system, and the possibility of working in SD and HD without any additional cost. The **MTX Master Panel** will provide all the standard functions of a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

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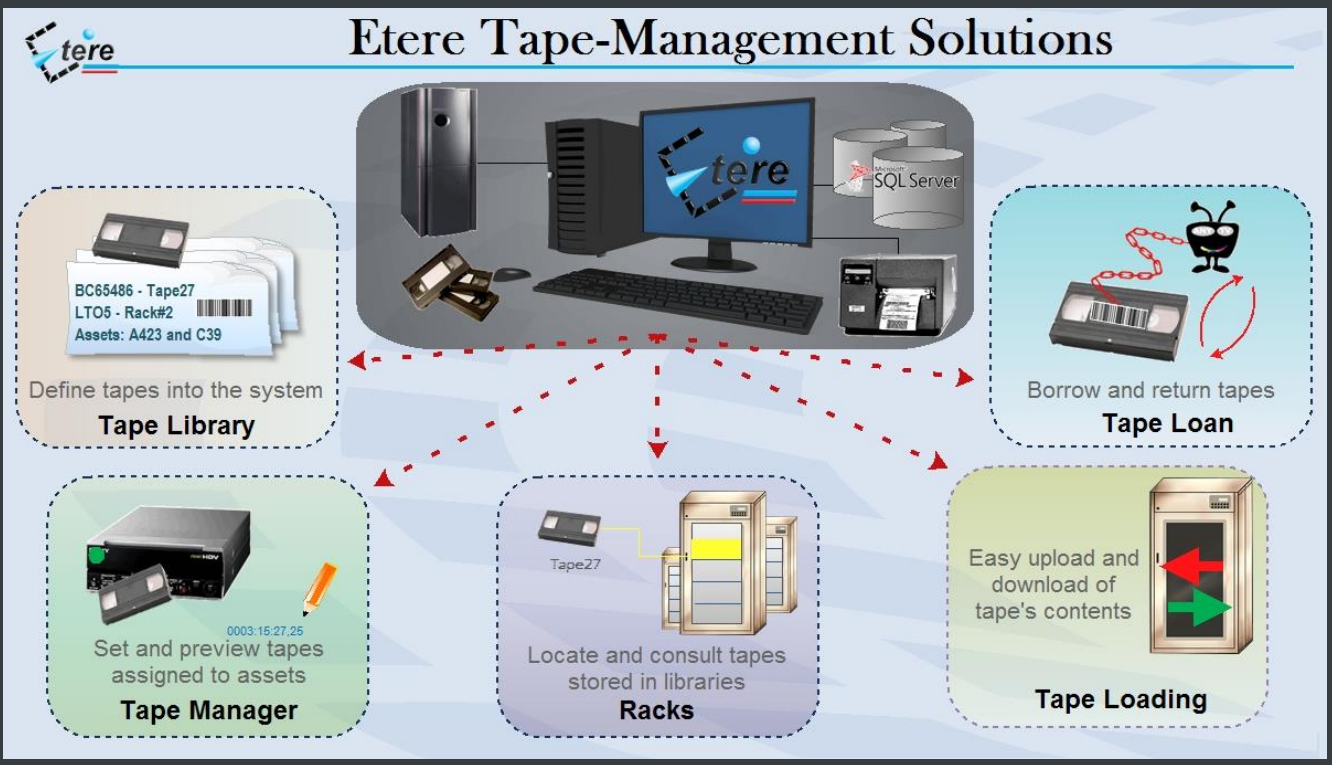
▼ 5.2. Tape Manager: An enterprise management of tapes

Etere allows stations to manage their tape archives (video tapes, data tapes, discs) through a set of modules specifically designed to perform the most important tape-related operations; these modules are illustrated in the figure below and described all throughout the current chapter:



It's worth mentioning that the tapes management provided by Etere can be greatly complemented with the remote tapeless capabilities described in the chapter dedicated to the EtereWeb module.

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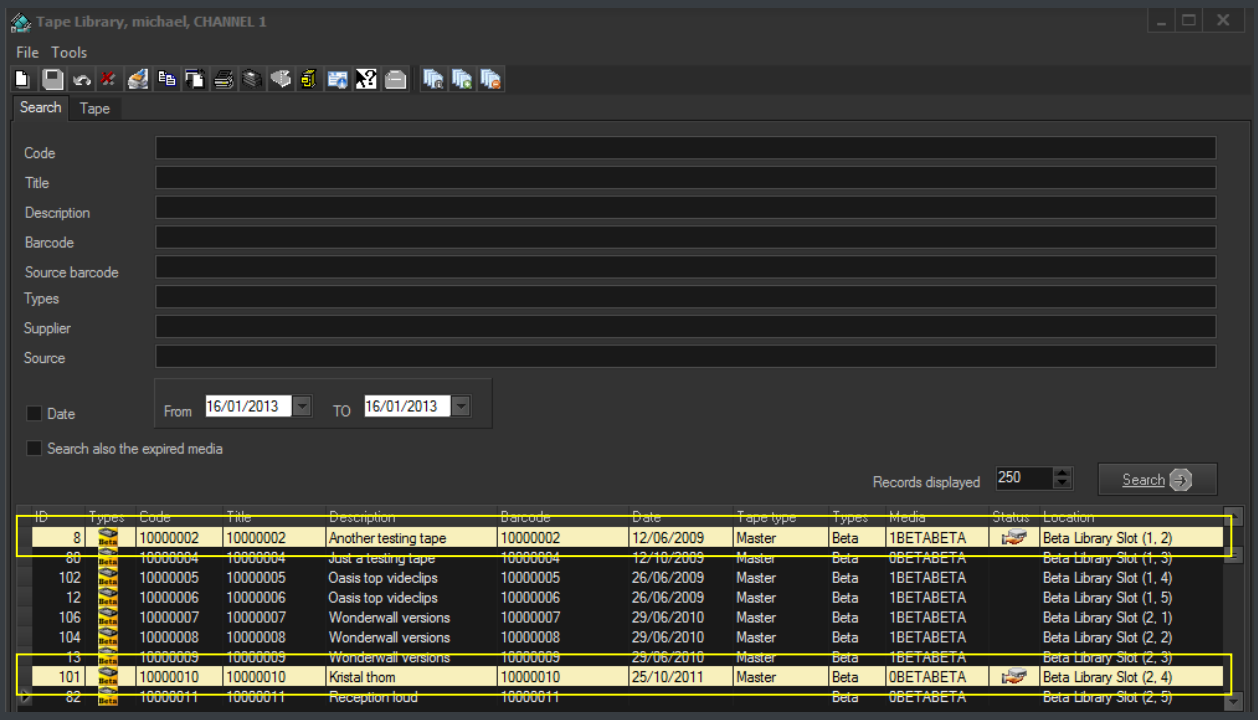
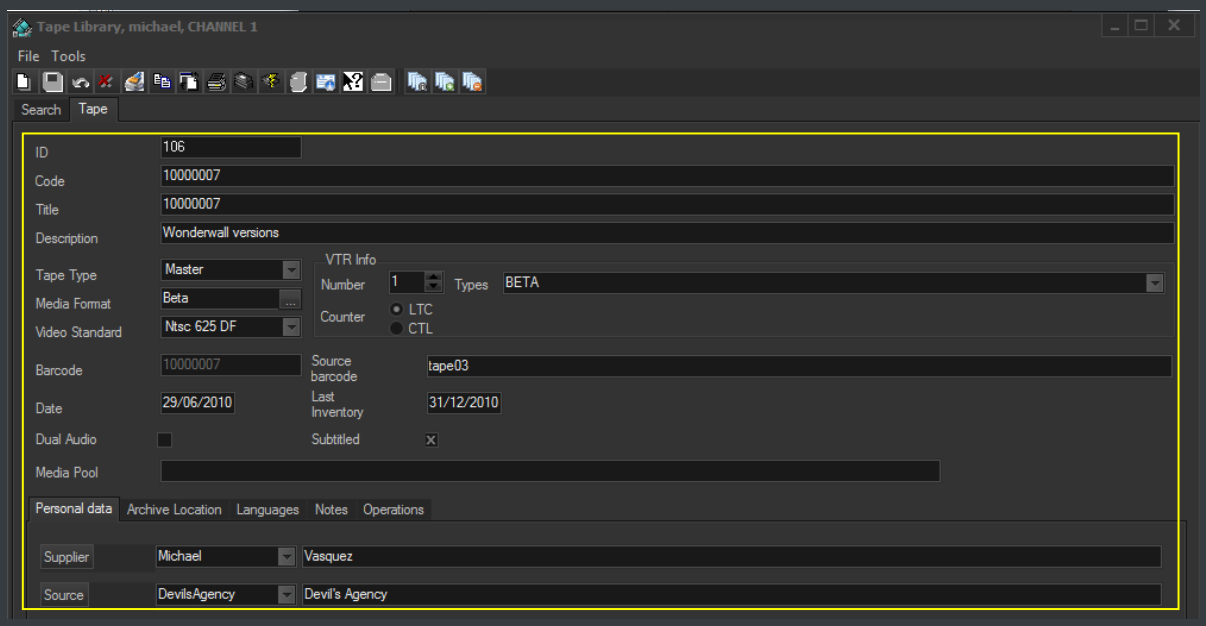
▼ 5.2.1. Tape Library

The **Tape Library** module is the inventory where all tapes managed within the system are inserted and defined, being possible to search them through a robust search engine (loaned tapes are highlighted to point out their unavailability):



Retrieved tapes can be consulted by viewing their main information (i.e. ID, code, description, type, format, barcode, media pool, rack location):



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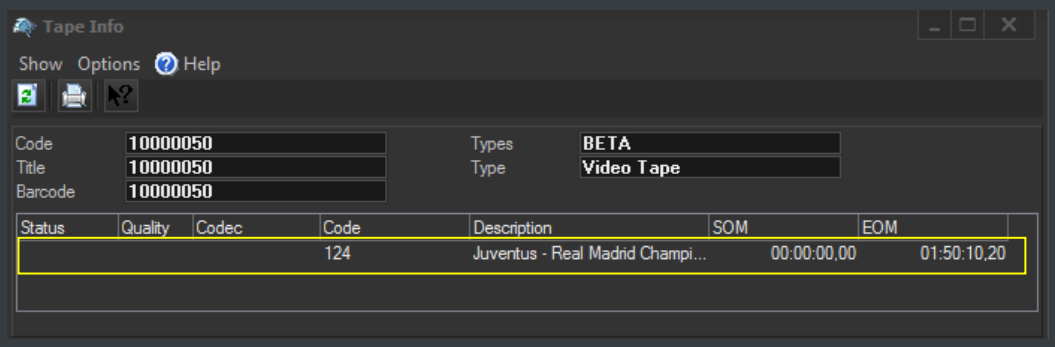
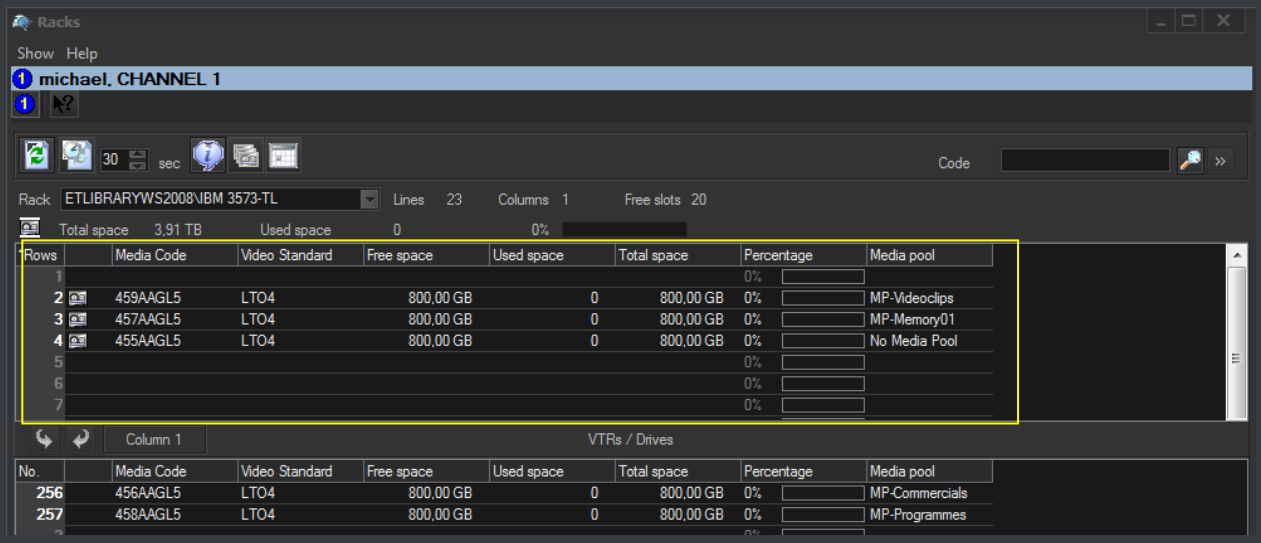
Moreover, it will be also possible to perform various operations such as tape creations, tape loans, tape copies and status consultations (e.g. empty tapes, loaned tapes, etc.):

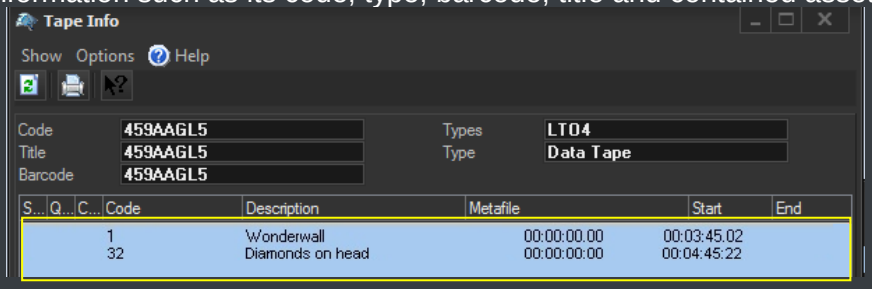


▼ 5.2.2. Racks

The **Racks** module provides a simple user-interface for locating tapes inside specific racks and libraries and consult some of their more important storage properties (e.g. free space, used space, etc.). As shown in the figure below, the user interface is mainly composed by the Content List (i.e. where contents of each single library/cart can be consulted) and a Toolbar (holding the functions supported for their management).



All tapes contained into a library can be consulted through a very useful “Tape Info” form which details some important information such as its code, type, barcode, title and contained assets:



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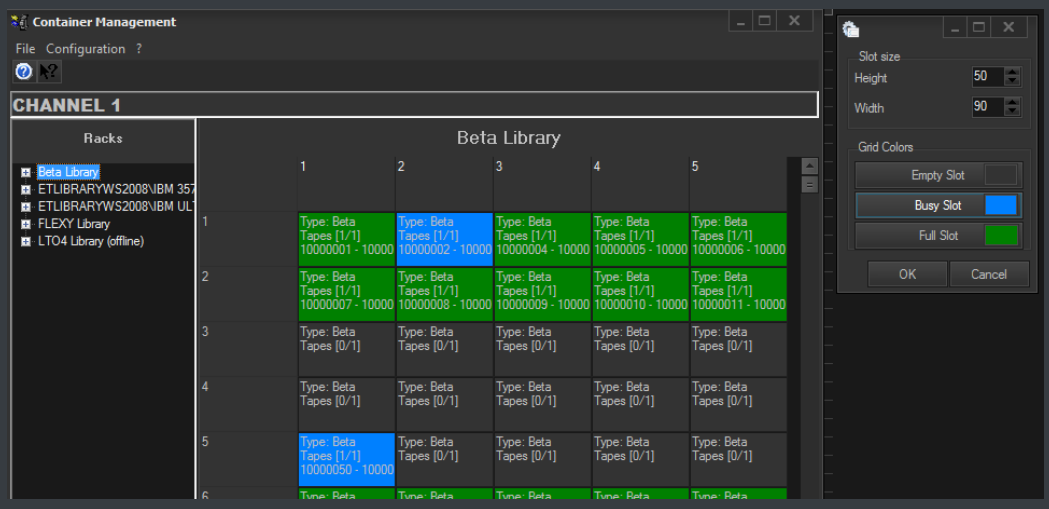
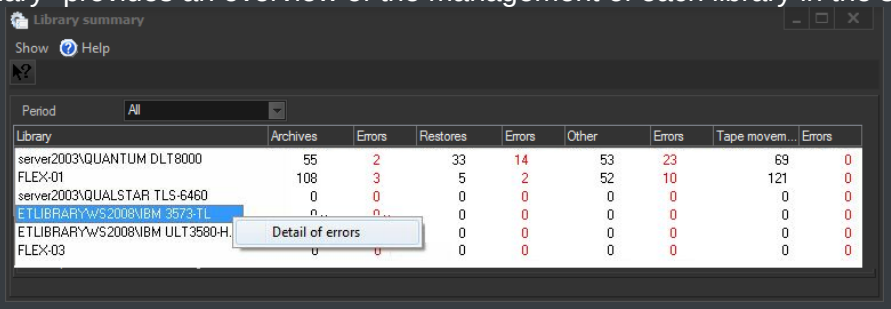
A "Container Management" form displays an array-view of the slots contained within Racks and provides visual information on their space status (e.g. green=empty, yellow=used, red=full):

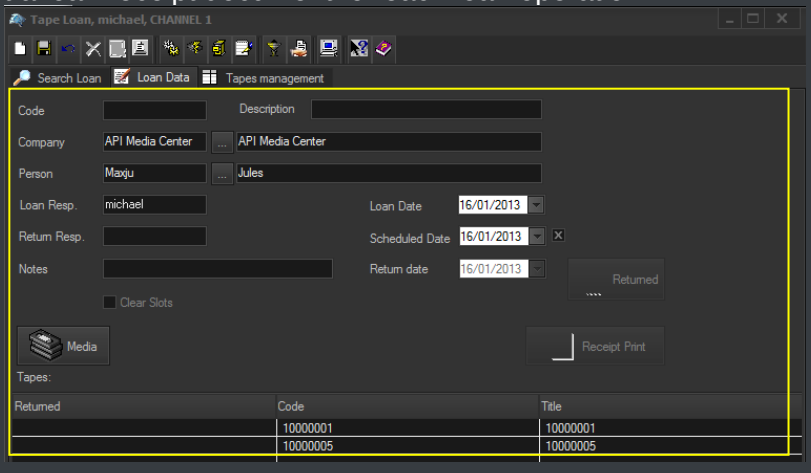


A "Library Summary" provides an overview of the management of each library in the system:



▼ 5.2.3. Tape Loan

Tape Loan is the module that allows managing all information related to the borrowing and return of tapes. Loans are recorded in the database detailing the loaner (company and person), the loan and return responsible, the actual loan data, the expected return data, the loaned media (tapes), being also possible to print a loan receipt document for each loan operation:



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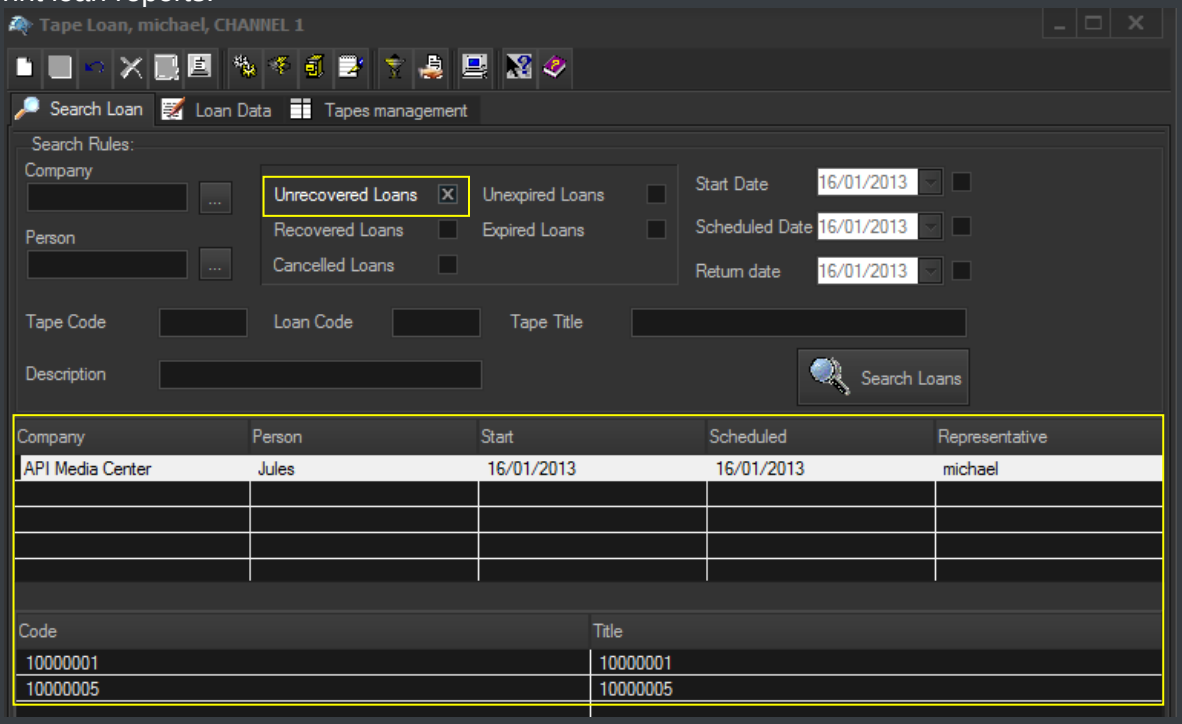
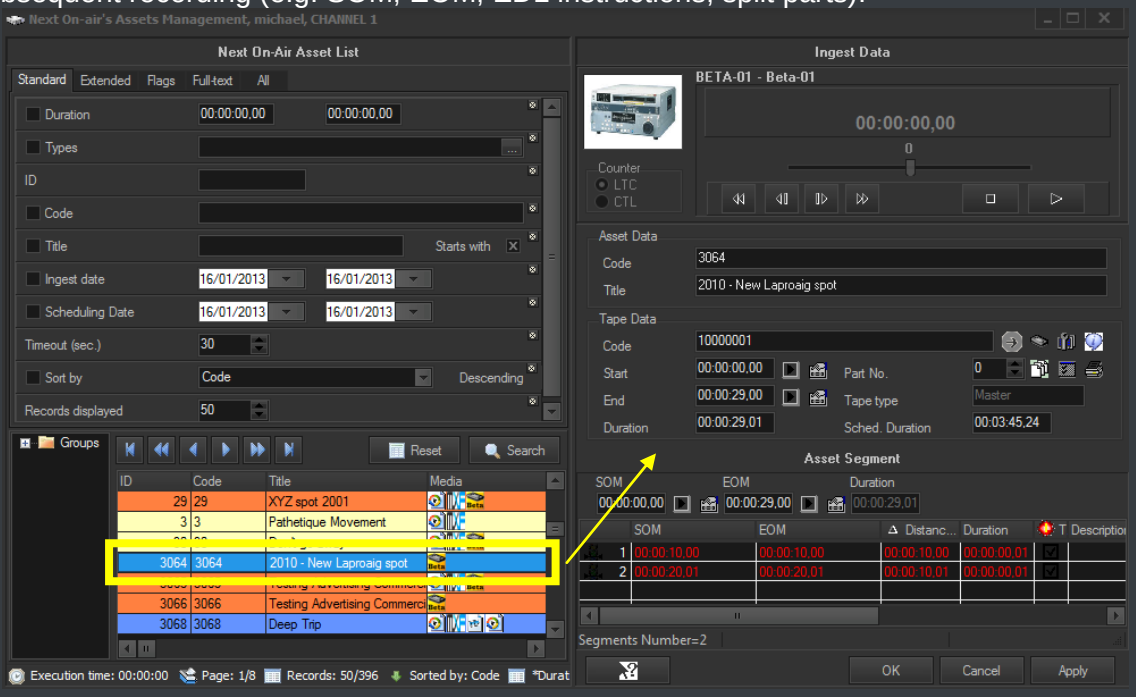
Stations will be allowed to search due-for-return tapes and consult pending loans, settle loan returns and print loan reports:



▼ 5.2.4. Tape Manager

Tape Manager allows assigning new or existing tapes to assets, detailing the information required for their subsequent recording (e.g. SOM, EOM, EDL instructions, split parts):



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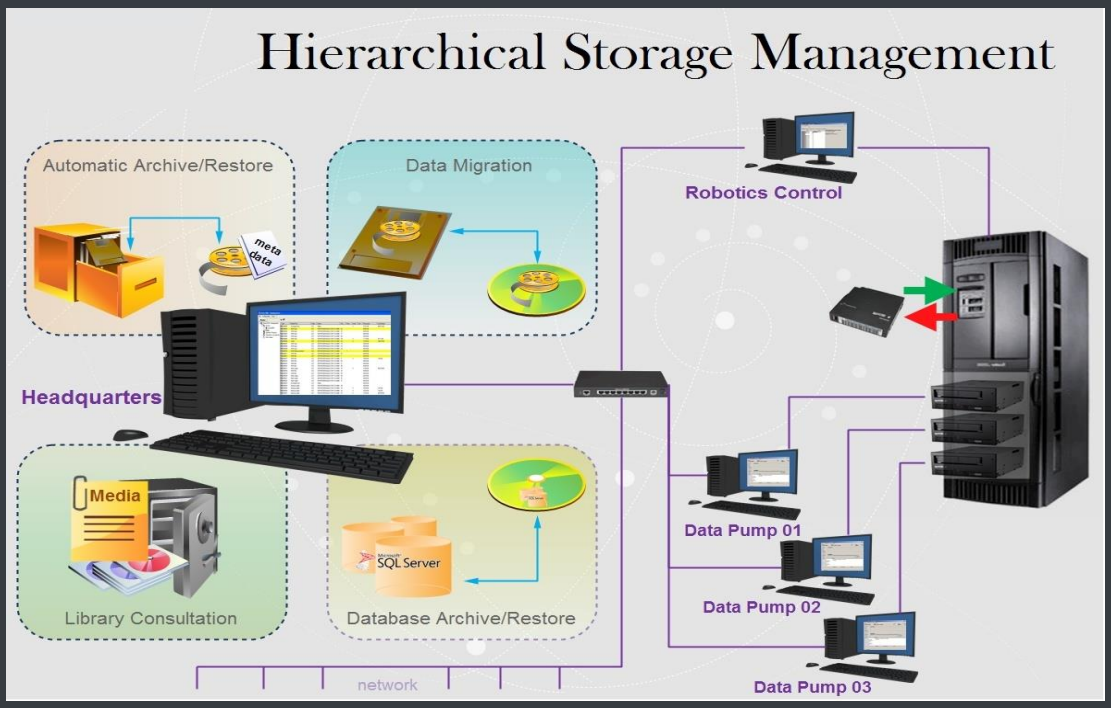
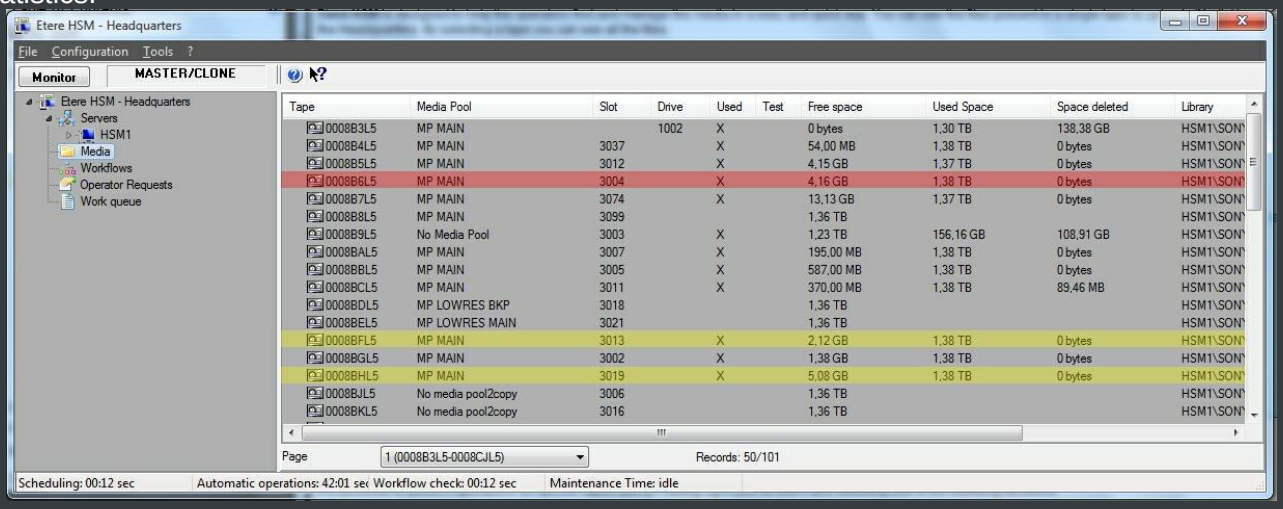
▼ 5.3. HSM: A tape-based archiving

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.



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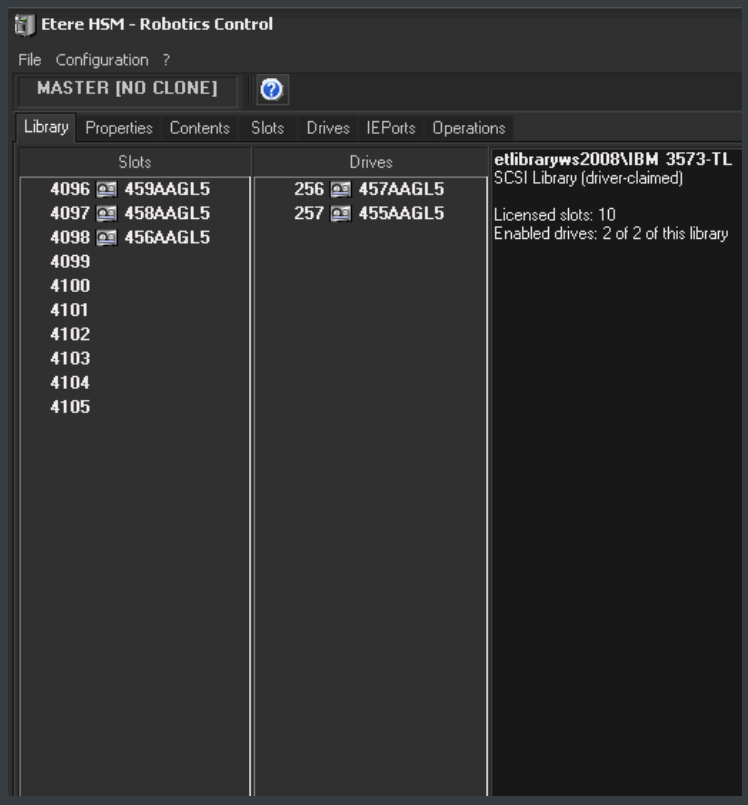
Etere HSM distinguish four different archiving levels into a broadcasting workflow, these levels required distinct access times which vary from 0 minutes (video server) to 15 minutes (standard video tapes). All these levels are managed “virtually”, that is, you can use logical devices (metadevices) based 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:



- Carry out loan-balanced movements on an intelligent multi-volume scenario,
- Extend your storage space by joining 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.

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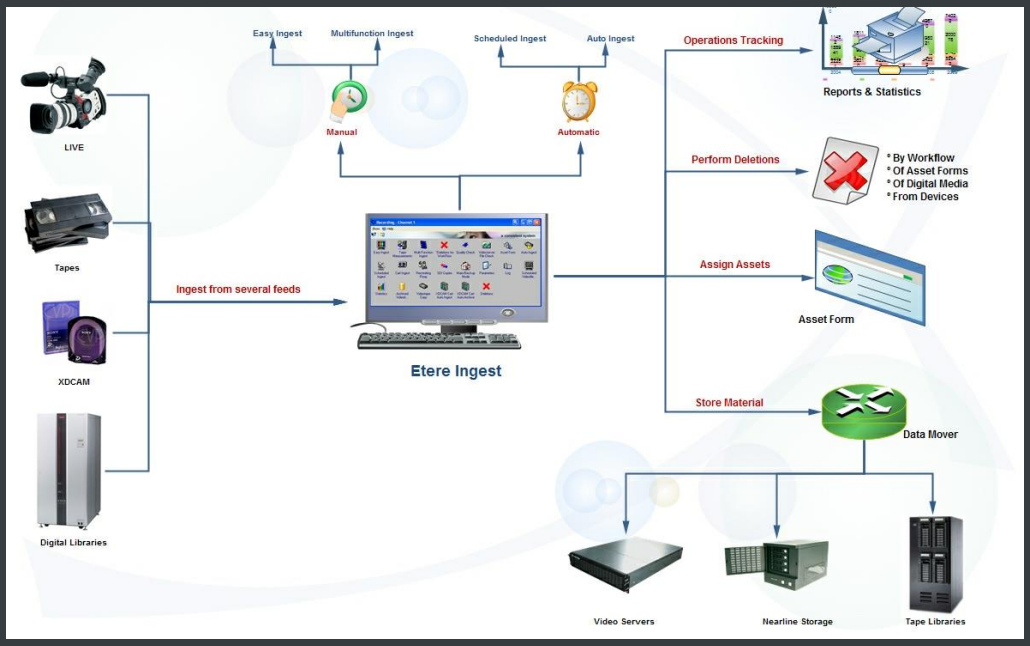
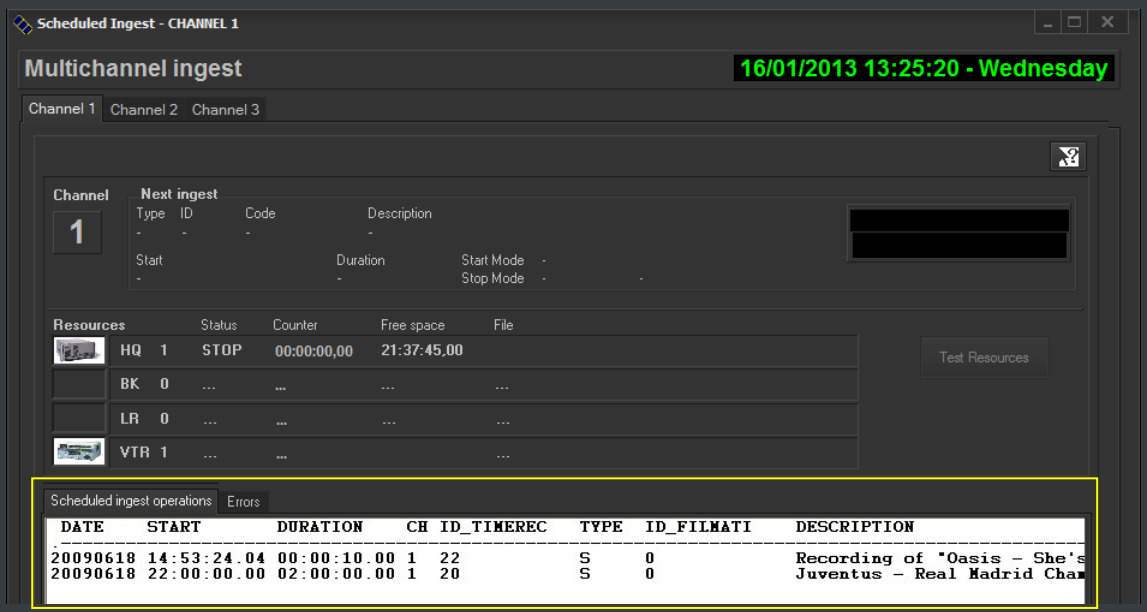
▼ 5.4. Ingest: A versatile acquisition system

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



▼ 5.4.1. Wide range of acquisition modes

Ingest covers any particular requirement of the entire process such as automatic and scheduled ingests:



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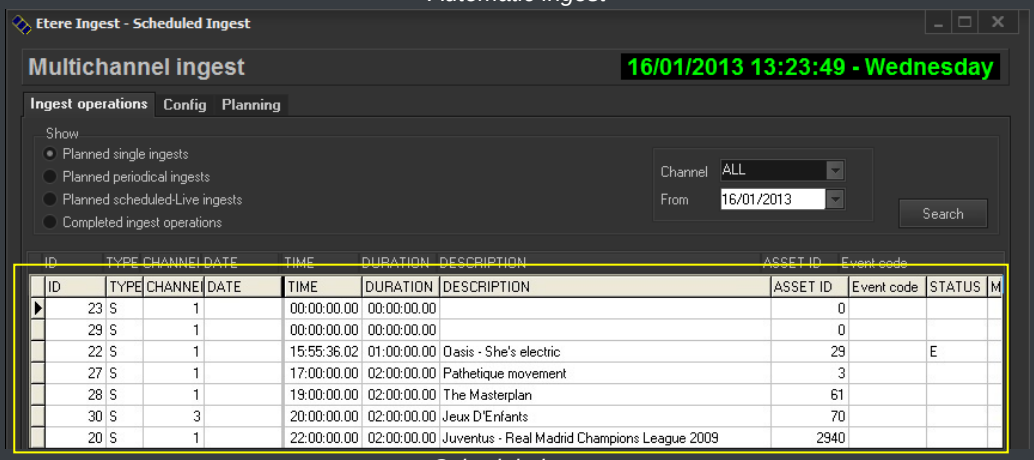
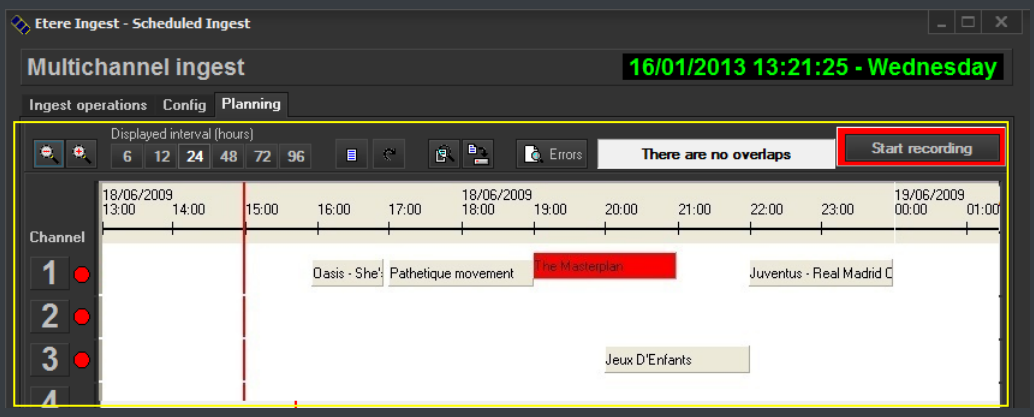
Automatic ingest



ID	TYPE	CHANNEL	DATE	TIME	DURATION	DESCRIPTION	ASSET ID	Event code	STATUS	M
23	S	1		00:00:00.00	00:00:00.00		0			
29	S	1		00:00:00.00	00:00:00.00		0			
22	S	1		15:55:36.02	01:00:00.00	Oasis - She's electric	29		E	
27	S	1		17:00:00.00	02:00:00.00	Pathetique movement	3			
28	S	1		19:00:00.00	02:00:00.00	The Masterplan	61			
30	S	3		20:00:00.00	02:00:00.00	Jeux D'Enfants	70			
20	S	1		22:00:00.00	02:00:00.00	Juventus - Real Madrid Champions League 2009	2940			

Schedule ingest

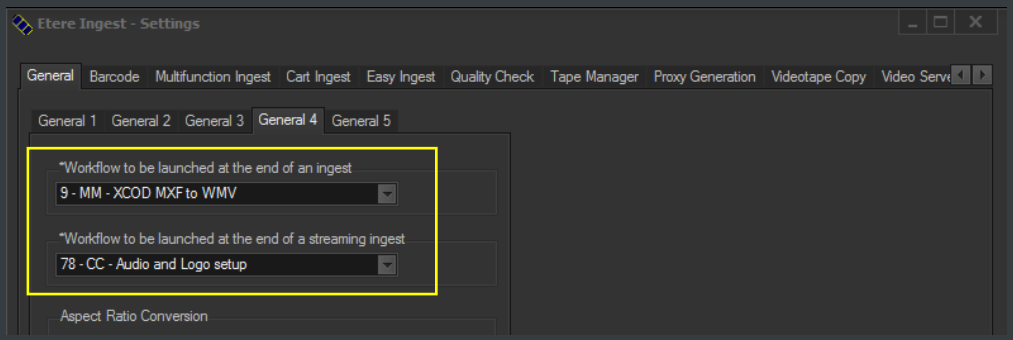
Etere Ingest supports multiple parallel ingest streams, managed automatically either on a single workstation or across various workstations, allowing also to schedule the video files to be ingested:



Planning View

▼ 5.4.2. 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.):



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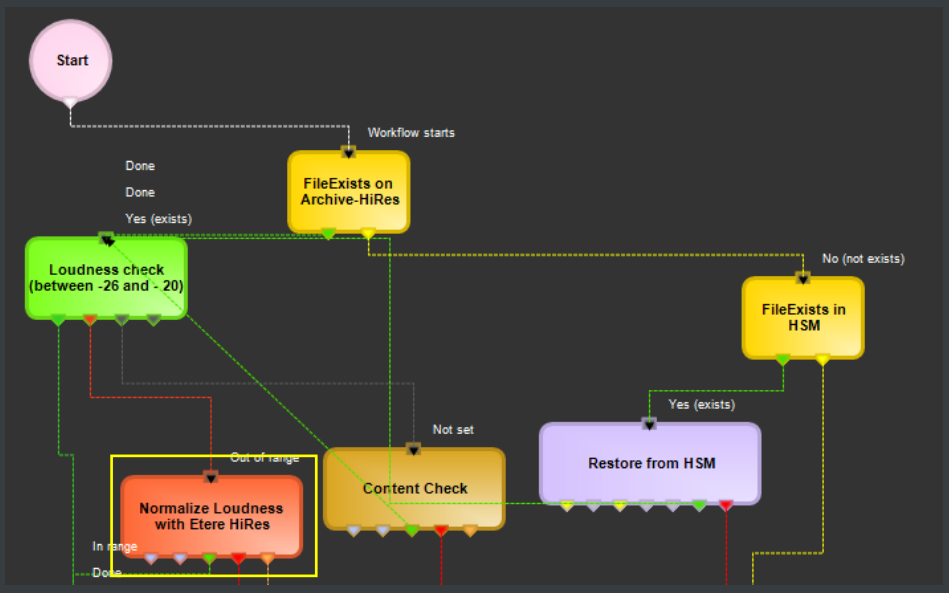
The image below illustrates how Etere allows setting the workflow to be launched at the start and end of an ingest process to for example, create a low resolution version or normalize the audio of captured contents:



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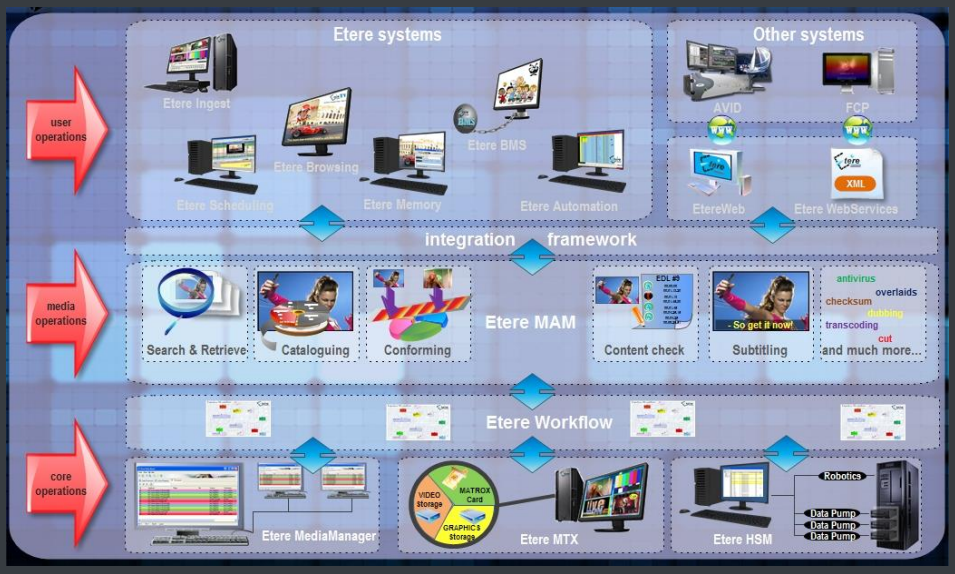
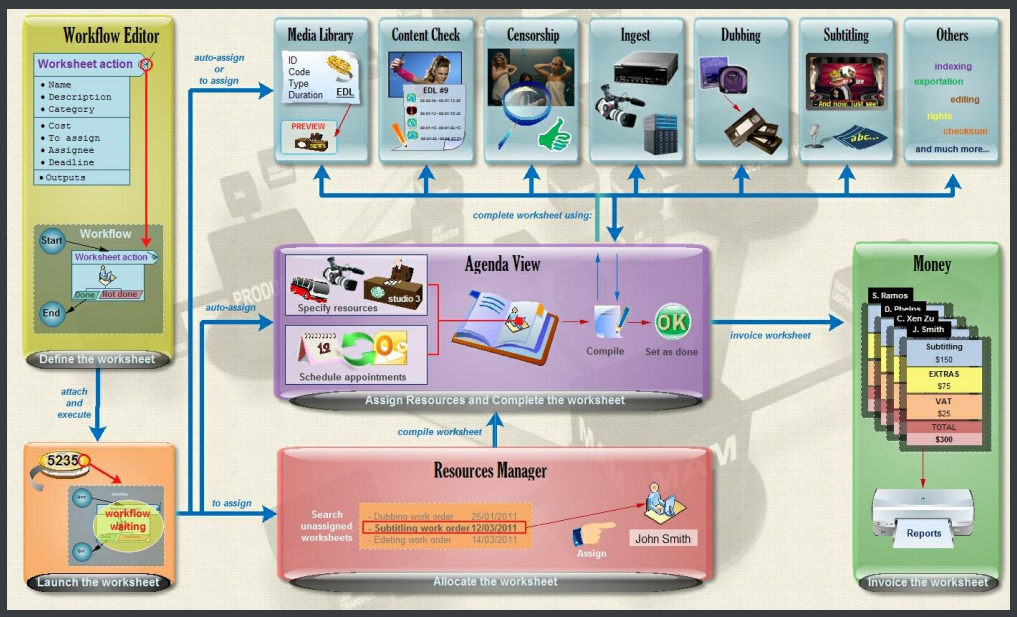
▼ 5.5. MAM: Browsing, editing and more

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



▼ 5.5.1. 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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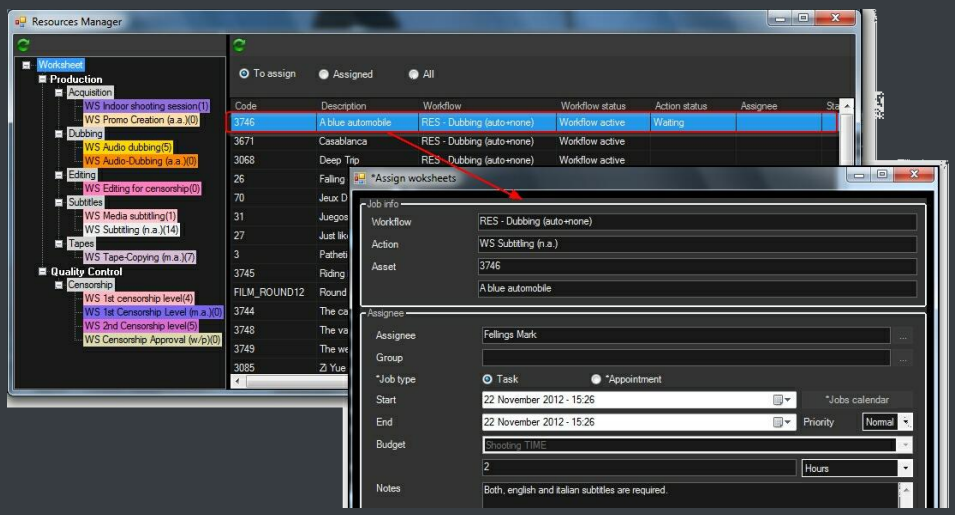
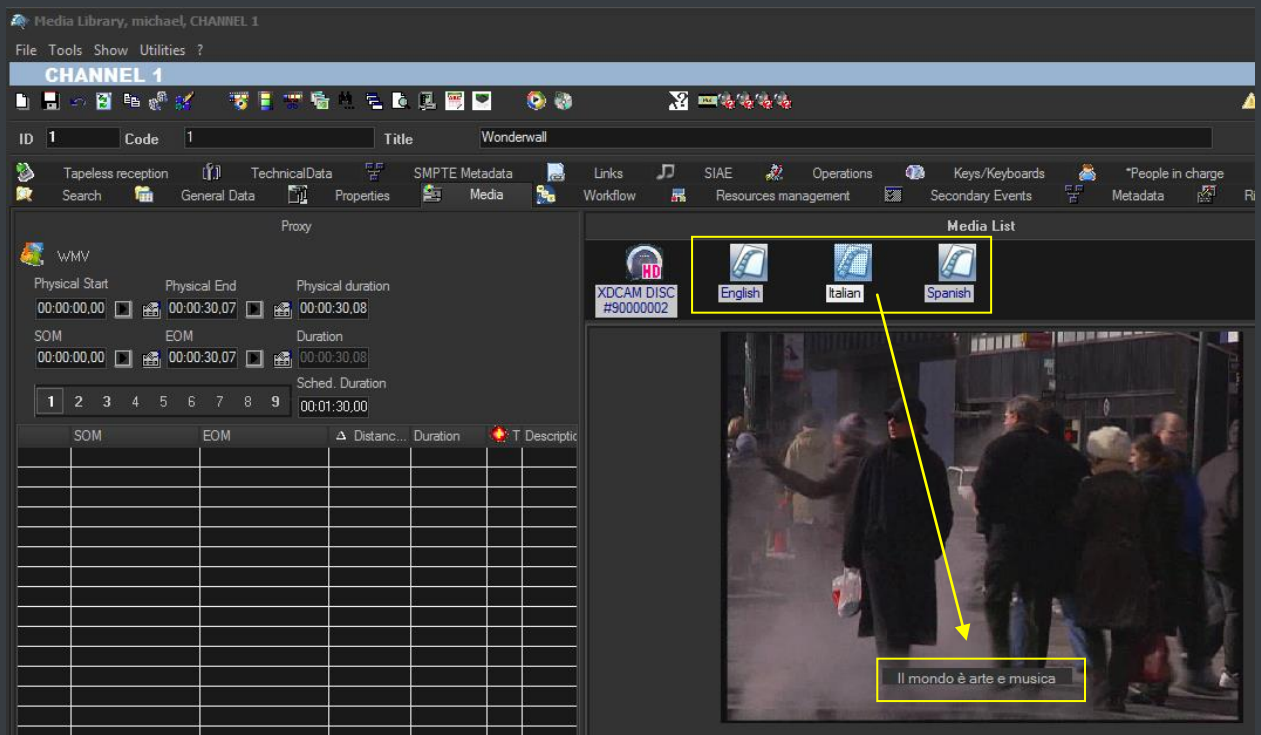
Worksheets are based on a custom structure and are fully integrated into the workflow management, being possible to create user-defined worksheets and include them in automated workflows which current status can be consulted at any time in real-time from either a desktop or web interface:



▼ 5.5.2. 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:



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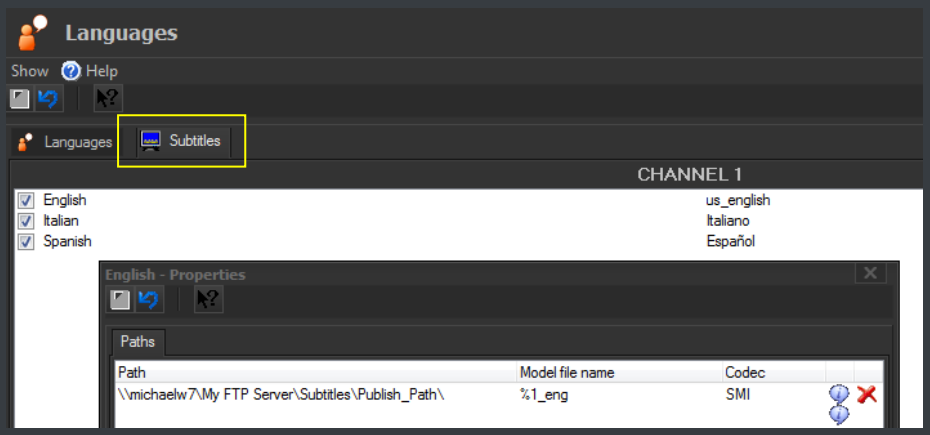
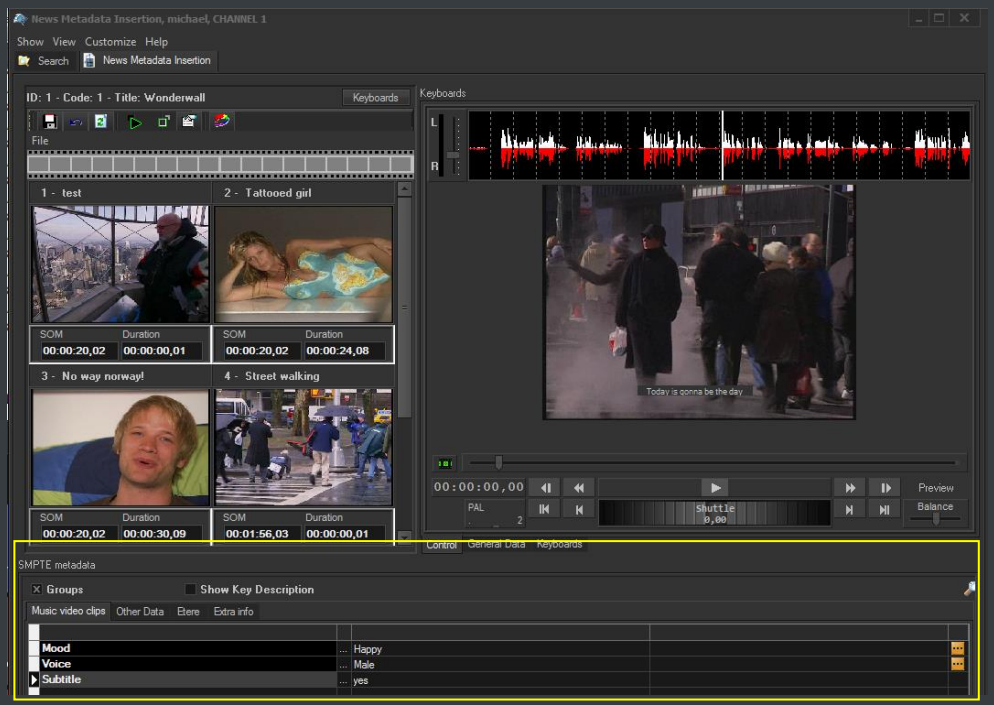
As shown above, subtitles are stored in a repository, ready to be moved to the subtitle engine when either the broadcast playlist will require it or a proxy preview will be performed (e.g. for quality check purposes). Additionally, multiple language subtitle files are supported, allowing stations to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



▼ 5.5.3. 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):



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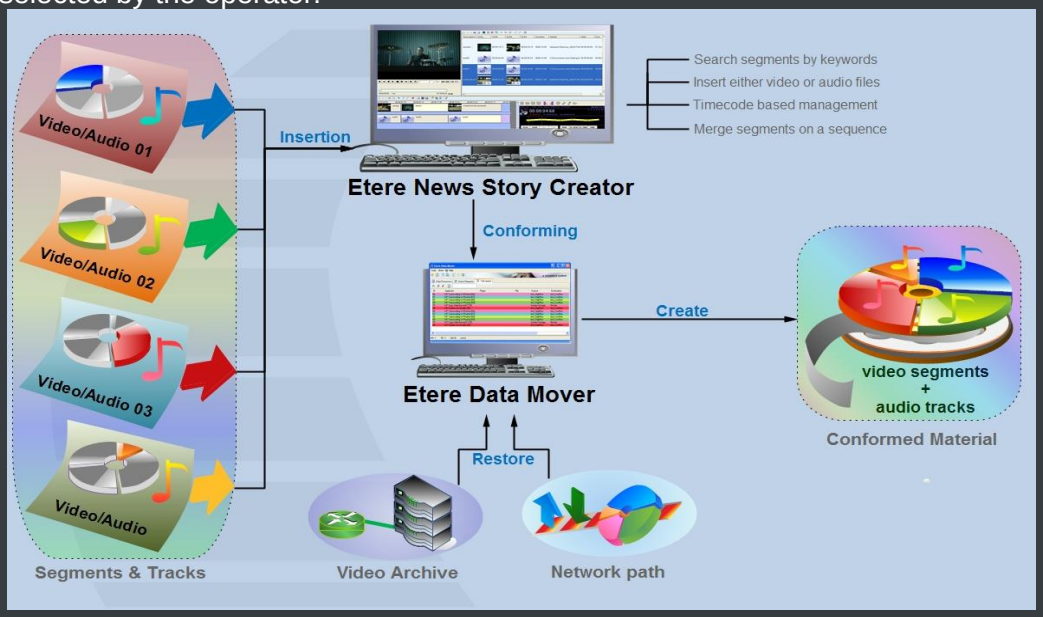
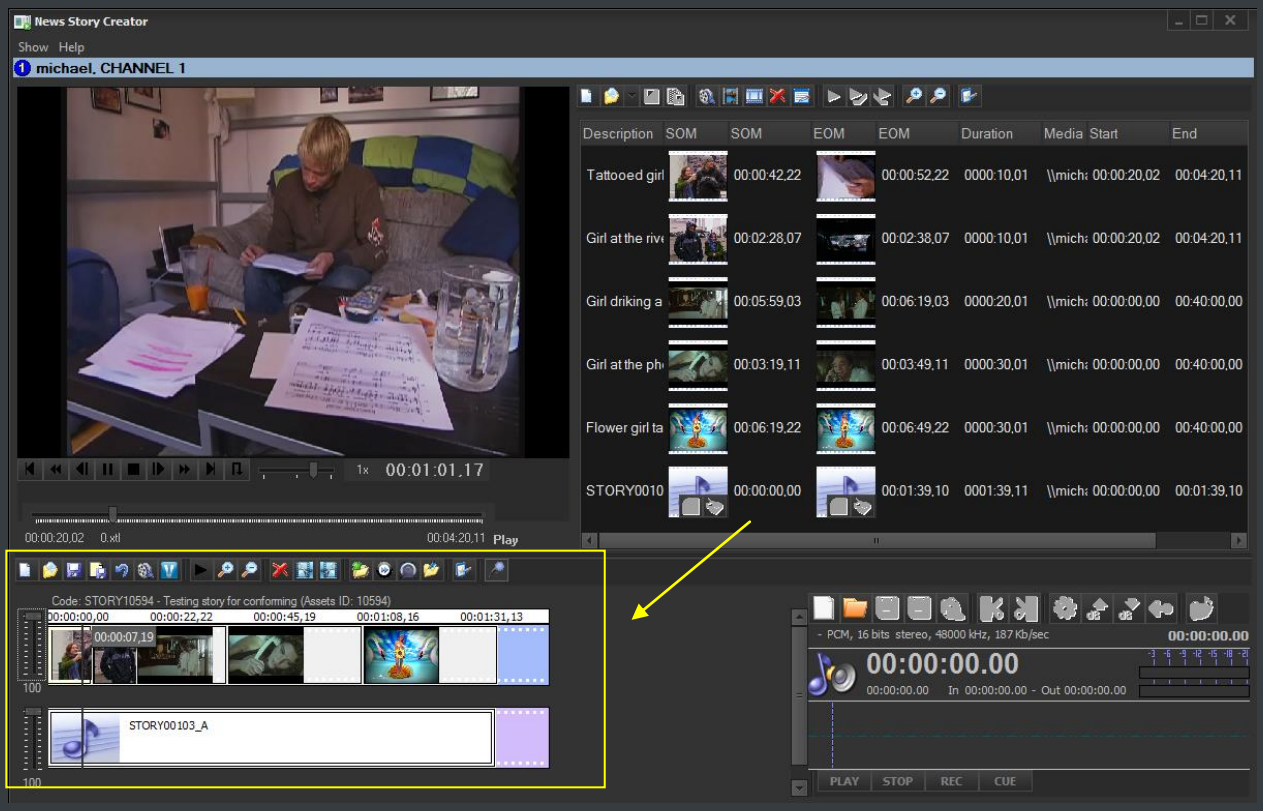
▼ 5.5.4. Video conforming and audio over

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



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



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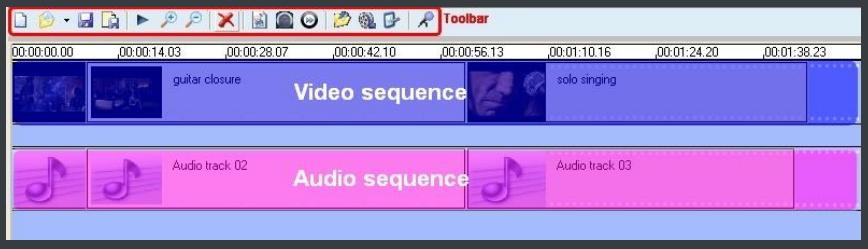
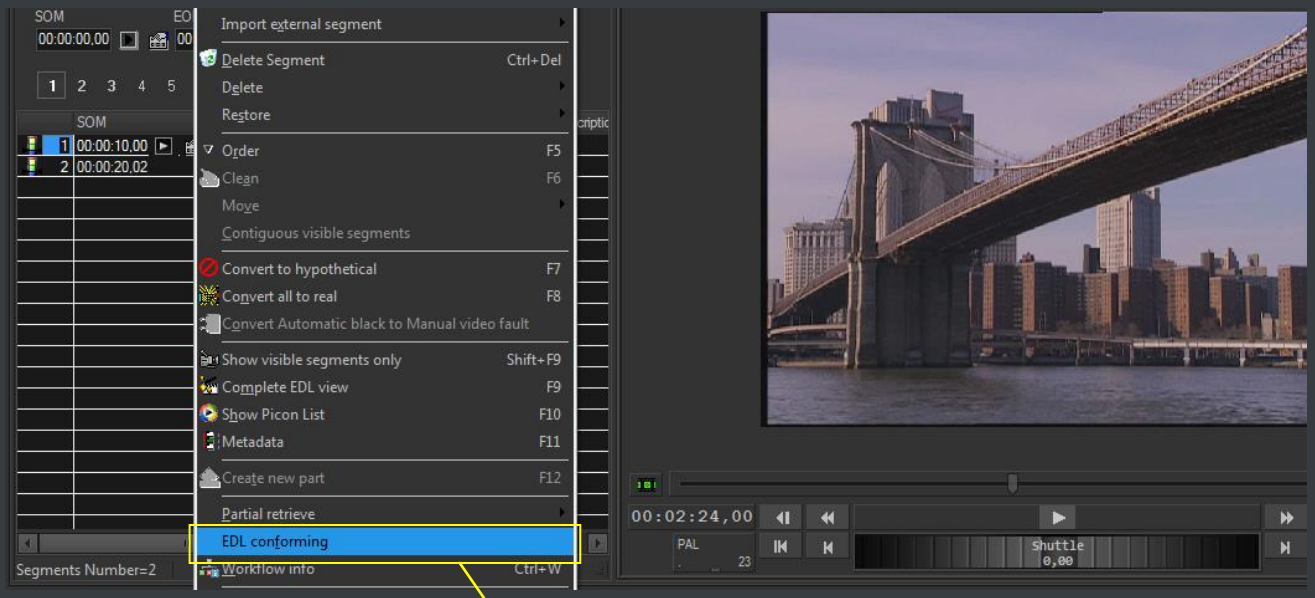
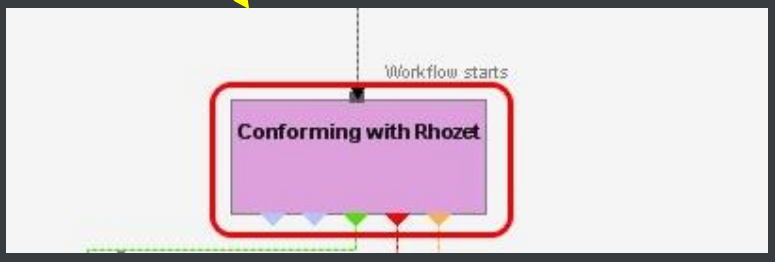
The image above illustrates the user-friendly interface on which operators creates new video sequences of MAM captions which includes all relevant metadata associated to the inserted scenes.



▼ 5.5.5. 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:





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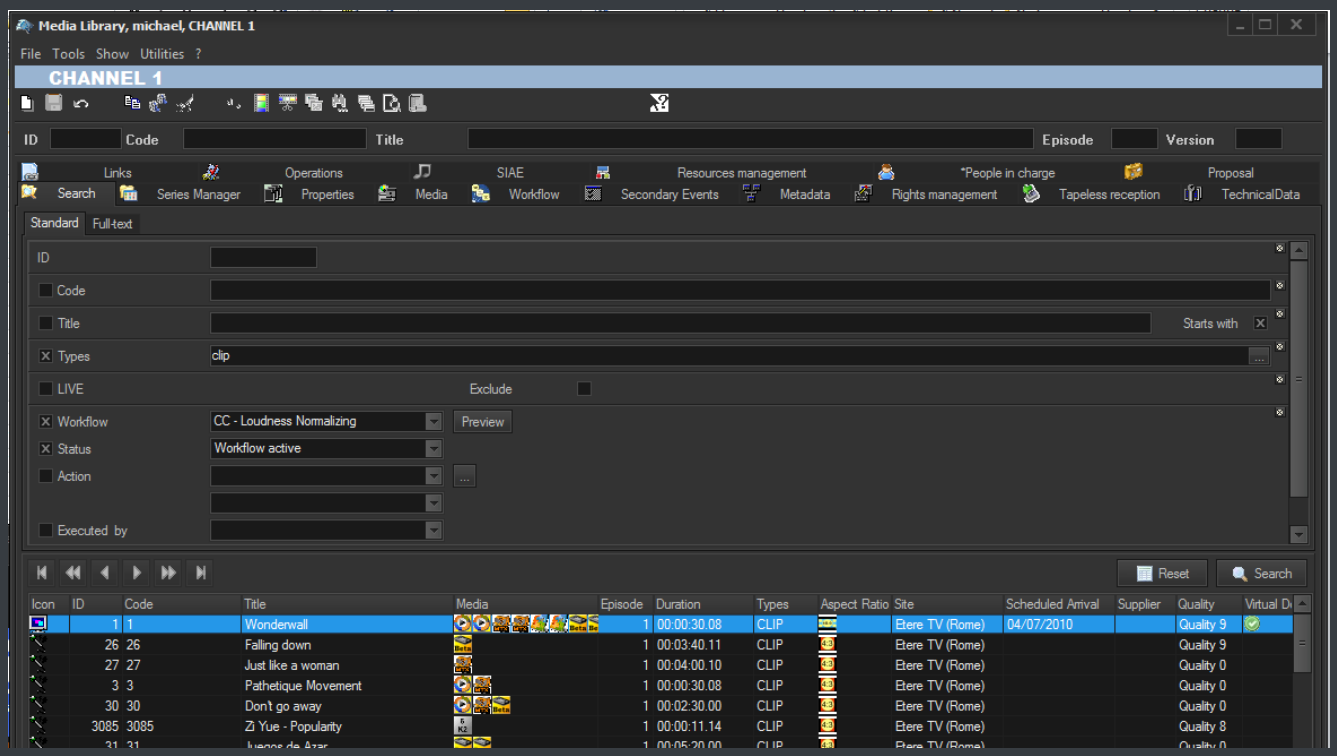
▼ 5.5.6. Search engine

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:



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

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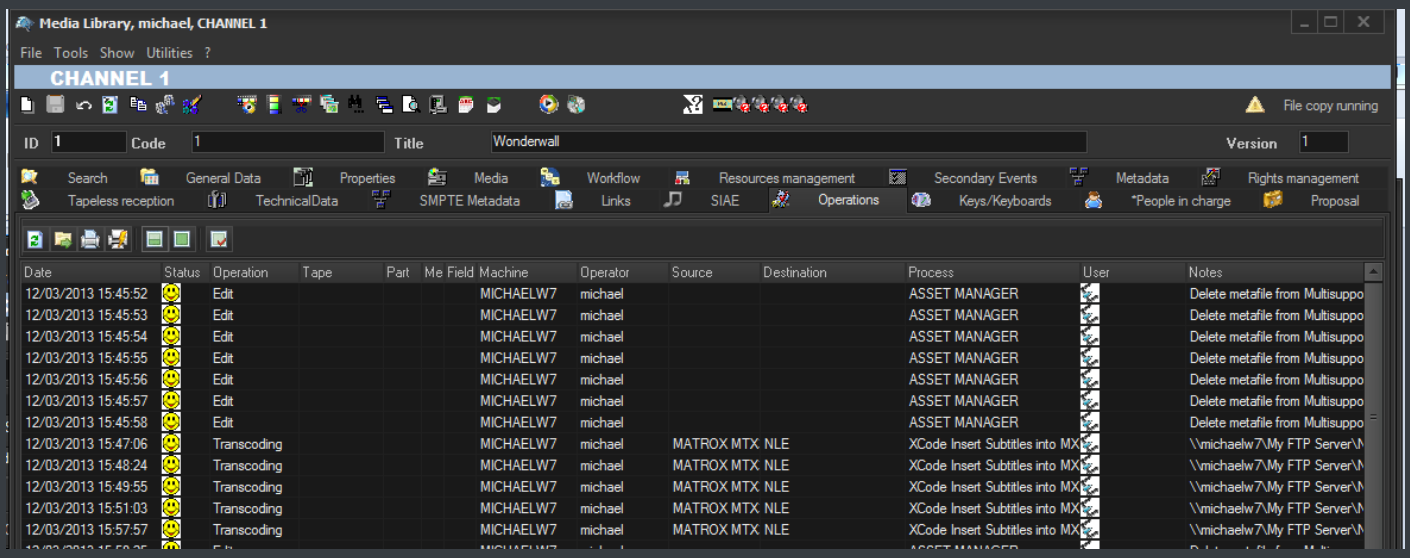
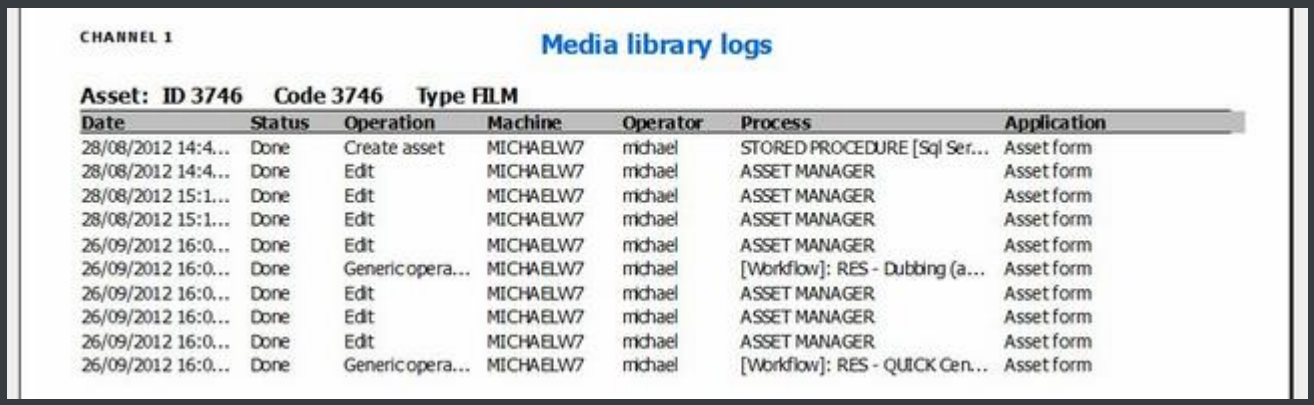
▼ 5.5.7. Logged operations

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



Further reporting integration is also provided:



CHANNEL 1

Media library logs

Asset: ID 3746 Code 3746 Type FILM

Date	Status	Operation	Machine	Operator	Process	Application
28/08/2012 14:4...	Done	Create asset	MICHAELW7	michael	STORED PROCEDURE [Sql Ser...	Asset form
28/08/2012 14:4...	Done	Edit	MICHAELW7	michael	ASSET MANAGER	Asset form
28/08/2012 15:1...	Done	Edit	MICHAELW7	michael	ASSET MANAGER	Asset form
28/08/2012 15:1...	Done	Edit	MICHAELW7	michael	ASSET MANAGER	Asset form
26/09/2012 16:0...	Done	Edit	MICHAELW7	michael	ASSET MANAGER	Asset form
26/09/2012 16:0...	Done	Generic opera...	MICHAELW7	michael	[Workflow]: RES - Dubbing (a...	Asset form
26/09/2012 16:0...	Done	Edit	MICHAELW7	michael	ASSET MANAGER	Asset form
26/09/2012 16:0...	Done	Edit	MICHAELW7	michael	ASSET MANAGER	Asset form
26/09/2012 16:0...	Done	Edit	MICHAELW7	michael	ASSET MANAGER	Asset form
26/09/2012 16:0...	Done	Generic opera...	MICHAELW7	michael	[Workflow]: RES - QUICK Cen...	Asset form

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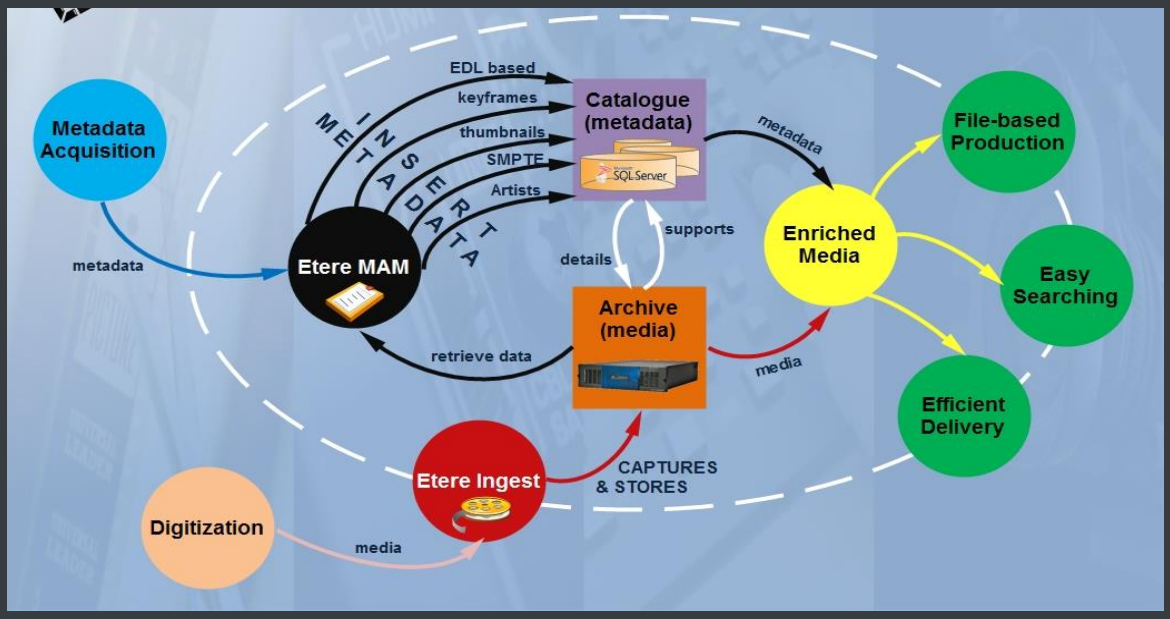
▼ 5.5.8. Integration between MAM and Ingest

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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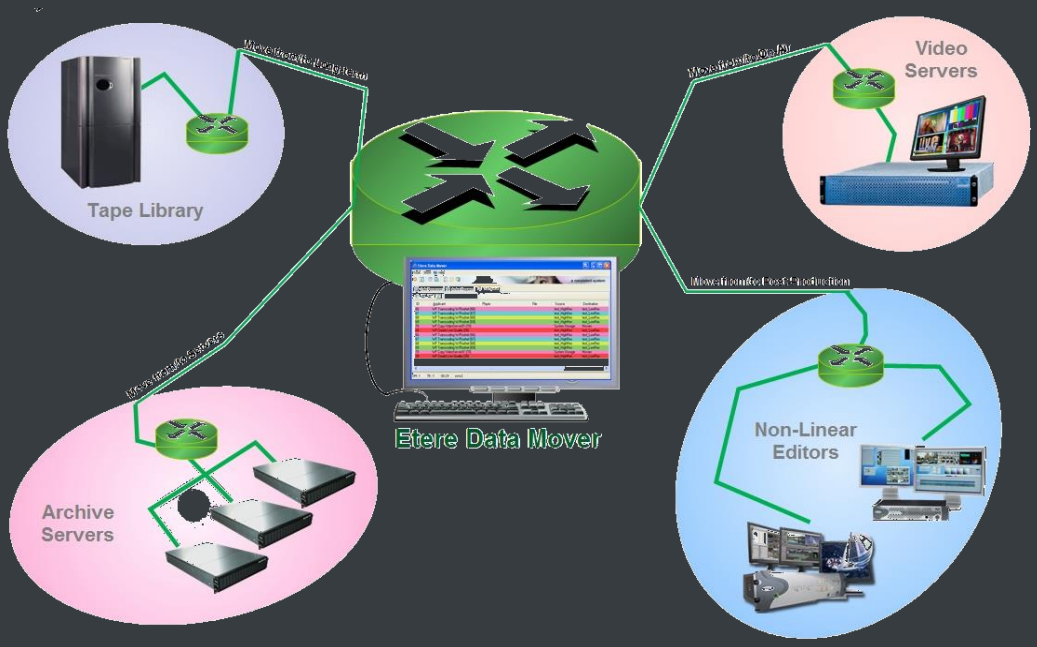
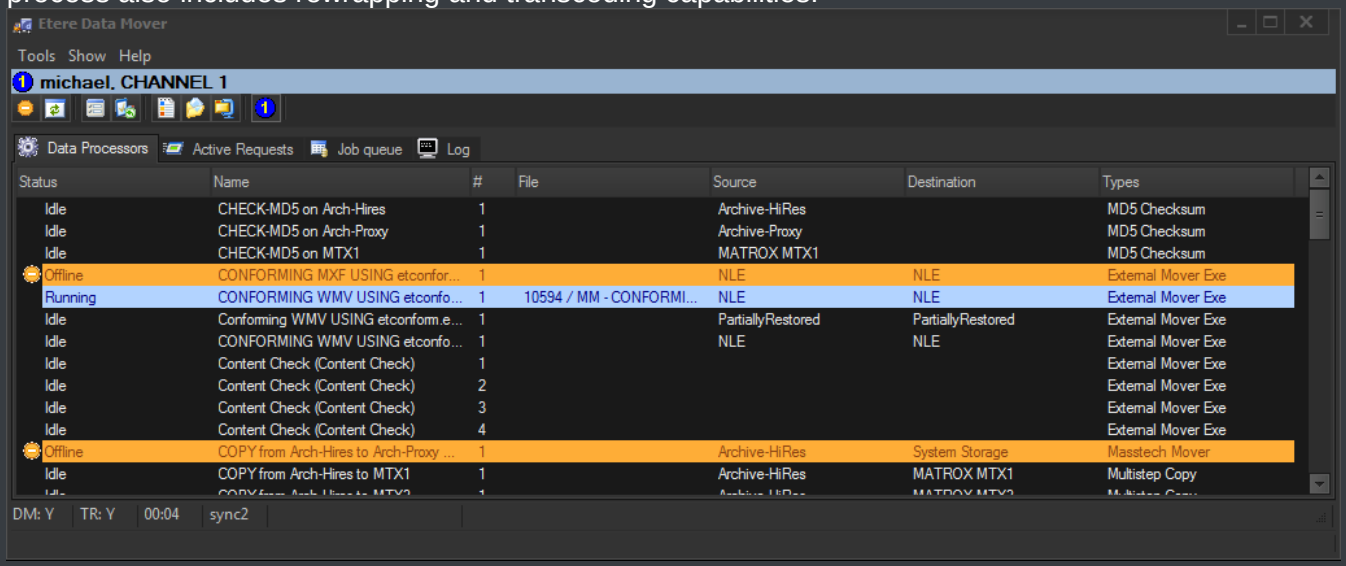
▼ 5.6. DataMover: Intelligent archiving and delivery

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



▼ 5.6.1. Simple and user-friendly interface

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



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▼ 5.6.2. Logical management of data

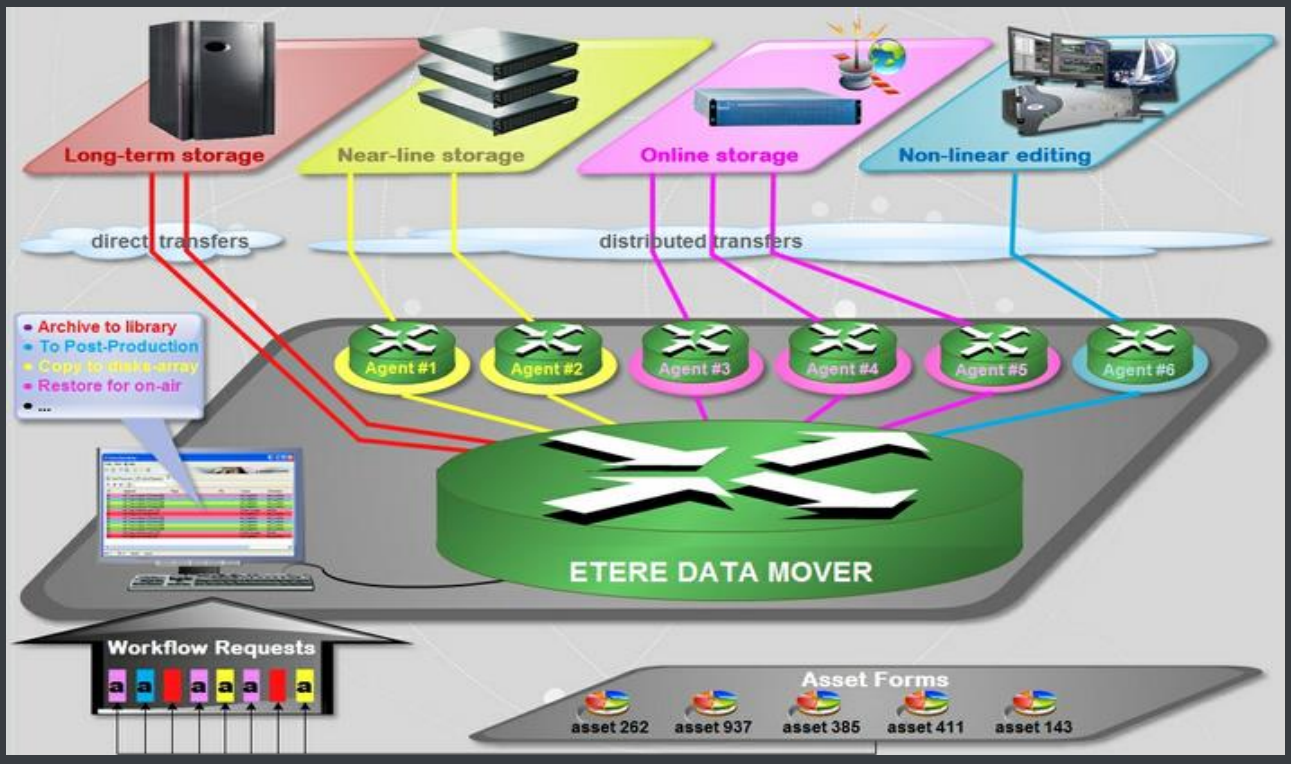
Etere's approach is oriented to "virtualize" the entire media management process, improving it with flexibility, customization and most important cost-effectiveness. Etere manages (logical) metadevices instead of (physical) devices, this approach results in a wide range of possibilities for the media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

Device name	Total	Available	Free space	Notes
NLE-100	1,34 Tb	1,04 Tb	78%	2 volume(s)
NLE-220	686,50 Gb	535,78 Gb	78%	1 volume(s)
NLE-350	2,01 Tb	1,56 Tb	78%	3 volume(s)
OmneonLR			0%	1 of 1 volumes are unavailable
P2 Storage Server	4,69 Tb	3,66 Tb	78%	7 volume(s)
VS-MTX1	Not available	0,00 b	0%	
VS-MTX3	465,75 Gb	203,47 Gb	43%	

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.

▼ 5.6.3. Distributed parallel jobs

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



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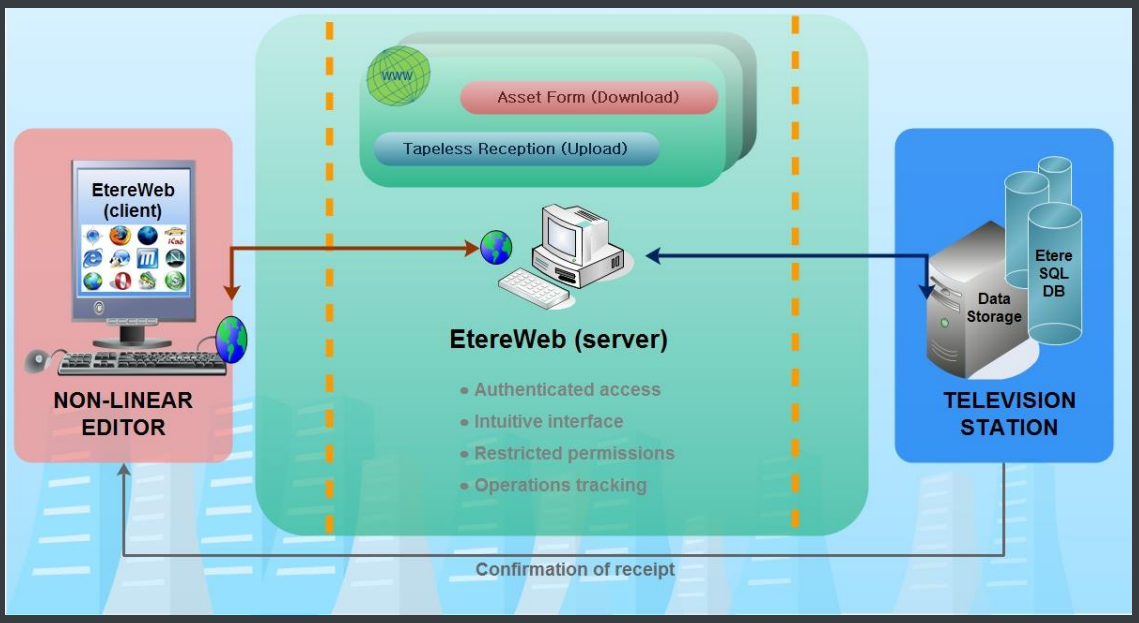
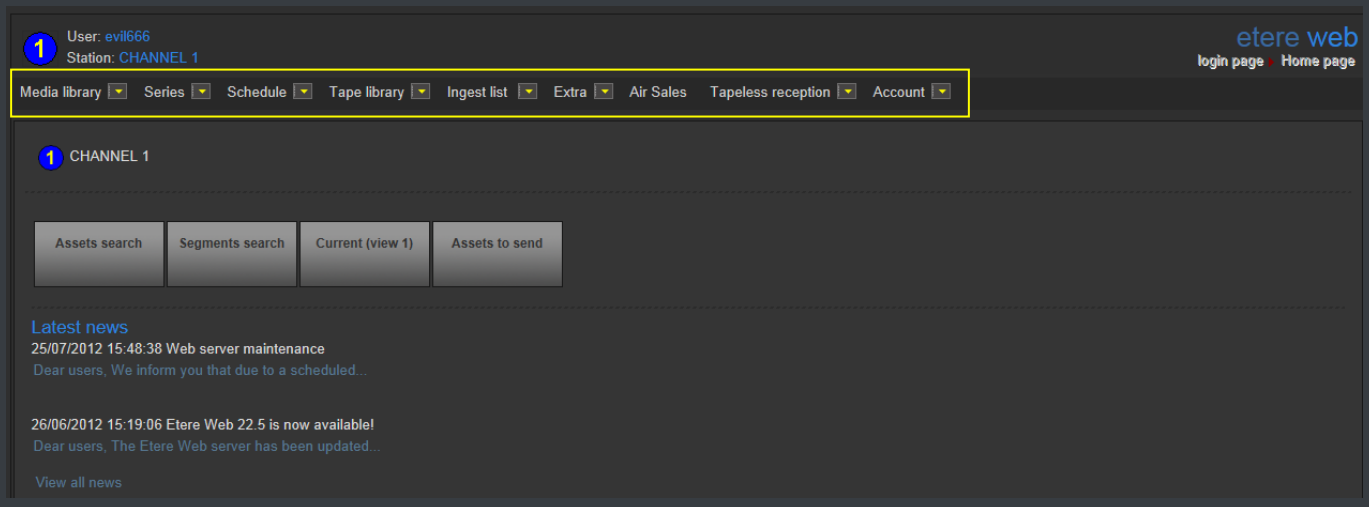
▼ 5.7. EtereWeb: Post-production integration

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:



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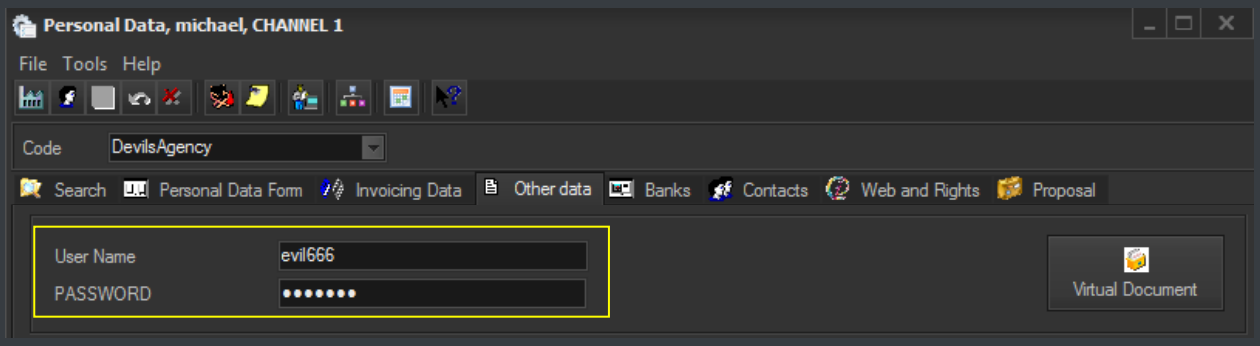
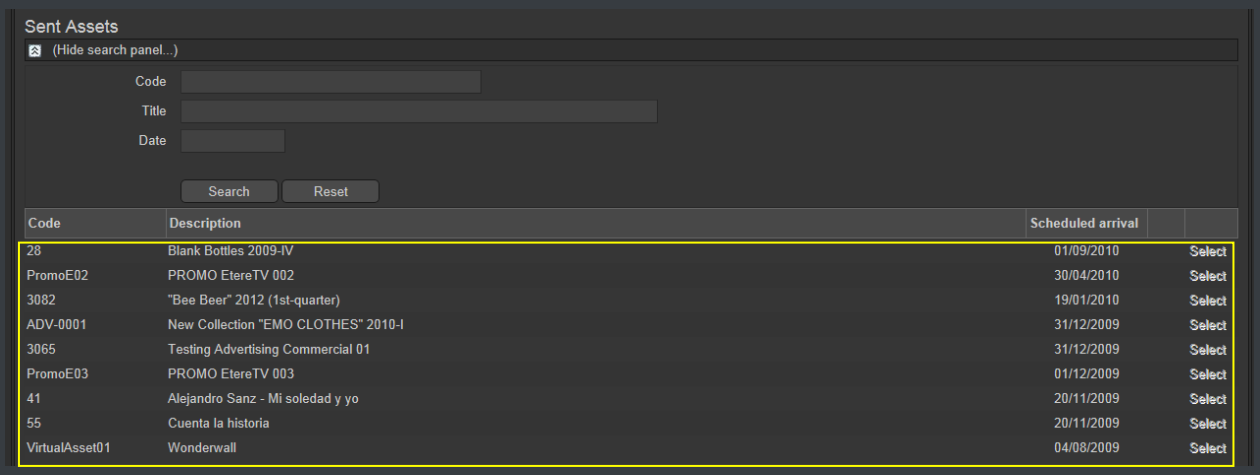
▼ 5.7.1. Authenticated access and rights

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:



▼ 5.7.2. Digital delivery

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:



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. NLE systems, News providers, MAM systems) to easily and safely upload content (and its 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.

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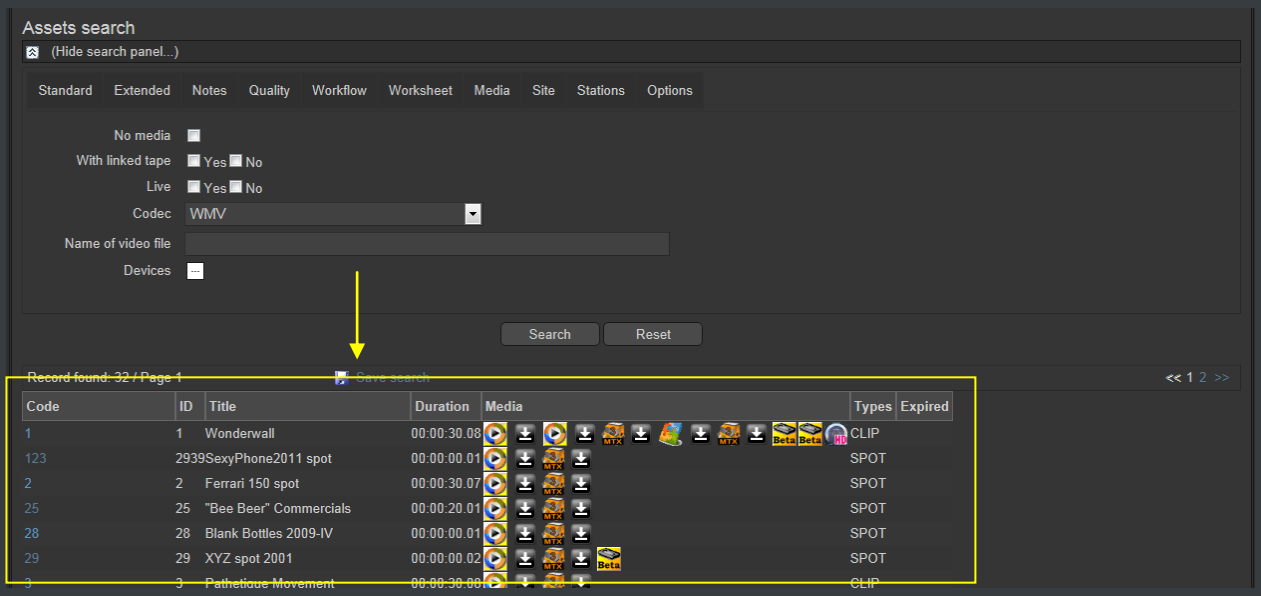
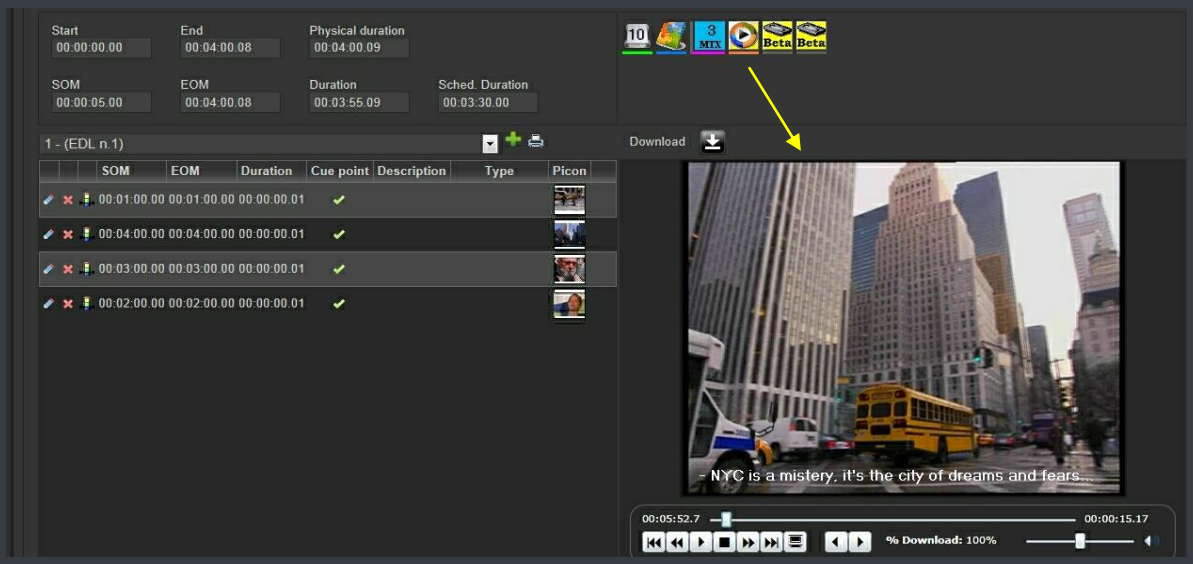
▼ 5.7.3. Search, retrieval and preview

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



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:



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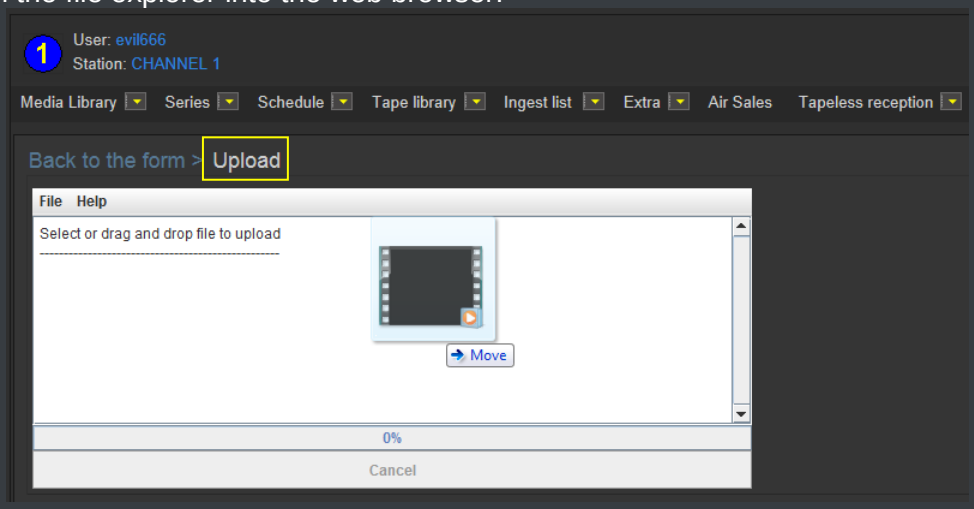
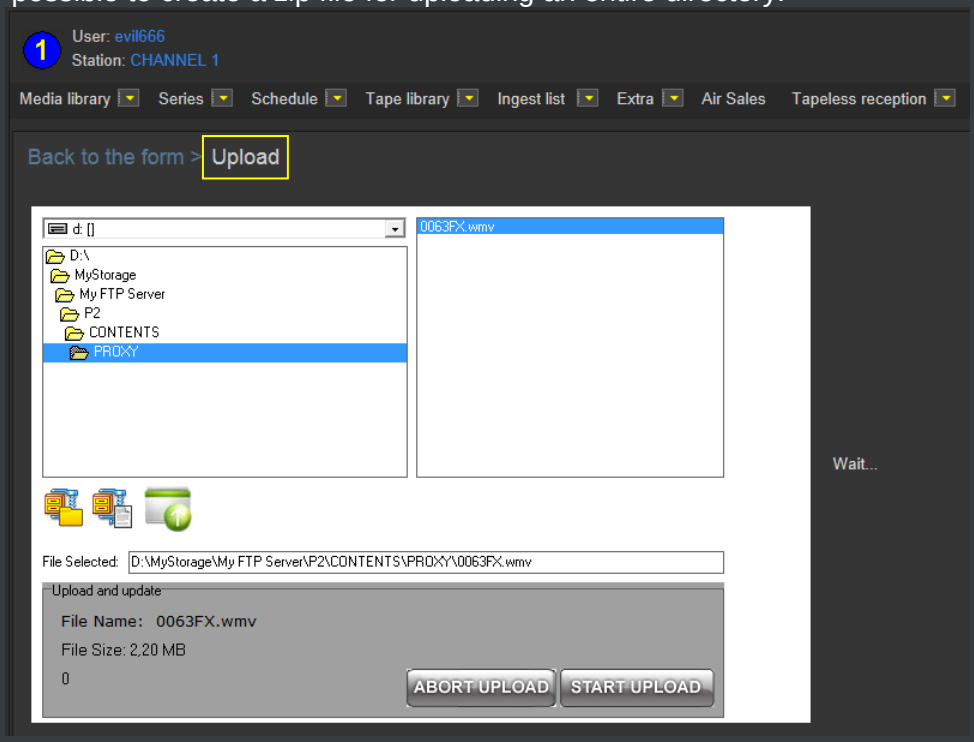
▼ 5.7.4. Selective upload interface

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:



- **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:



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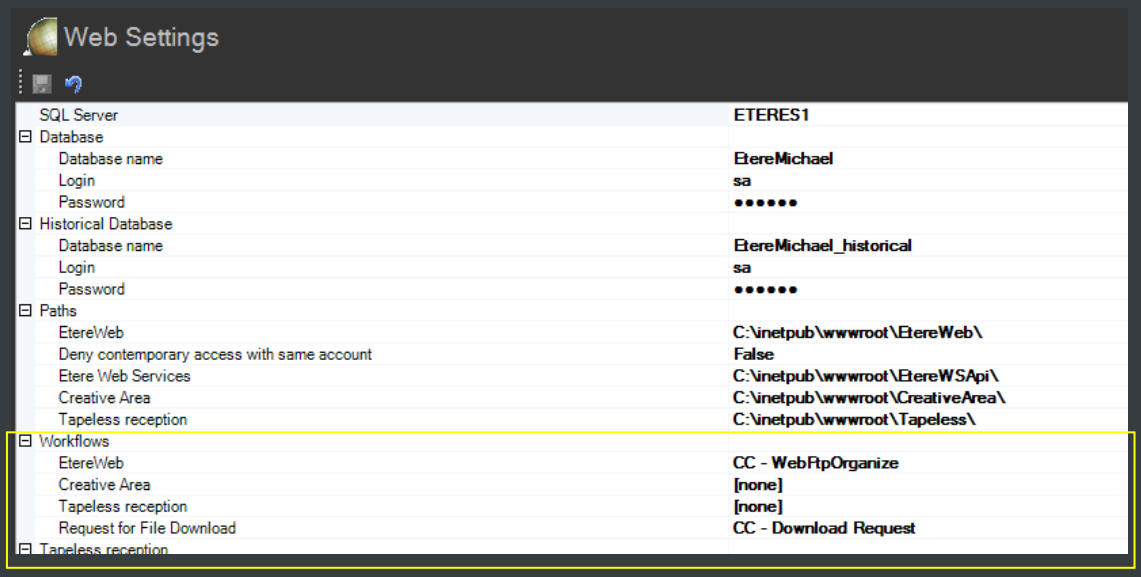
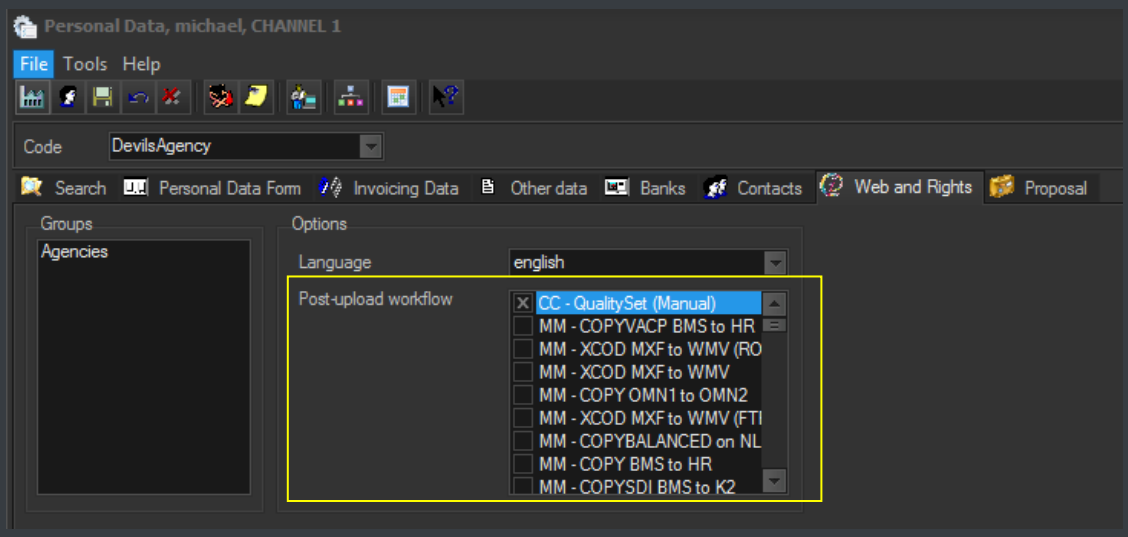
▼ 5.7.5. Pre/Post upload processing

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**:



- **Post-upload workflows**:



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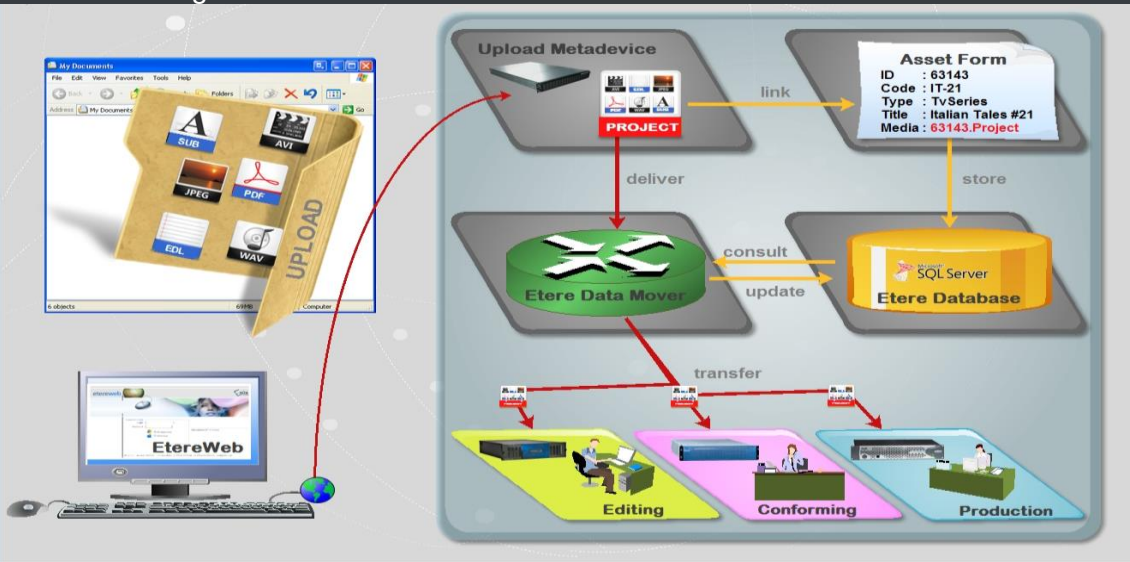
▼ 5.7.6. Multi-file upload support

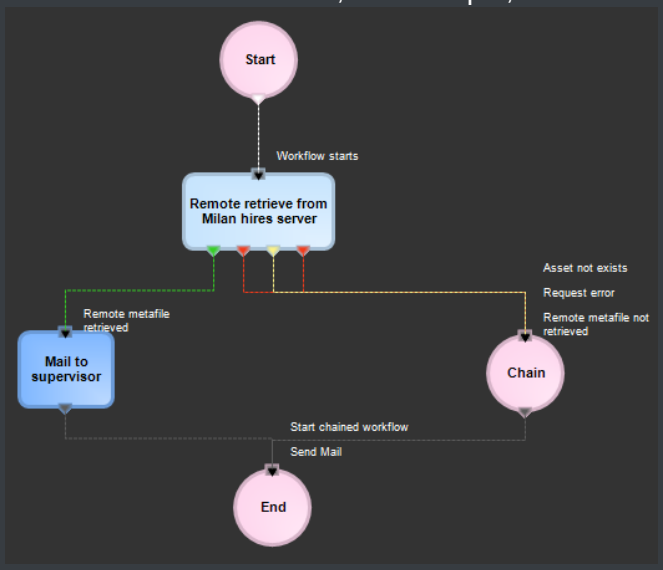
EtereWeb supports not only uploading multiple files with a simple drag and drop action, but also manage them as a single metafile:



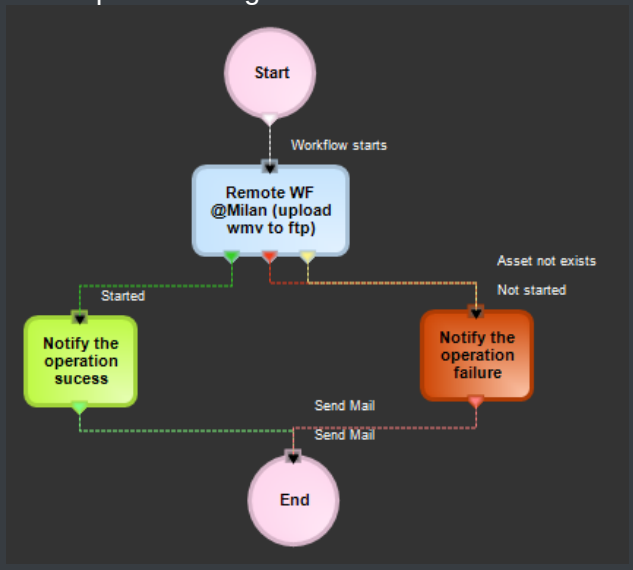
This feature allows NLE systems to, for example, upload into the station's server all the files which make part of a project (e.g. production of promos, conforming of separate scenes, editing of source material, etc.) and deliver them to the related department with a single click and with the reliability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

▼ 5.7.7. 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:



(remote retrieve from a federated system)



(remote upload to ftp)

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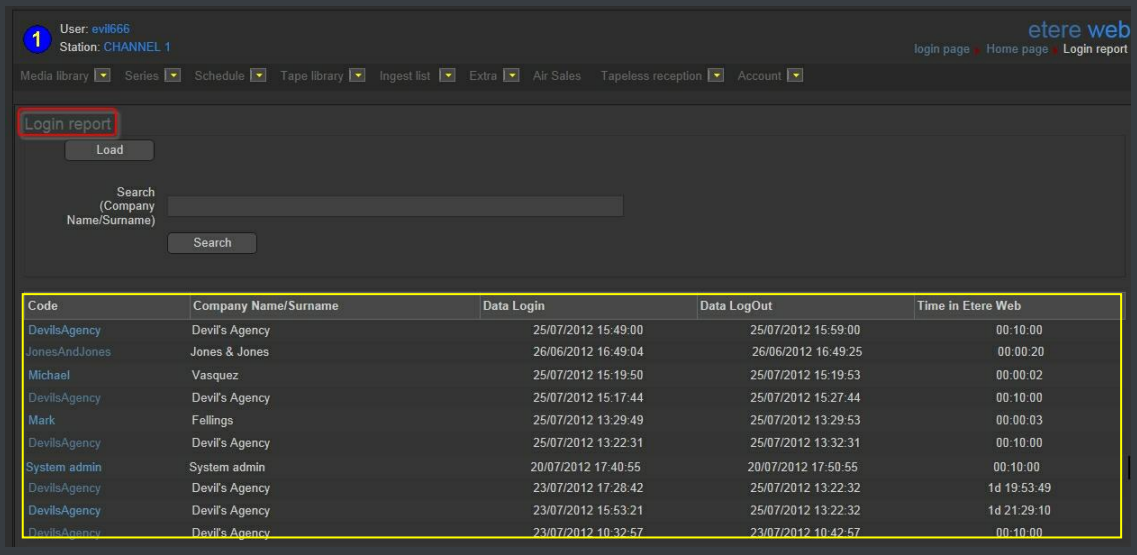
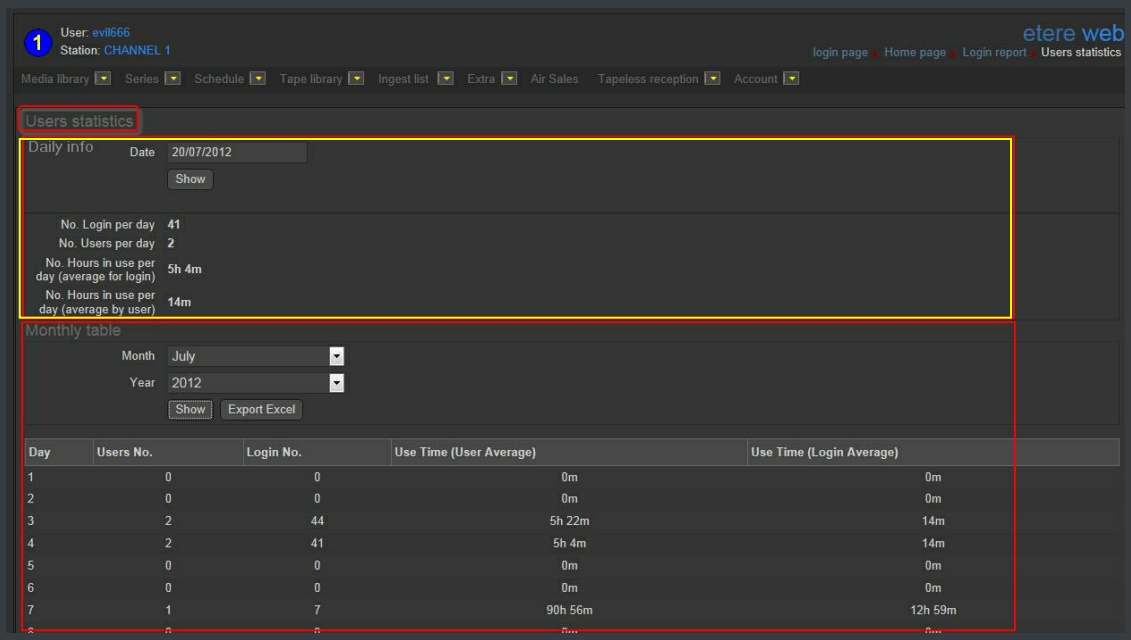
▼ 5.7.8. Centralized monitoring interface

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

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



- **User Statistics** : Overall information about daily and weekly accesses:



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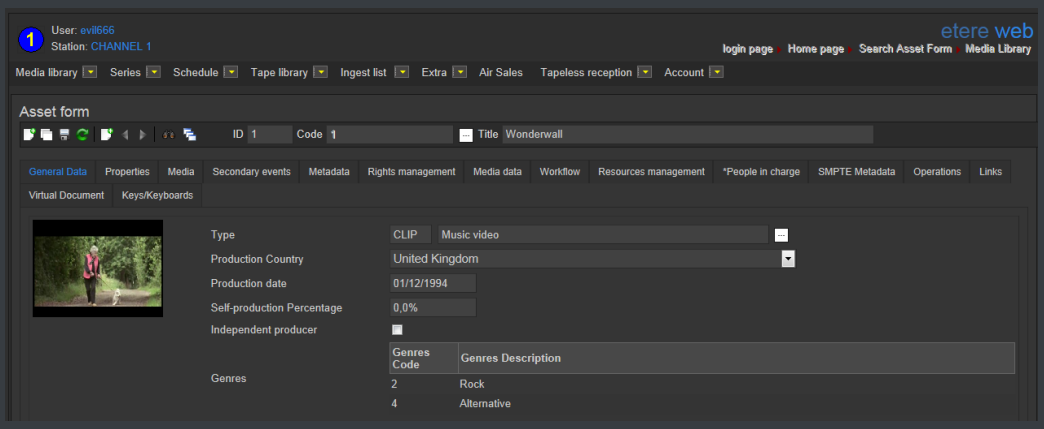
▼ 5.7.9. Remote archive consultation

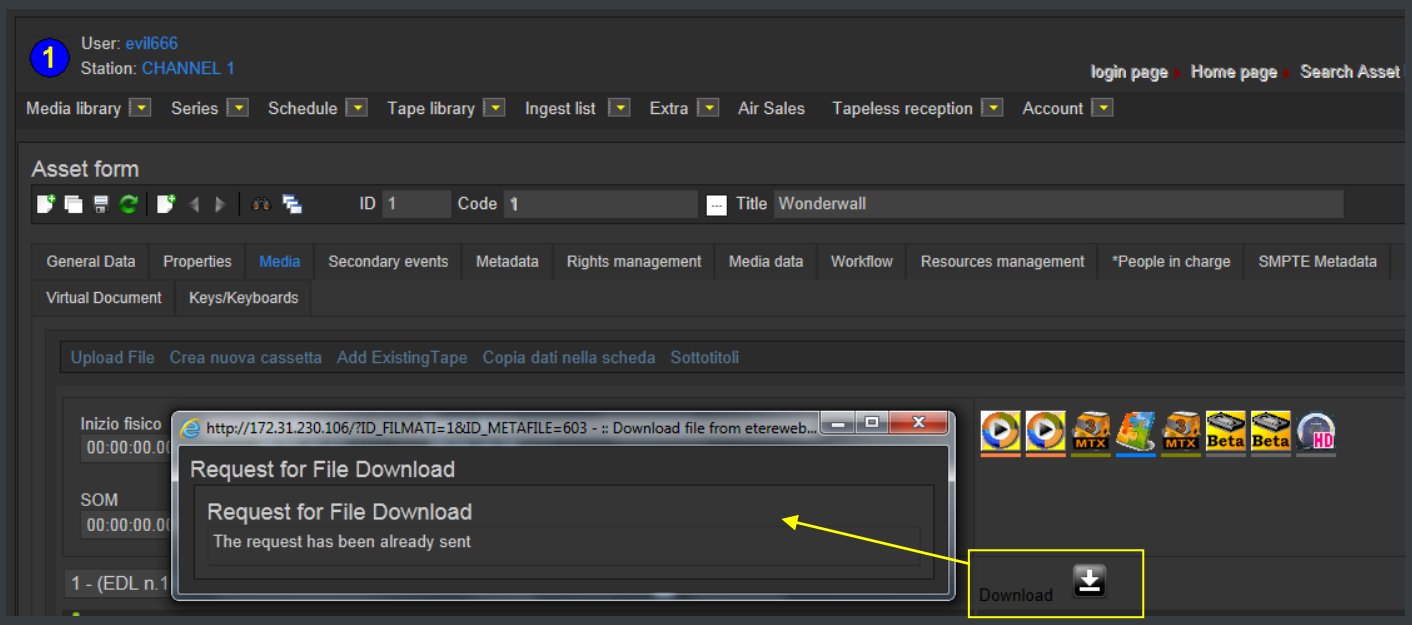
EtereWeb allows web users to check and also control the digital archive remotely via web. Web users will be provided with a fully-tracked access to the most relevant Asset Management operations through a robust search engine and including a wide set of function-specific sections (i.e. general information,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



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.

▼ 5.7.10. 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):



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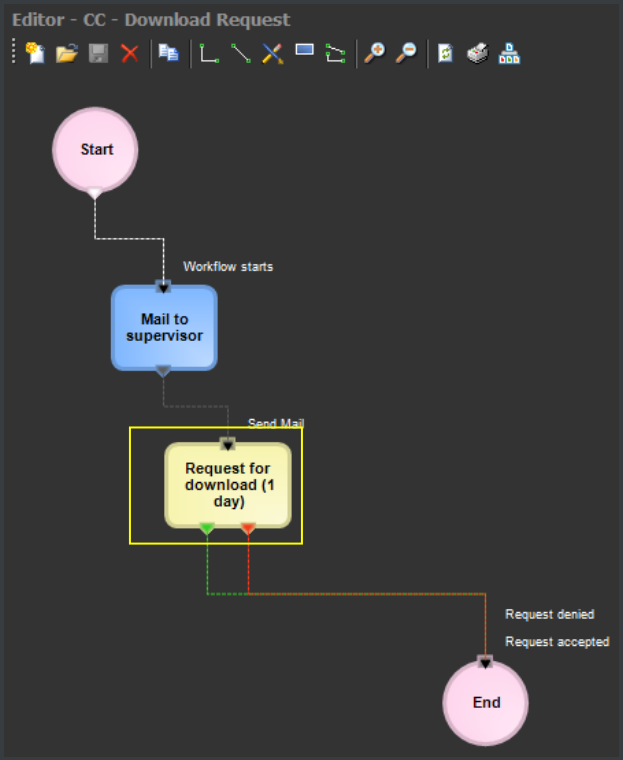
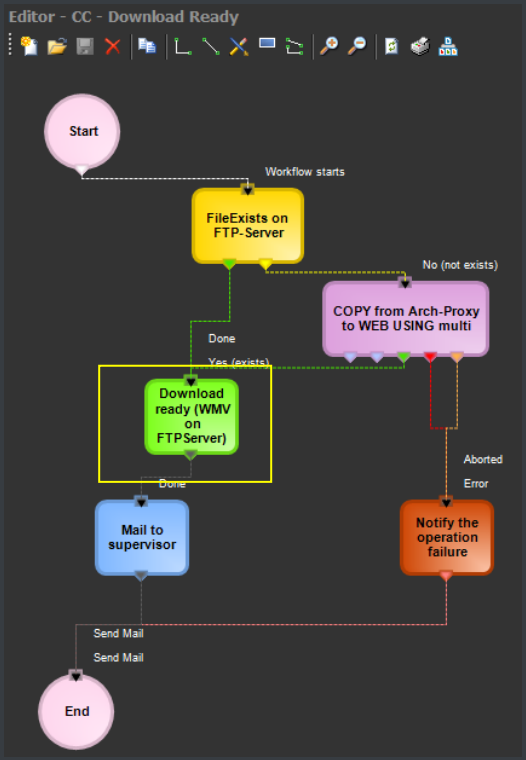
Web requests are managed via workflow to allow a custom and automatic launch of worksheets:

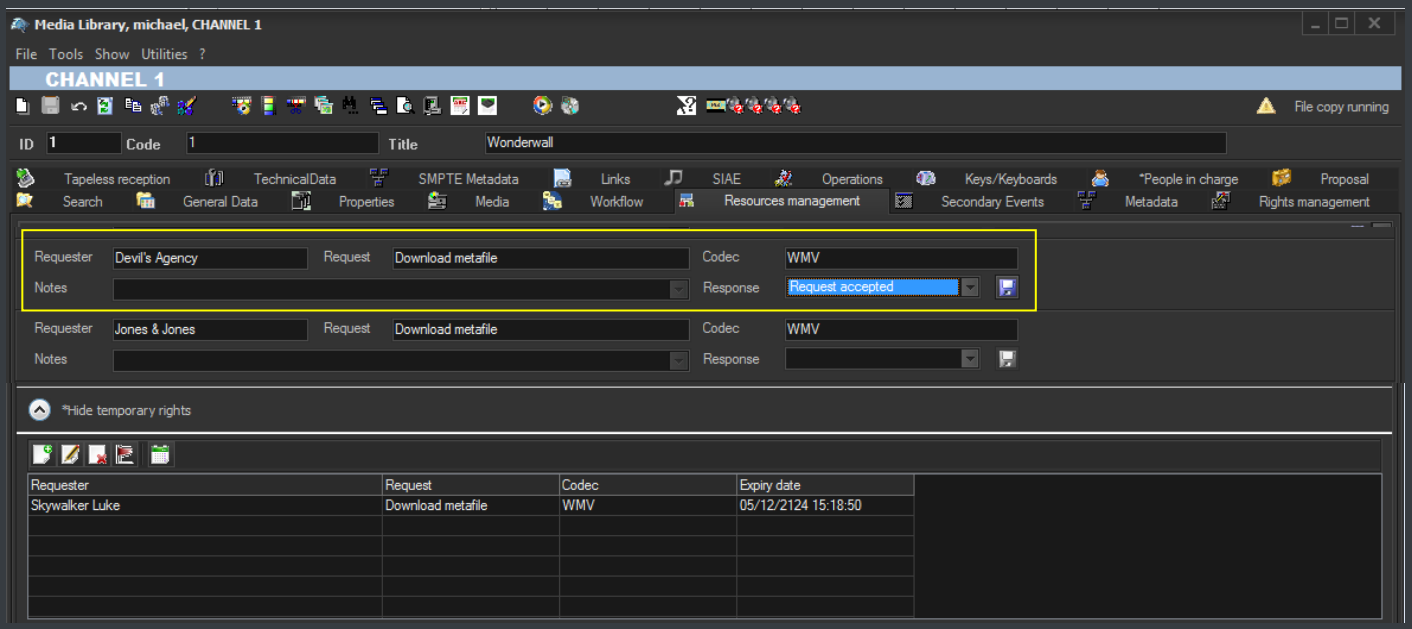


(download request)



(download ready)

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



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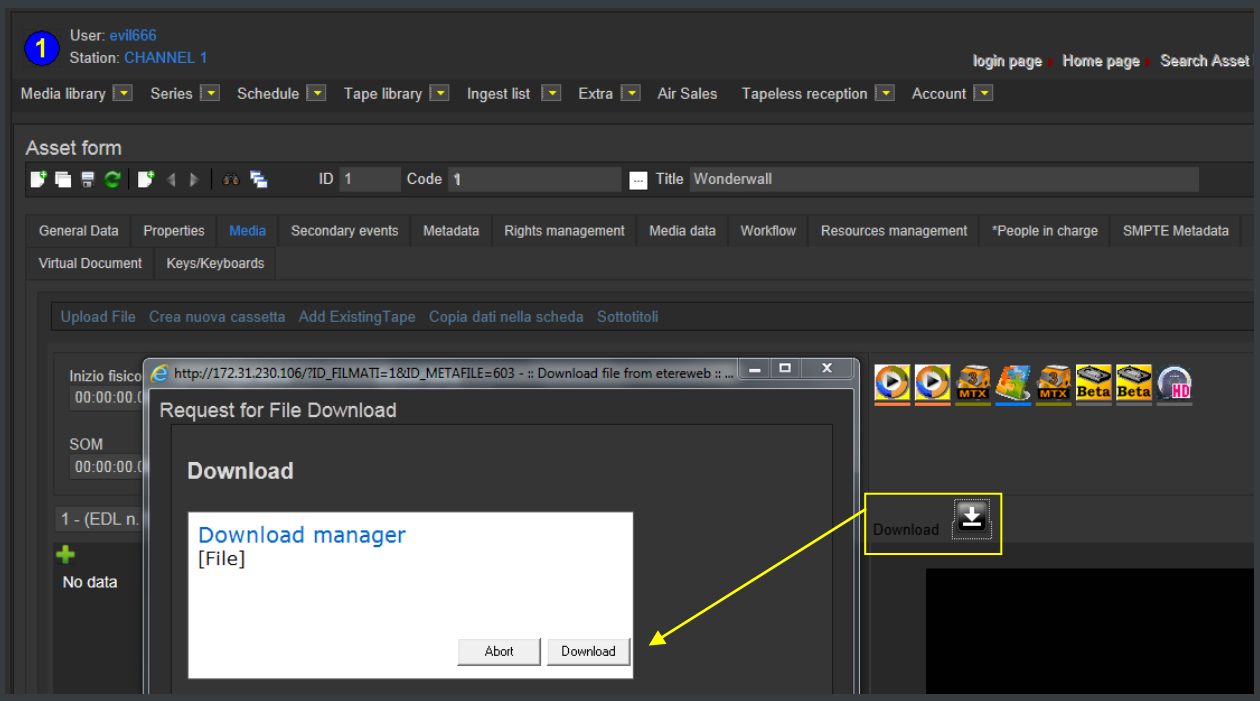
Once the requested is evaluated, web-users will automatically receive an email notification containing the information (e.g. ID, codec, fixed note and an evaluation note) about the asset for which the request has been performed. The email notification will be sent to the email specified in the personal 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>

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



▼ 5.7.11. 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.

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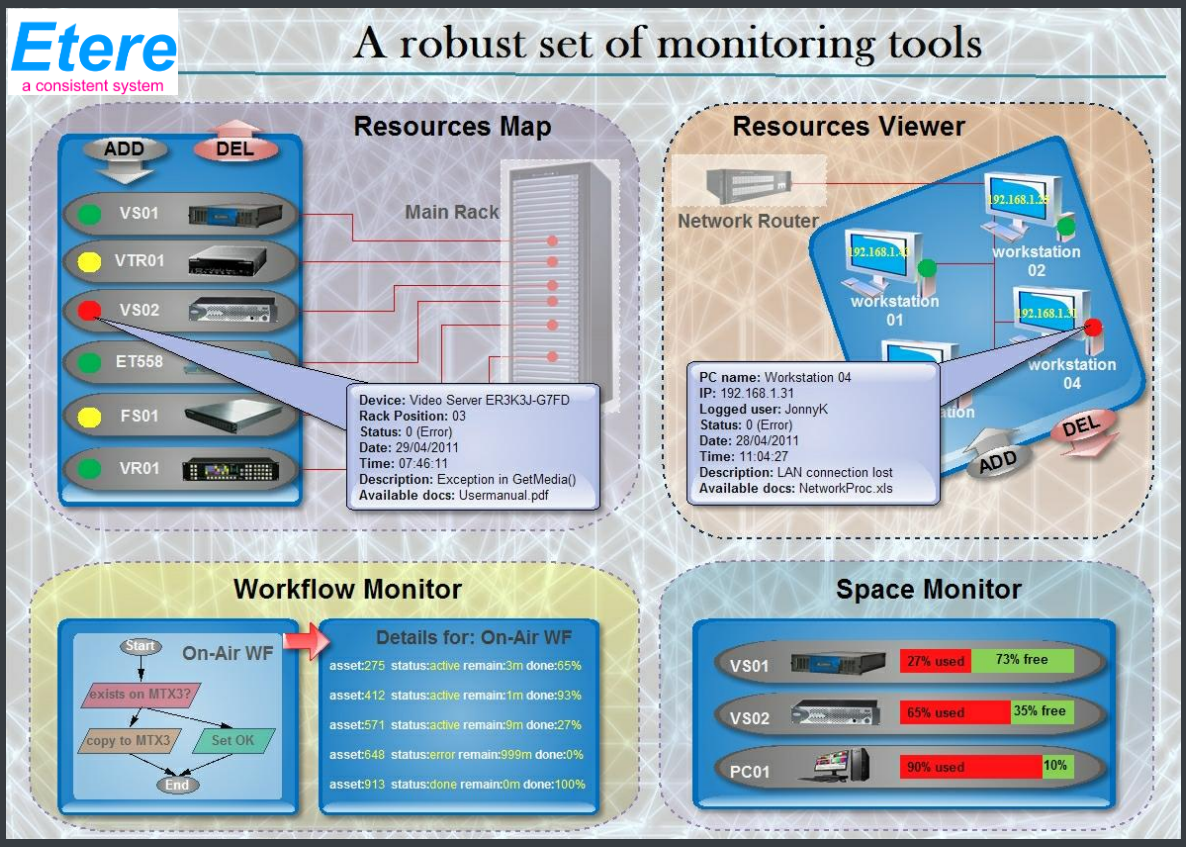
▼ 5.8. Monitoring Console: A complete SNMP monitoring

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.

▼ 5.8.1. 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.

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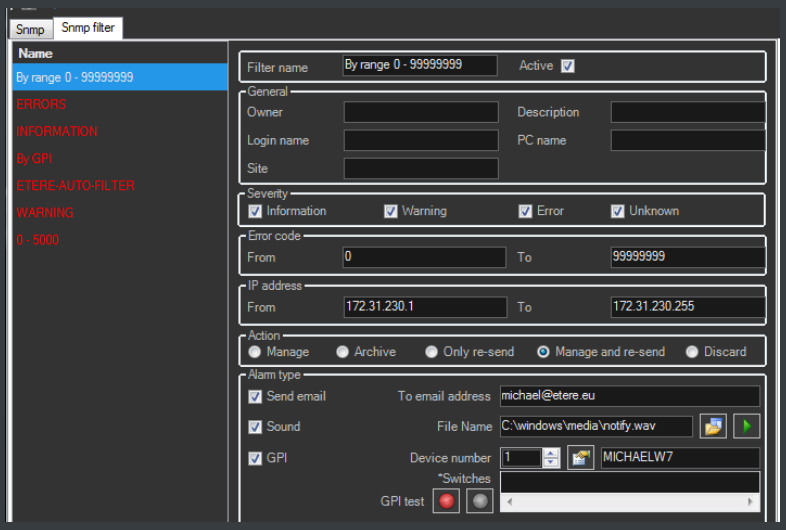
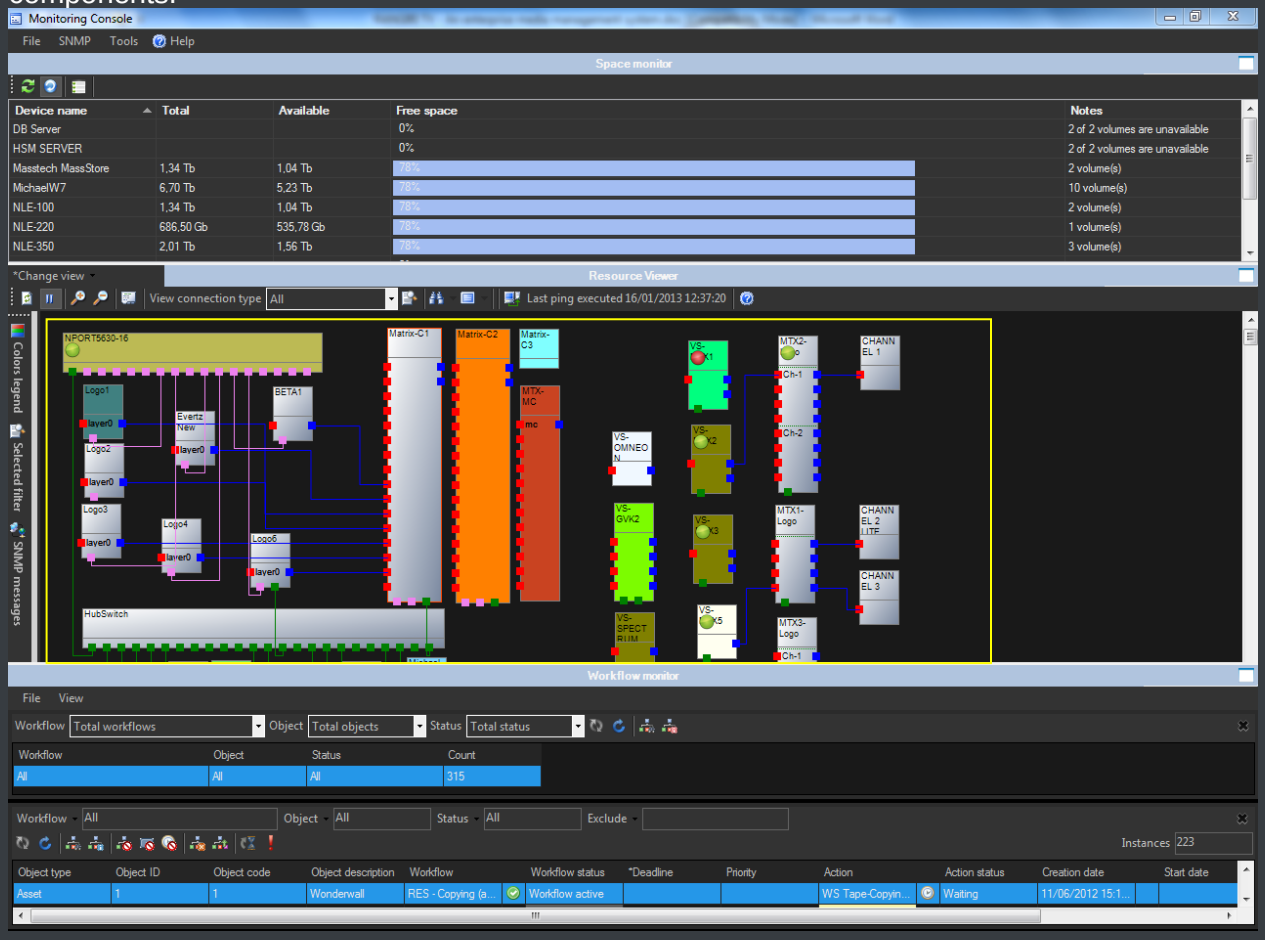


▼ 5.8.2. Visual real-time monitoring

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



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▼ 5.8.3. 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 ***metadevices*** 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".

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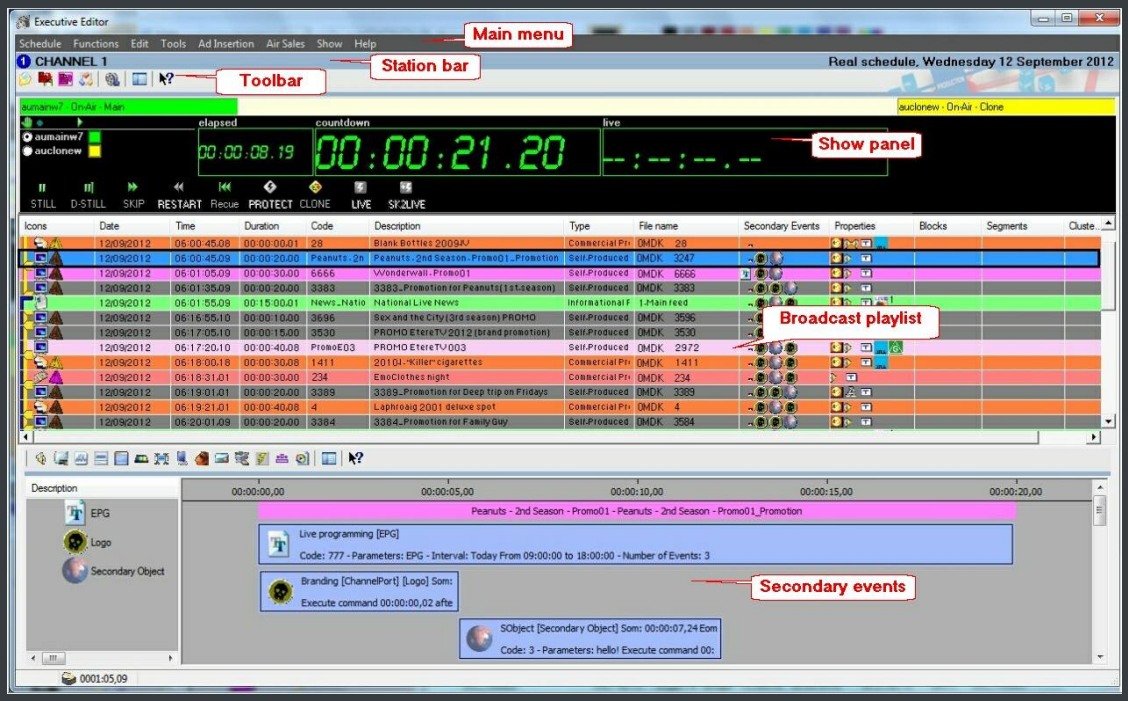
▼ 5.9. Scheduling: A complete playlist management

Etere Scheduling takes care of one of the most delicate process of the broadcast chain, it offers a fully integrated management of daily schedules, and this application is greatly composed by various simple applications that those who draw up the daily schedule will appreciate.

Executive Editor is the broadcast programming solution to made up programming schedules, offering a digitally based broadcast scheduling of your transmission using a second-by-second approach, so you can freely and accurately define what to broadcast and when, ensuring that every second of airtime is covered.



- **Enterprise interface**, an easy-to-use main scheduling application for drawing up broadcast schedules manually, Executive Editor can manage up to 10 different alternative schedules besides from the main one (real scheduling).

- **Instant editing**, the schedule view is clearly laid out for ease of management, in this way, the simplicity of the software, the immediacy of the user interface and the completeness of the contextual help make this application extremely easy to use.

- **Tight integration**, due to the Etere distributed system architecture, you will be able to see events made with other Etere Modules (i.e. Etere Air Sales, Etere BMS, etc) as 'commercial events' which are shown with a particular icon which identifies their property, thus, taking care of the undesired manipulation of these highly important events.

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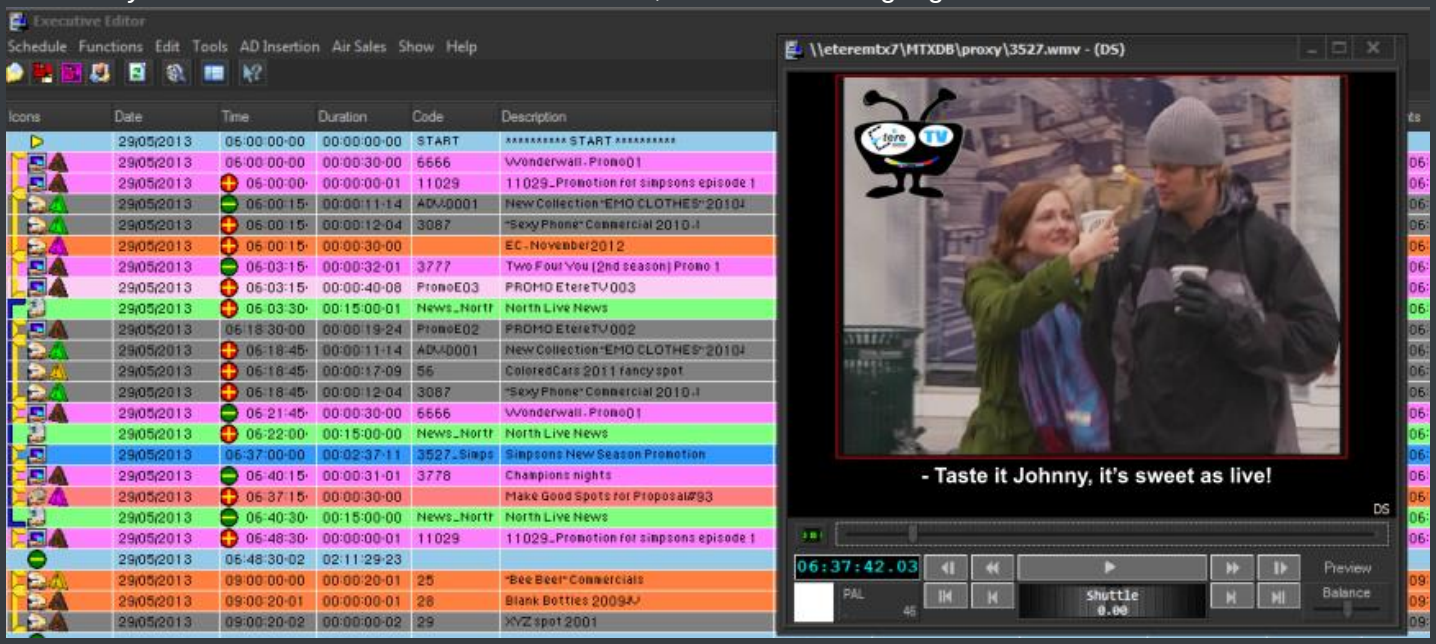
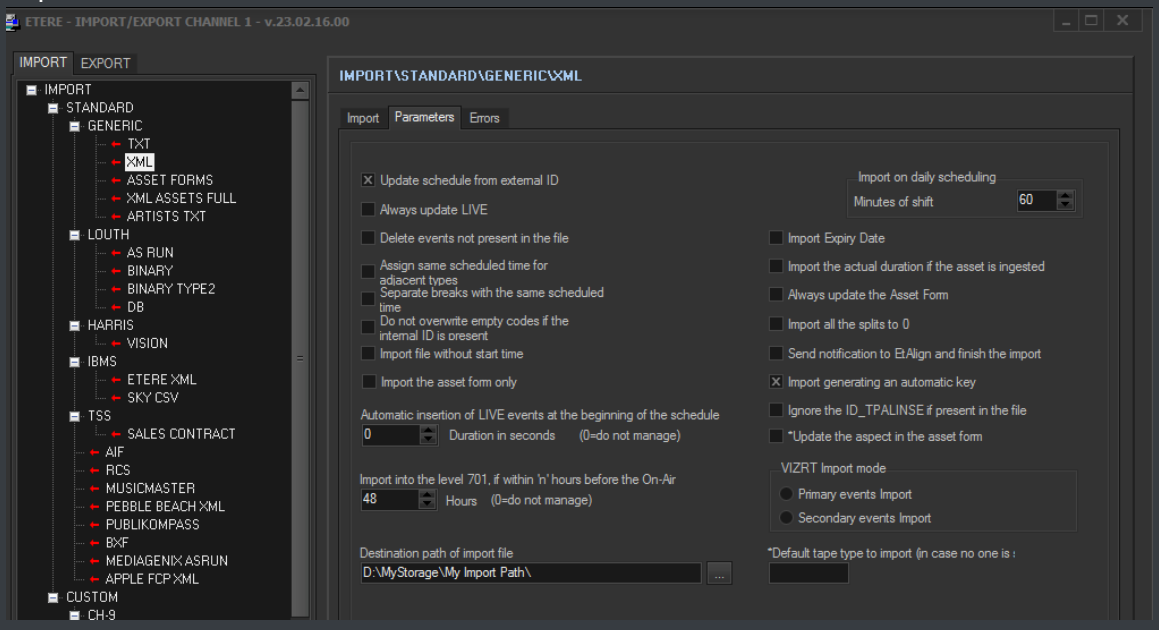
▼ 5.9.1. Rich preview feature

The Executive Editor allows browsing event in either low and high resolution, preview can include secondary events associated to scheduled events, inserted branding logos and eventual subtitles:



▼ 5.9.2. Robust import/export tool

The **Import / Export** module included in Etere Scheduling allows to perform the importation and exportation of daily schedules in a wide set of fully customizable formats, ensuring the interaction of Etere with other scheduling systems and vice versa going from a generic txt or xml to a fully tailored exportation file:



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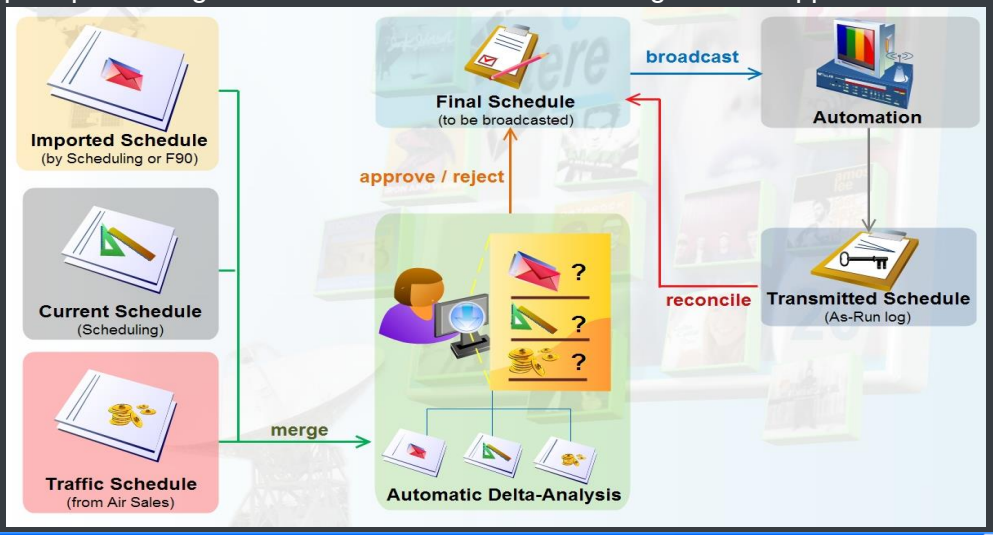
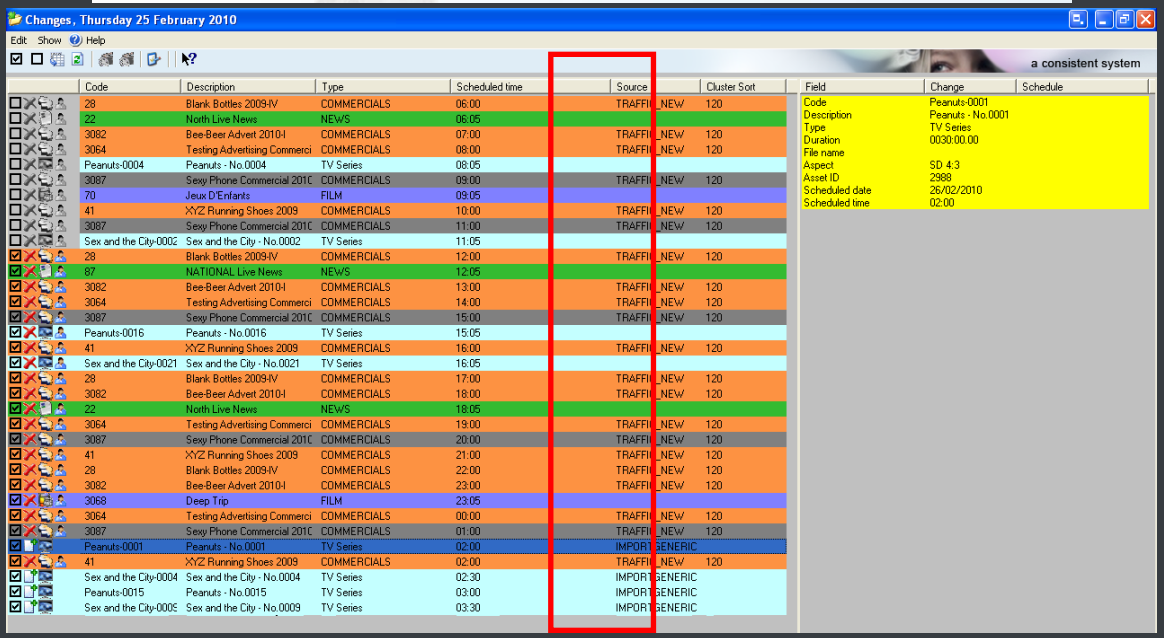
Some of the several types supported by the import/export system includes TXT, XML, XML for assets, XML with tapes, TXT for money, XML assets full, EPG, etc. For instance, the **XML import** allows importing from an XML file the broadcast schedule for one or more television days. Values are identified by the name of the tag specified in the XML file, which are the same as the fields present in the Etere's *asset repository* and *broadcast playlists* tables.

▼ 5.9.3. Verify and approve changes

Etere Scheduling also provides operators with a simple graphical module to view, analyze and approve changes (i.e.: traffic, imported, and corrected programs) between the current schedules and any imported schedule. When the current schedule has incoming changes, the operator is advised through a prompt-message which announces that new changes to be approved are available:





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This simple interface allows the operator to easily identify the source from which changes have arrived and then decide to either approve or reject them though a simple selection process.

▼ 5.9.4. Planning of secondary events

A **Secondary Events Planning** form permits to automatically schedule secondary events (including crawls) according to user-defined criteria based on either specific time slots or event durations/types. All provided features have been summarized in the following key points:

- Recursive insertion within profiles
- Scheduled appearances information
- Planned data monitoring from EE

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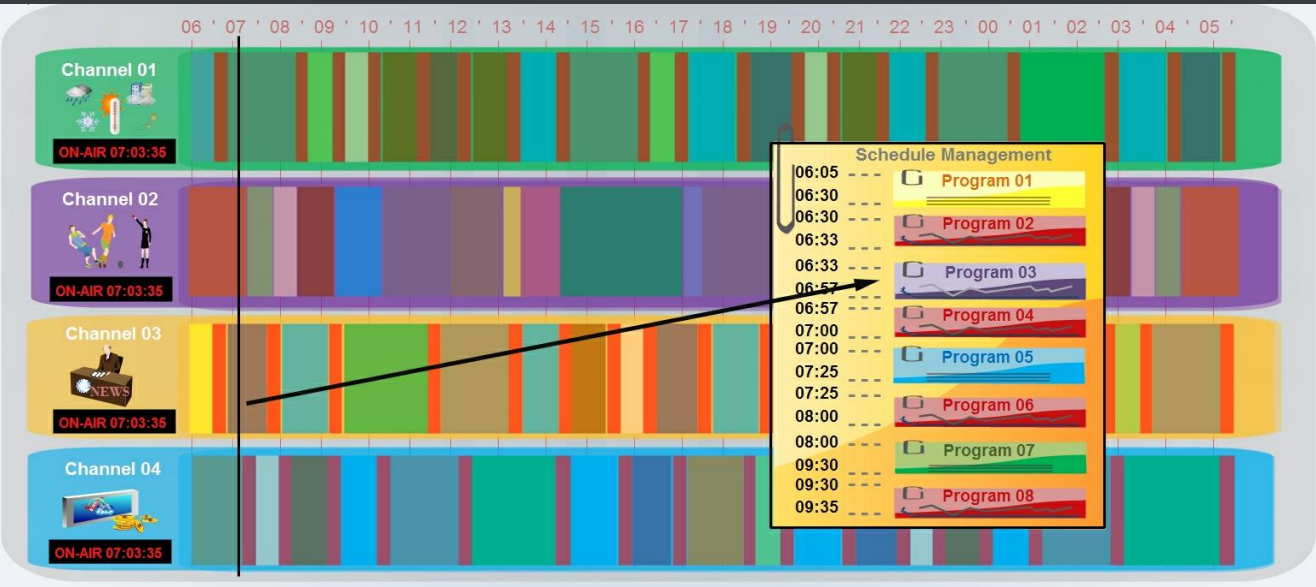
▼ 5.10. Multichannel View: Global scheduling management

Etere Multichannel View is a utility that allows stations with more than one channel to have a global view of all schedules, allowing the possibility in real time to make changes to the schedule, or in any case to see what is on air on all the channels at any given moment. A very intuitive and easy to use interface provides an overview on the composition of playlists of multiple channels:



The Multichannel View interface shows the programming timeline of all stations; rows represent schedules and colors corresponds to event types (e.g. news, spot, etc.), while the channel logo on the left is to indicate whom the schedule belongs to. All displayed schedules can be opened with just one click, then, they can be edited and events searched (and also replaced).

▼ 5.10.1. Emergency events insertion

This key feature allows to easily inserting an event into a specific position within the broadcast schedule, even across multiple stations. In order to use this function just follow the next procedure:

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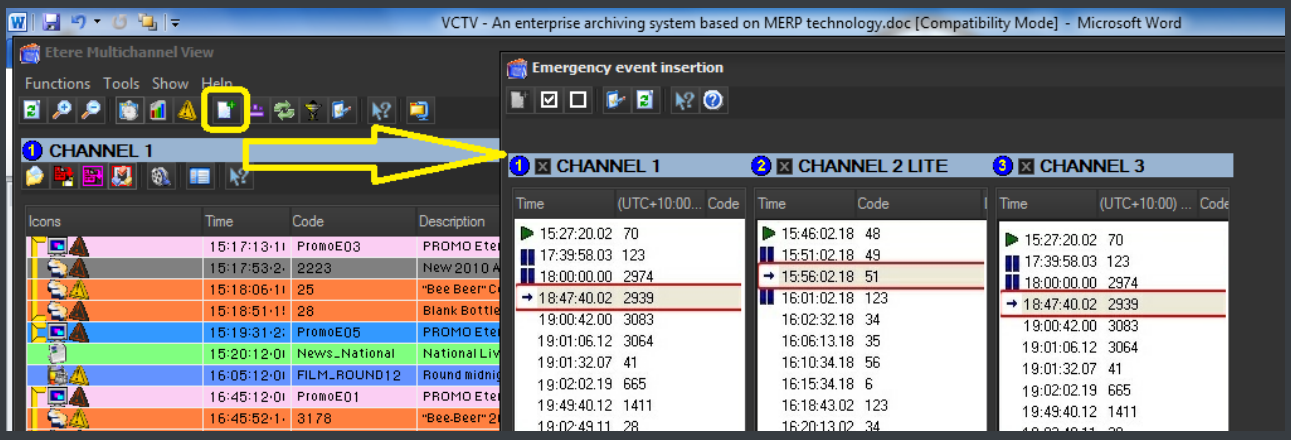
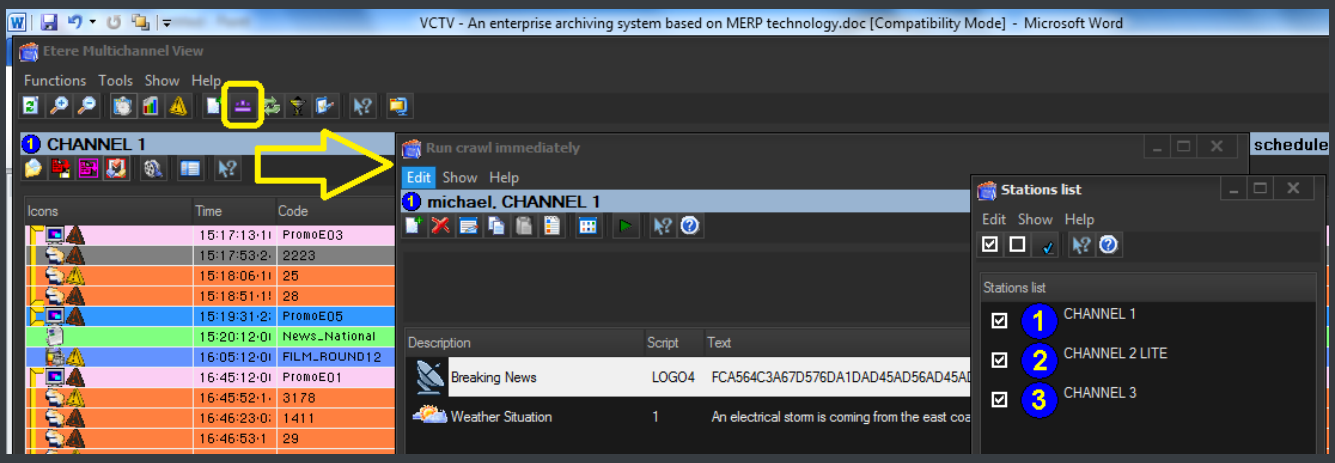


▼ 5.10.2. Run crawls immediately

This function allows sending a command to the **Etere STMan** module a command indicating that a certain crawl script must be executed immediately on a preset device. By using this feature, it will be possible to send last-minute crawls over multiple channels to, for example, inform about a breaking weather situation:



▼ 5.10.3. Remote panel

A **remote panel** allows displaying a simple interface for monitoring the automations related to each playlist as well as controlling the switching between main and clone automations (if available).

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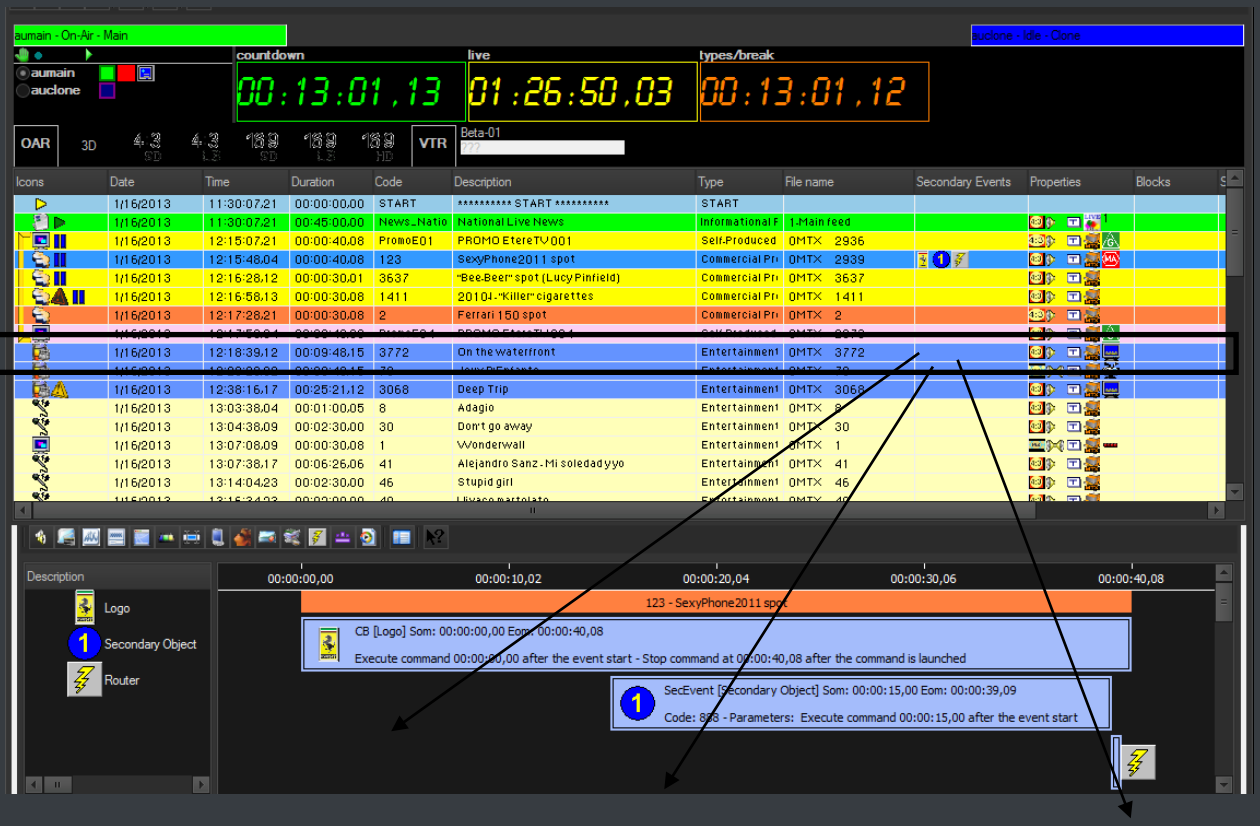
▼ 5.11. Automation: Reliable playout system

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.:



▼ 5.11.1. 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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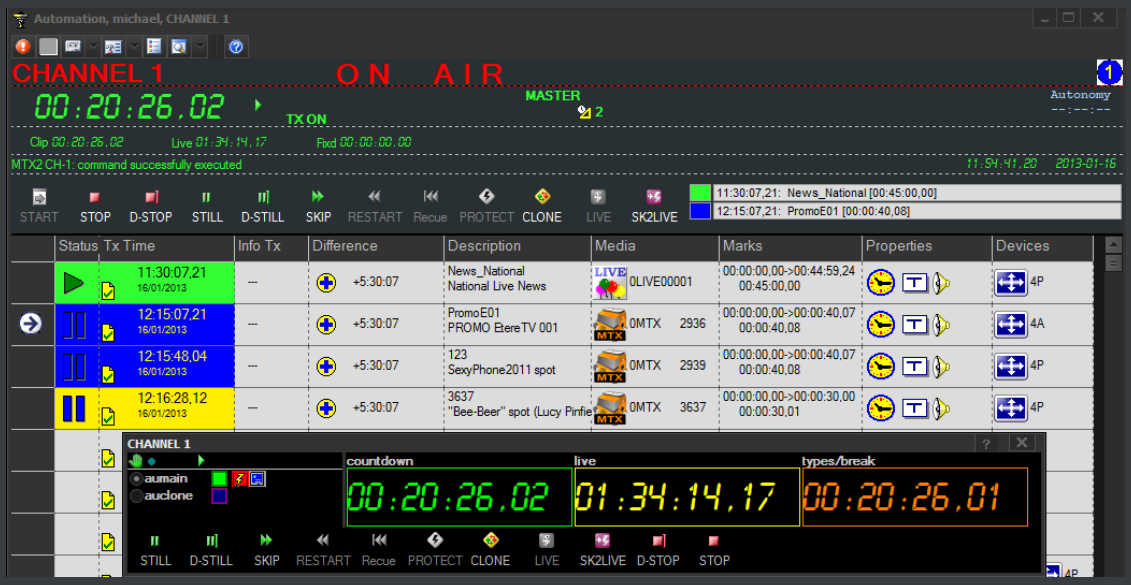
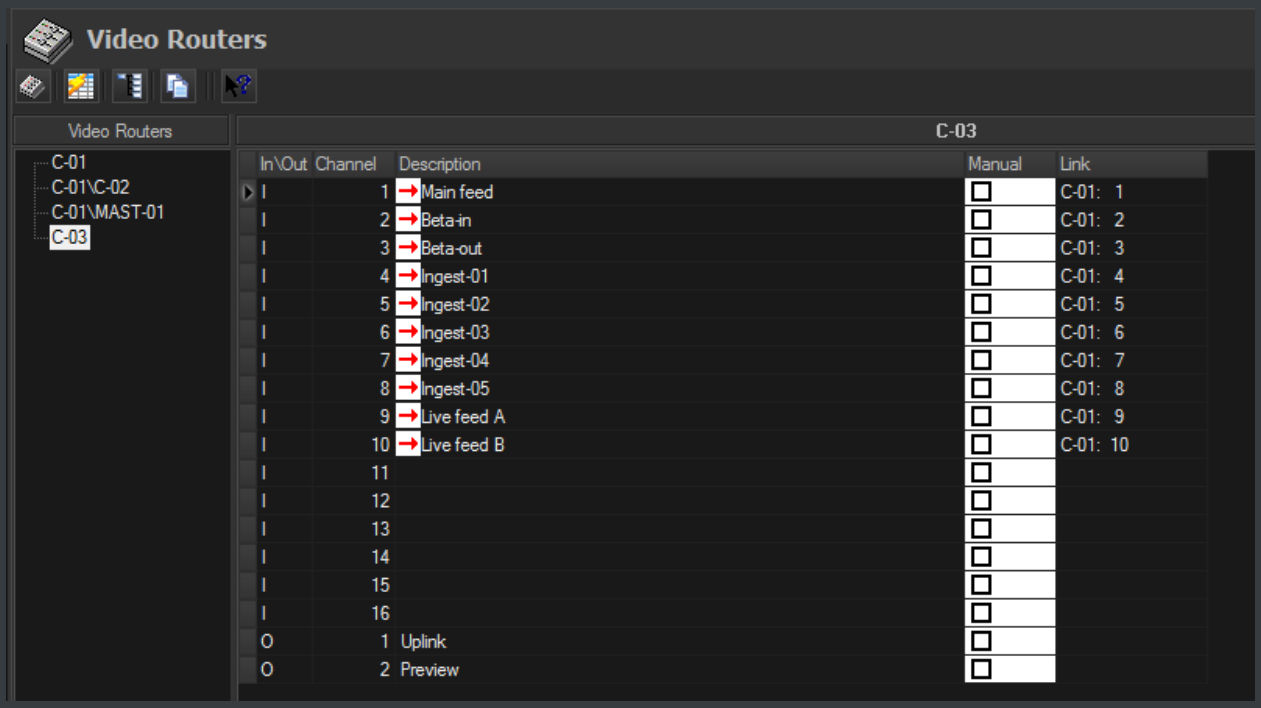


Additionally, Etere allows managing one video router per automation, being possible to create links between routers so when a channel is switched in the Main Router; the equivalent channel is also switched in the Backup Router:



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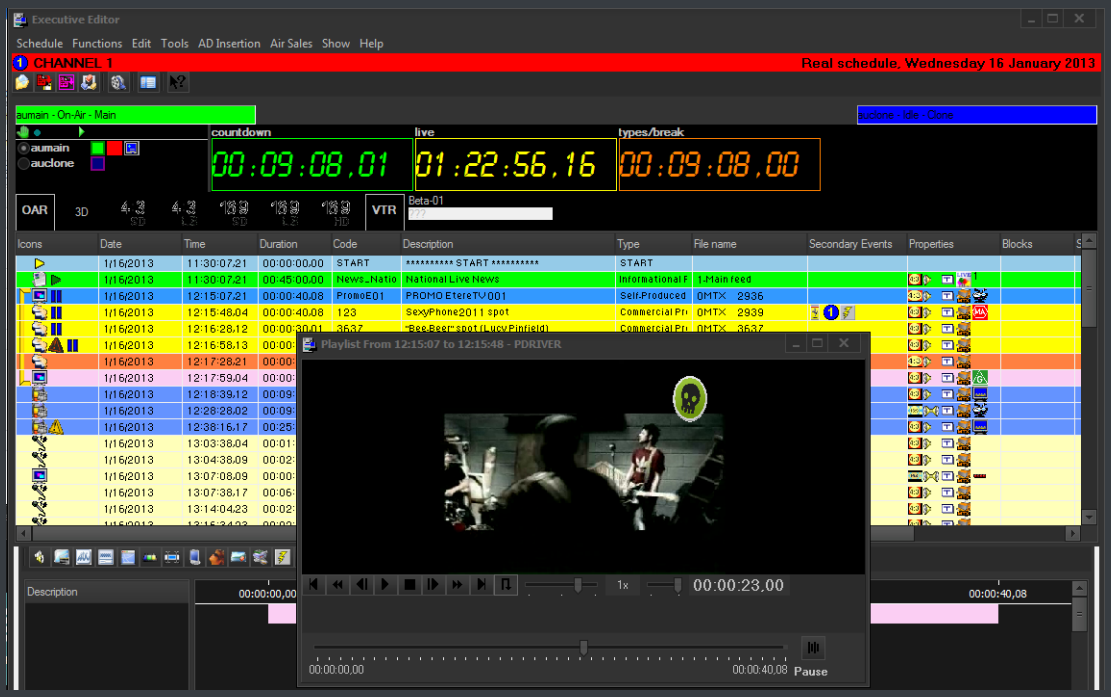
▼ 5.11.2. Secondary events manager

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:



▼ 5.11.3. 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
[  APP   ] [2010-04-28 15:09:20.21AUTOMATION RESET
[  APP   ] [2010-04-28 15:10:31.05AUTOMATION IS ONAIR
[  CLIP  ] [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
[  CLIP  ] [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
[  CLIP  ] [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
[  CLIP  ] [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
[  APP   ] [2010-04-28 16.48.13.20PLAYOUT COMMAND: STILL
[  APP   ] [2010-04-28 16.48.14.19PLAYOUT COMMAND: RESTART_FROM_CURRENT
[  APP   ] [2010-04-28 16.48.20.07PLAYOUT COMMAND: STILL
[  APP   ] [2010-04-28 16.48.23.01PLAYOUT COMMAND: RESTART_FROM_NEXT
[  CLIP  ] [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
[  CLIP  ] [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
[  CLIP  ] [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
[  APP   ] [2010-04-28 16:55:16.11PLAYOUT COMMAND: SKIP
[  CLIP  ] [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
[  CLIP  ] [2010-04-28 16.57.46.19Y, 100000018164, 12  , 0LIVE00001    , Meloldy01 , T, 00.00.00.00, 00.00.14.24, 00.00.14.15
[  APP   ] [2010-04-28 16.59.53.01PLAYOUT COMMAND: EMERGENCY_LIVE_START
[  APP   ] [2010-04-28 17.05.57.05PLAYOUT COMMAND: EMERGENCY_LIVE_END
[  APP   ] [2010-04-28 17:15:35.06AUTOMATION STOP
Log Closed
```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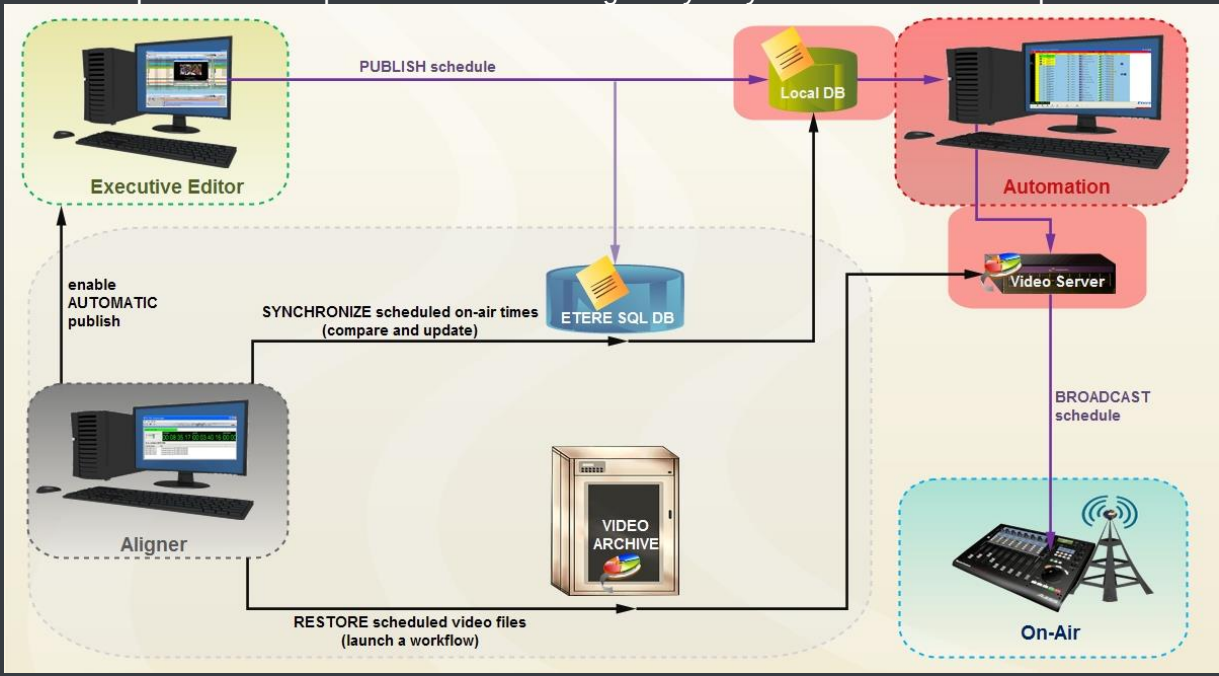
▼ 5.11.4. Synchronized broadcast

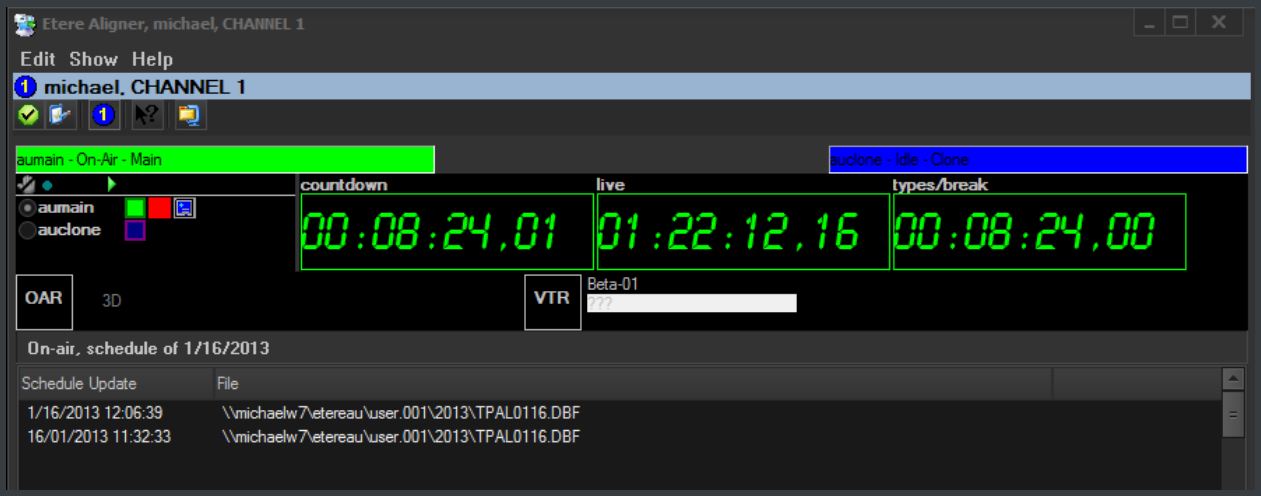
Aligner is the application that maintains the published schedule constantly synchronized, it aligns the independent automation schedule with the Etere stored schedule, this operation is very important for the broadcast process since published on-air timings may vary and will need to be updated:



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

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

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



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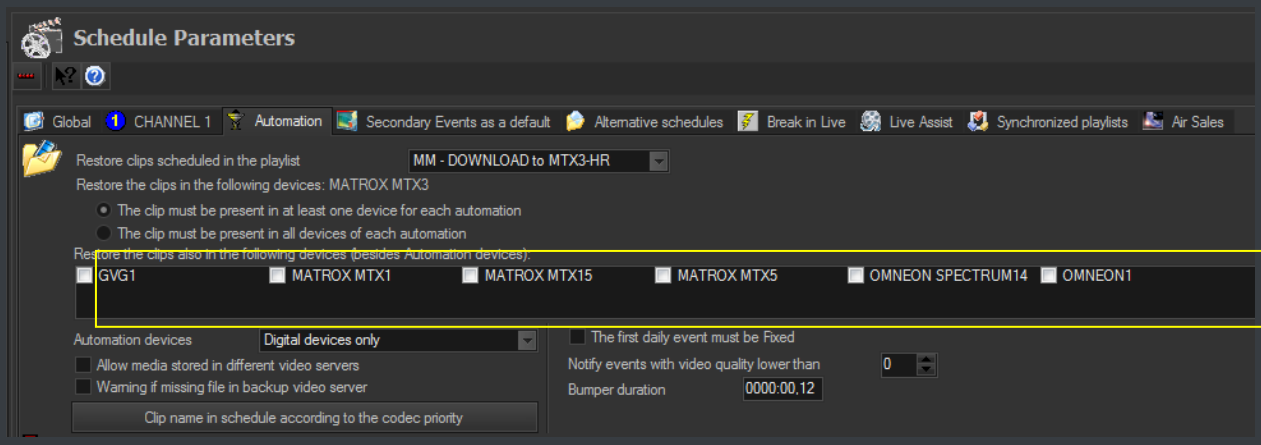
Moreover, **Etere Aligner** allows restoring via workflow all those video files associated to scheduled events and which are missing in the remote archive, either manually or automatically:



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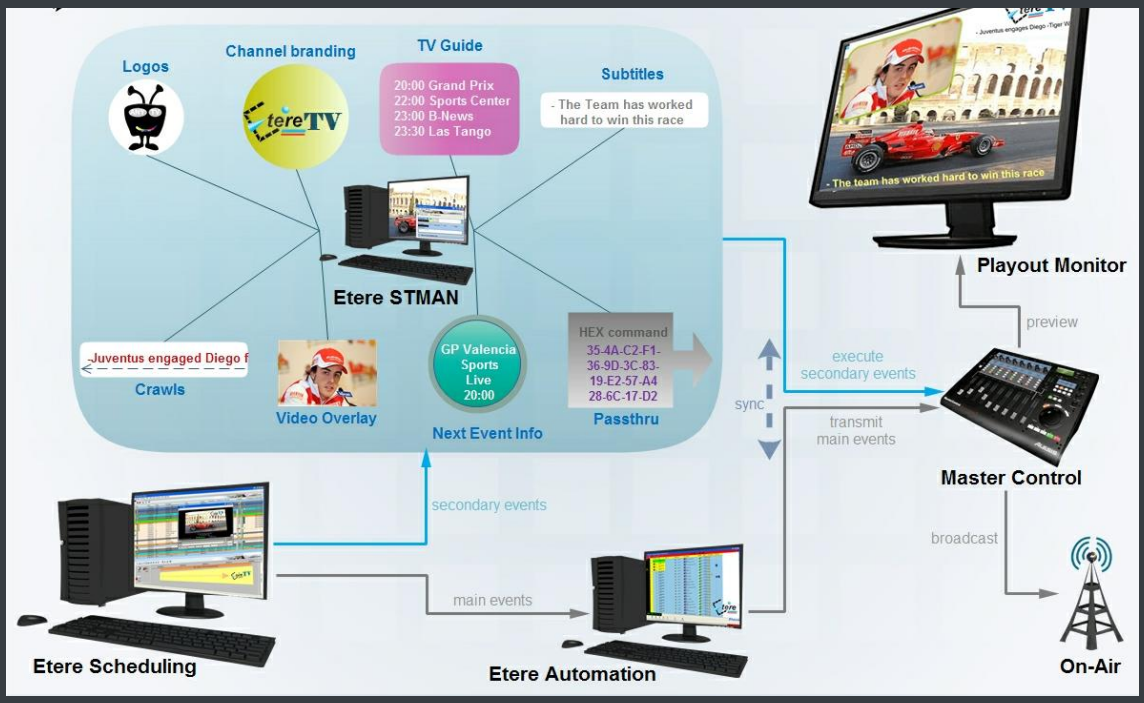
▼ 5.12. STMAN: Secondary objects management

Etere STMan is the application that provides broadcasters with a multi-layer and real-time management of secondary objects associated to scheduled events, these objects includes graphical elements (e.g.: logos, crawls, subtitles, channel branding, etc) and device commands (e.g.: script, hex pass-through, channel switch, etc).

The **STMan** module will be connected to the main distributed Etere system to execute specific actions each time it detects that a scheduled event has secondary objects linked to it. The diagram below clearly illustrates how Etere uses STMan to execute secondary events associated to scheduled events during a synchronized playout:



Etere combines all the above mentioned features into a single module able to manage all graphical features including:

- **Secondary events**, send information about current/next scheduled events to a subtitlers,
- **Passthru commands**, send hexadecimal commands to devices,
- **Secondary video player**, overlay a video onto main events,
- **Subtitles management**, manage subtitles associated to scheduled events,
- **Channel Branding**), manage graphics associated to events (e.g.: network idents, coming up)
- **TV Guide**, to promote the next events on the schedule,
- **Next Event Runtime** (coming next), to check all the information about the next event and secondary events associated,
- And more.

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▼ 6. KEY BENEFITS

With the new **ETERE** system, **VTVCab** will benefit from all the advantages derived from **Etere MERP**, present and future **operational benefits** are following mentioned:

- ✓ **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

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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 25 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.

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.

Etere
a consistent system

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