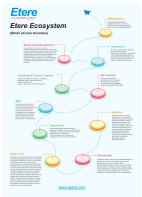# Work Order Management

The Work Order management is a feature of the Etere's Ecosystem solution, it allows issuing and developing work orders to track all costs associated with the media management process; thus providing full control over the media management process along with real-time work in progress information.

Etere Ecosystem

Workflow designer subtitles

Asset Form Preview

Etere reporting service

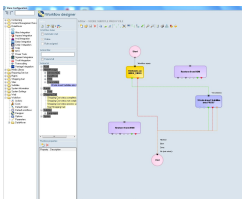For more information, please refer to the attachment.

Introduction
In the broadcast, as in any other industry, work orders are the tool that permits stations to virtually manage all operations actually involved in the management of their assets; Etere's Work Order Management solution is designed to automate the process of entering and completing work orders used by the station as well as tracking all their phases, status and results.

Etere Ecosystem is the complete solution for managing all work-order related information and activities from opening work orders and managing work-in-process operations through invoicing and reporting assets.

As shown in the figure above, work orders are based on a custom structure and are fully integrated into the workflow management, being possible to create user-defined work orders and include them in automated workflows which current status can be consulted at any time in real-time.
This paper illustrates how Etere allows stations to not only manage their assets but also the work orders implied in said management, providing them with a truly Work Order and Asset Management solution, from their generation to their invoicing.

Overall Description
The Work Order management is a feature of the Etere's Ecosystem solution, it allows issuing and developing work orders to track all costs associated with the media management process; thus providing full control over the media management process along with real-time work in progress information.

Etere's Work Orders Management is a key function of Etere Ecosystem that provides broadcasters, media companies and content providers with a comprehensive and effective management of asset work orders used internally by the station, which are linked to assets via workflow, and to billing through invoices.

Between the main features of Etere's Work Orders Management the following can be mentioned:
■ Work orders can be related to any asset-related operation such as subtitles generation, promo creation, tape copying, media editing, audio dubbing, etc.
■ A proper structure specifies how work orders will be measured according to their nature, that is, in time (e.g.: video editing, promo creation), in units (e.g.: tape copying) or directly in money (e.g.: external subtitling).
■ Authenticated users can search for work orders, take them in charge and compile their related data (e.g.: cost, time, etc).

Etere manages work orders in conjunction with the invoicing module, such in a way that all processes required to produce media content can be automatically taken from work orders and merged on the appropriate invoice, thus allowing generating from each work order all the required paperwork to move processes through the station's workflow.

Moreover, accessing work order's informative reports, stations will be able to analyze labor costs, and examine any variance from normal values as well as
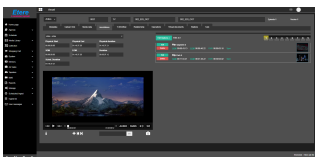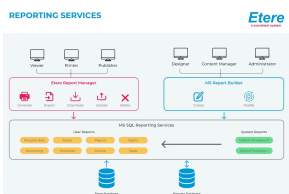
consulting open/pending/closed work orders that will permit to control the inventory.

Using Work Orders
Work Orders are managed via workflow, for each work order, an action (e.g.: subtitles generation) must be created within the Etere system using a "work order template", this action will be able to be subsequently included in one or more workflows (e.g.: content check, link content, etc) on which the generation of said work order is required. The entire Work Orders management process can be summarized in the following steps:

3.1. Structure creation
The first thing to do before start managing work orders within Etere, consist in defining a suited costs structure based on user-defined templates enhanced with key information (e.g.: type, value, measuring and invoicing) about each process. The table below shows the Costs section on which said structure is defined handling for each cost entry the following data:
■ Description: A brief text describing to which process the cost is related.
■ Unit type: Indicates if the cost is related to time, money or quantity.
■ Unit cost: It's simply the cost value, measured in base of the cost type.
■ Unit size: If the unit type is set to time, specify the related measurement unit (i.e. hours).
■ To invoice: Enabled in case the cost will be considered for invoicing purposes.

As shown in the figure above, cost templates can include estimated costs to provide added convenience to quickly create standard work order actions without compiling this data; in this way operators will have to simply select the cost to be applied to a certain work order, being however possible to update this information later.

3.2. Workflow definition
Work orders are represented within the Etere system as workflow actions, these actions can be created by using existing templates which can be either modified or used as-is. As shown in the figure below, work order actions can be defined including a wide range of information including the following key parameters:
■ Name: It is the friendly name given to the work order (e.g.: subtitling).
■ Description: A brief text that brings additional information on the scope of the action.
■ Category: Use it to indicate, for example, the type of process to which the work order is related.
■ Sub-Category: Use it to define a further classification within categories (e.g.: internal, external, etc).
■ Back color: Work orders can have custom colors that will easy their recognition.
■ Cost: Select the cost template (explained in the previous chapter) that will be applied to the work order. The cost is formed by the type (i.e.: time, money, quantity), the unit cost (i.e.: its expected value) and the measurement unit (i.e.: minutes, hours, days, etc).
■ States: Set here the possible results that the work order could have (e.g.: pending, completed, failed, etc). States can be created either by selecting their number and naming them manually or by searching for a SMPTE metadata field already configured with the proper states:

The just created work order action will be stored in the Etere's system and will be made available (according to its category and subcategory) under the Actions Editor section, from which it will be possible to view and modify it before inserting it into a workflow:

Work orders actions which are ready to be used within workflows can be easily inserted within them through a friendly interface for designing workflows:

Workflows can be attached in a fully customized way, being possible to launch them for either only one asset or multiple assets previously searched, filtered and selected:

Once attached and launched, the workflow will be automatically stopped when its execution sequence arrives to the work-order action, and will remain stopped at that point until an operator moves it forward manually (i.e.: undertake the work order, compile it and set a result):

3.3. Work Order Management
Once the work order has been generated (i.e.: launched via workflow) the user designed to perform the related operation will be able to search for either:
■ All assets attached to a workflow action which is the work order in question,
■ All assets related to a worksheet which is available, undertaken or all of them.

Please note that operators will be allowed to search and compile only those work orders for which they are specifically authorized to manage since work orders required specific rights. Work orders generated by the station and that need to be viewed, compiled or closed, can be managed from the Asset Form's Worksheet section, the dedicated section provided by Etere to view the actual work order and perform any of the associated tasks. As usual for the major part of the Ecosystem features, managing work orders is possible from both, the Etere's desktop-client interface and the Etere's web-based interface; both of them will allow operators to perform the following procedure:
i. Undertake the asset's work order by pressing the flag icon which can be:
■ Green (hold, that is, not owned by any user),
■ Yellow (assigned, that is, owned by the current user),
■ Red (denied, that is, owned by another user).
ii. Set the cost (money, time or quantity) and invoicing rule (i.e.: to invoice or not to invoice).
iii. Enter a brief note regarding the work order processing (e.g.: problems, extra info, etc).
iv. Set the output result (e.g.: completed, failed, missing media, etc).

3.4. Automatic Invoicing
Etere provides a suite of products that allows broadcasters, media companies and content providers to build a flexible and scalable system to manage their entire media production process; the management of work orders requires that individual assets processes are billed for operations (e.g.: subtitling, tape copying, promo creation, etc) generated by work orders; this by providing the following invoicing features:
■ Each work order can be assigned to a specific asset and owner;
■ The history of all work orders for each owner is saved;
■ Each asset in each unit can have an individual repair history;
■ Fully integrated with Etere's invoicing system;
■ When a work order is closed, its invoicing is automatically calculated.

Thanks to Etere's integrated architecture, stations are able to perform the most delicate step of the work orders management, the invoicing process; Etere Invoicing allows to reconcile the costs derived from work orders (which 'to invoice' flag has been enabled) with the accounting department, generating invoices containing key information including:
■ Station contact data,
■ Person in charge,
■ Payment conditions,
■ Related asset information,
■ Work order number and cost,
■ Additional comments

Broadcast stations can use generated invoices either internally to monitor the costs of their media management process or externally to issue, track and settle real invoices to the entities involved in said management (e.g.: editing agency, dubbing studio, etc).

3.5. Reporting consultation
The Etere's work order management feature is designed to track all assets used by the station including their production costs; all work orders for a particular asset can be viewed to provide a management history for every asset.

All work orders generated by the station, which are either open or closed, can be consulted from Etere Reports, the module that permit stations to easily generate work-order reports that will permit the station to keep track of, for example:
■ The costs of a certain type of work order (e.g.: tape copying) performed by a specific user (e.g.: a dubbing studio),
■ The annual cost of a certain type of work order (e.g.: subtitling), with a further comparison against other years (i.e.: last 30, 60, 90 and over days),
■ The detailed costs derived from all the work orders (e.g.: video editing, promo creation, tape copying, audio dubbing, subtitling, etc) of a certain period (e.g.: current month).
■ All pending invoices issued either for a specific type of work orders or for a certain time interval.

Moreover, another Etere's Ecosystem feature: Reporting Services will enable stations to design custom reports; easily designed and accurately managed though a reporting engine that allows previewing, print and export any report under a user-friendly 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 are stored in a dedicated Microsoft SQL server.

4. KEY BENEFITS
This paper has described how the implementation of a flexible and scalable Etere Ecosystem system is able to manage the entire media production process of a broadcast station including the work orders related to the individual management of assets; feature that will derive in a large number of operational benefits and advantages including:
■ Complete Integration: Work Orders are fully integrated with the rest of Etere to cover almost all processes related to the management of assets and thus assemble a truly Ecosystem solution able to control each single operation of the complex broadcast chain with the accuracy that only a workflow-based solution is capable to provide.
■ Flexible Structure: Work Orders are not all the same, that's why Etere allows crating custom templates featuring specific costs (i.e.: money, time, quantity) and processing states (i.e.: pending, open, closed, etc) for a more suitable and efficient management.
■ Production Billing: Work orders are related to specific assets which can be invoiced by Etere including all configured operations and custom information, thus providing the basis for order tracking, cost analysis and general assets monitoring documentation.
■ Real-time Monitoring: Work orders information is available instantly and accurately at any time, allowing a real-time valuation and track of costs to, for example, comparing planned work order costs with actual costs.
■ Detailed Information: Work Orders includes, besides their type, cost and invoicing status, also additional information that can be used to simplify the paperwork communication between departments.

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