

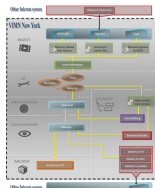
VIMN: A Cloud-based and Workflow Driven Solution for a Smooth Management of Internal Shared Content

This paper is aimed to provide a detailed specification on the key Etere features that will enable VIMN to smoothly manage its internal shared content from end-to-end, from the initial creation of placeholders to final delivery of localized compliant content.

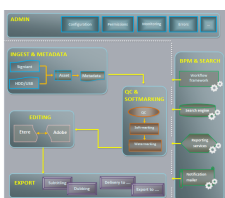
VIACOM INTERNATIONAL
MEDIA NETWORKS

BET* COMED CENTRAL* Paramount* VIVA* nickelodeon

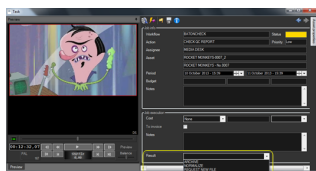
Viacom



Other Federate System



Viacom Workflow



Task View

OVERVIEW AND PROPOSAL DIFFERENTIATORS

Viacom International Media Networks (VIMN) is the international division of Viacom, the network that oversees the production, broadcasting and promotion of key Viacom brands including MTV, BET, Comed Central, Paramount, VIVA and Nickelodeon, which are viewed by 700 million households across the world available in 30 languages via 200 locally programmed and operated TV channels and more than 550 digital media properties. VIMN has headquarters in New York, London and Warsaw; other international offices are located in Amsterdam, Berlin, Paris, Singapore, Stockholm, and Sydney; whilst regional offices are found in Athens, Budapest, Buenos Aires, Dublin, Madrid, Miami, Milan, Sao Paolo, Seoul, Tel-Aviv, Tokyo and Zagreb.

The international shared content intended to be aired on international VIMN networks -after US premiere- is processed on the core facilities located in New York, where the international content supply chain starts, embracing creation, ingest, preparation, transcoding, localization and delivery of compliant content.

f6.3.3.5.1

ETERE is able to provide VIMN with a cloud-based and workflow-driven solution able to improve the international media activity of the company thanks to a centralized and integrated cloud approach that perfectly fits the “hub and spoke” distribution model used by VIMN. A set of tailored workflows will permit planning and tracking every single step of the MAM process in a 100% versatile and flexible manner, enabling a high level of scalability to encompass future changes in the global chain.

This paper is aimed to provide a detailed specification on the key Etere features that will enable VIMN to smoothly manage its internal shared content from end-to-end, from the initial creation of placeholders to final delivery of localized compliant content. The use of workflow-based technology will permit VIMN to significantly improve its international content supply chain by introducing the following enterprise capabilities:

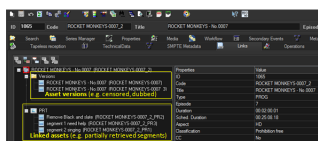
Key capabilities:

- Intelligent and tailored workflows which faithfully reflects company activities
- Clear abstraction of tasks with custom actions, results, roles and rights
- Detailed logging and monitoring of all manual and automatic tasks
- Scalability for including/modifying custom workflows and tasks at any time
- Highly automated management of media mastering and localization operations

SUMMARY OF UNDERSTANDING OF SCOPE & ABILITY TO MEET VIACOM REQUIREMENTS

The international content supply chain will be improved through the use of file-based workflows accurately designed to abstract the single operations involved in the main process, including both automatic actions performed by Etere (or integrated third-parties) and manual actions requiring operators interventions through the completion of tasks.

In this chapter will be provided a point-by-point explanation on how Etere will fulfill the specific requirements requested by VIMN. The following diagram illustrates the



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organization of topics covered in this chapter:

INGEST AND METADATA

The Etere Media Library will enable authorized users forming part of the Editorial Team to create placeholders for international shared content before receiving material, this, in a share point site. Creating a new asset requires specifying a minimum data:

After the placeholder has been created, the Editorial Team will be enabled to immediately set the “Global ID” metadata that globally identifies the asset in the federate system.

Internal users will be automatically notified about the availability of the new asset, thus making them able to start required tasks launching specific workflows.

It's worth mentioning that the workflow-based management implemented by Etere will allow having a truly multiformat archive enable to deliver media in the right format. As soon as a production master is ingested, the ingest workflow triggers the transcoding to NTSC master, PAL master and Lowres proxy.

6.3.3.1.2 How does content look coming into the system from other parties (QC house, language houses)?

Tracking the progress of operations being performed by vendors will be possible through the status of the related workflow and specific SMPTE metadata (e.g. Completion status, Completion time, etc.), modifying said metadata - either manually or via XML- will be allowed for VIMN partners (e.g. tape ingest, QC, Subtitling) to detail the current progress status.

6.3.3.1.3 What does it look like when an asset and component (e.g. language track) arrives?

Every time a component arrives into Etere from vendors, the pertinent user groups are automatically notified so they can open the Media Library and see under the “Media” tab the corresponding files:

6.3.3.1.4 How are the different elements displayed?

All components (e.g. hires, lowres, audio, subtitles, etc.) linked to assets are displayed in the Media Library.

6.3.3.1.5 How do I see a collated view of all metadata available – due dates, publishing dates, languaging dates?

All placeholders have an SMPTE metadata section containing all the metadata needed for their management, for a better management said metadata is organized into different views according to their scope:

Besides for placeholders, metadata is also managed for each component part (file):

A key feature allows to take automatic decisions on workflows based on the content of asset's metadata; for instance, the “Subtitle French” (e.g. not requested, requested, delivered, received, positive QC, negative QC, etc.) will indicate if a certain asset needs or not requesting subtitles to a vendor.

6.3.3.1.6 Demonstrate relationships between assets – parent/child

The parent-child structure used by Etere for managing assets allows having multiple placeholders (e.g. component parts) related to the same placeholder (e.g. episode). Adding metadata (e.g. localized) and files (e.g. images) to placeholders are possible for parent and children, it can be done jumping between them.

Moving between versions and linked assets is easy and quick, it only needs one click.

Additionally, it's worth mentioning that the structure levels needed by VIMN for its placeholders will be supported according to the following hierarchy:

- Franchise is managed as a metadata exclusively available for Series, Special

and Movies

- Series are managed as container of multiple episodes related to a specific season, this, from the Series Manager
- Specials, Movies and Episodes are managed as single assets from the Media Library
- Variations made for Specials, Movies and Episodes are managed as “versions”, they are created either manually or automatically (via workflow)

6.3.3.2 QC AND SOFTMARKING

How do I preview and QC content as well as individual components (e.g. subtitle or language track) including SCC/STL/PAC/TTML

Etere provides multiple ways for previewing media depending on the browsing scope, for instance:

- **External player:** HiRes media can be opened using the external player (e.g. VLC) set in the Windows system as the default application for opening the requested file type (e.g. MXF)
- **Video server:** HiRes media stored on video servers can be directly played in a professional built-in player to allow, for instance, previewing it in an external monitor
- **Subtitles:** Subtitled media can be previewed in the “Subtitles Tool”, which also allows importing and exporting subtitles as well as manually editing

It's worth mentioning that choosing the audio language to be played during the preview is possible for multilanguage media:

6.3.3.2.2 Show me how a baton report can trigger a workflow

Once ingested (via Signiant or HardDisk from internal studios, partners and other 3rd party studios) a file integrity check and validate will be automatically performed against VIMN's specifications using an automated Baton QC managed via workflow:

The Baton QC will be also automatically performed for for “mastered” files or derivatives (ie subtitle file, Language customized video master, M & E track) received into the system. When the auto QC is completed, Baton's technical information is saved into Etere as:

- PDF document in the asset's virtual documents
- An asset EDL containing timecode marks to, for instance, transcoding media

If the Baton QC fails, a task will be assigned to a “Supervisor QC” (who will be notified) to investigate the issue using HiRes QC and engage with the partner who submitted the content (a new version will be created for the content)

Once the QC process is completed, MAM users specified in the workflow are automatically alerted about the availability of the component part (based on a SMPTE metadata). Baton QC operations can be tracked from the Workflow Monitor, displaying relevant information:

6.3.3.2.3 How do I do soft-marking?

The NY ICM team and External post-production partners will be enabled to add marks into an asset EDL (up to nine different schemas) to match specific break patterns, this, can be done on a new asset version containing all EDL copied from the master asset

The international master will be marked up from the Etere Media Library, inserting technical parts (e.g. black cuts) and editorial content related parts (e.g. bumper, intro, outro, etc.) to be subsequently conformed.

One or all EDL schemas can be consulted generating a “cue sheet” report

It's worth mentioning that EDL mark points set for the international master will be inherited by subsequently added derivatives including frame rate converted versions (PAL/NTSC)

6.3.3.2.4 What does multiple levels of soft-marking look like?

Etere allows managing up to 9 different EDL for each asset; this key feature allows storing different schemas separately, for instance:

6.3.3.2.5 How do I apply batch soft-marking to multiple assets (VOD deal – always cut out the blacks, precaps & recaps)

The ability of Etere Media Library to launch workflows for multiple assets allows performing a soft-marking for several assets with just one click, this, by selecting them from the search results and choosing the pertinent conforming workflow:

The selected conforming workflow will be started for all selected assets:

A new version will be created for each requested asset; versions will contain the conformed file (useful information will be indicated):

The capability to create on-the-fly derivatives (by transcoding the master asset will be possible through the use of specific workflows) will eliminate the need to keep all derivatives generated along the management process (they can be automatically deleted based on their oldness).

6.3.3.2.6 Mark up a 23.98 file and demonstrate those markers can be shared across frame-rate converted derivatives

Etere is able to preview media (e.g. frame rate converted PAL/NTSC versions) displaying the timecode in both, PAL and NTSC format:

Additionally, displaying EDL schemas in different video standards (PAL, NTSC) is possible from the Media Library:

6.3.3.3 EXPORT

6.3.3.3.1 How does the shopping cart and export feature look?

Once international content is ready for being supplied, the “Export to federate” workflow is launched to publish the asset on other federate sites and notify subscribed users about its availability for request.

Published assets can be retrieved (pulled) by users of remote sites; for instance, a Paris user can search for an asset stored in Singapore and launch a workflow to request it (the launched workflow will trigger in the remote system a workflow that will make the file locally available for the requester e.g. on a shared FTP path):

Alternatively, international content can be directly delivered (pushed) through a set of workflows specific for each vendor as explained in the “Custom delivery orders” chapter.

6.3.3.3.2 Demonstrate remapping/muxing capabilities on export. How can I build an order of multiple assets mixing and matching frame rates & language(s)

A wide set of delivery workflows are provided to deliver assets to specific targets following specific criteria (e.g. Pal video with only M&E, NTSC with only English, production master with all audio tracks etc.). Delivery of international content is controlled through a special set of SMPTE metadata (e.g. Delivery VIMN):

As shown above, every time a certain delivery is requested (e.g. Amsterdam) its related metadata is set to “true” and once the delivery is completed a metadata is set with the date and time.

Once requested, deliveries can be launched either individually or grouped, just as described below:

Individual: Launching one of the available delivery workflows (e.g. Delivery to Amsterdam, Delivery to London, etc.) will make only the requested delivery to be automatically performed:

■ **Individual:** Launching one of the available delivery workflows (e.g. Delivery to Amsterdam, Delivery to London, etc.) will make only the requested delivery to be automatically performed

■ **Group:** Launching only one workflow (e.g. Delivery VIMN) can automatically

trigger all the deliveries for which a request has been received (i.e. for which the related metadata is compiled). Creating workflows that mix different deliveries is an easy task that can significantly speed-up the delivery process.

■ It's worth mentioning that in case a delivery metadata is set for an asset, future asset versions will inherit this property so requesting the file will be always possible at any time.

6.3.3.3 How can I see who ordered what?

(Requests monitoring)

Delivery orders requested by federate sites (e.g. Amsterdam) can be easily monitored from the Workflow Monitoring module, filtering the related delivery workflow (e.g. Delivery to AMS) and consulting their info:

6.3.3.4 How can I view the history of an asset, where is been sent

All actions performed in Etere are recorded, this make available to consult almost any particular including:

■ **Asset operation logs:** All operations performed for asses (e.g. copy, transcode, edit, etc.) are logged under the "Operations" tab of the Media Library

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

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

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

6.3.3.5 How do I choose which "version" of the soft-marking to export?

The international master will be marked up from the Etere Media Library, inserting technical parts (e.g. black cuts) and editorial content related parts (e.g. bumper, intro, outro, etc.) will be conformed according to custom conforming profiles including head and tail segments as well as dedicated transcoding presets.

Custom conforming actions can created to conform a specific EDL schema using a given conforming profile on either a new asset child, asset version or standalone asset.

Once created, conforming actions can be included within workflows to execute the required tasks for which they have been configured.

6.3.3.6 Create/maintain the folder structure of complex assets on export

The Media Library provides a "project folder import" function allows importing all files within a local/network directory into a metadvice using unique filenames and conserving their original information (path, sub-path and filename).

As shown above, multiple files belonging to a project can be loaded in the Etere system as a single metafile, keeping and moving all them together when requested:

Additionally, a key feature allows exporting projects restoring their original structure (i.e. path, sub-path, filename) using a "Multistep Copy DataMover" action:

A detailed report on all imported files can be generated at any time making right-click -under the Media tab-on the metafile and selecting the "Print Metafile Properties" function:

6.3.3.4 BPM AND SEARCH

6.3.3.4.1 Demonstrate BPM engine (how to build workflows and implement business intelligence?)

Etere provides a highly intuitive and user-friendly interface for the design and implementation of workflows, creating your own workflow is easy as dragging and dropping action blocks.

A wide number of action types are available to automate the "intelligent decision

taking” of workflows, it’s possible to use, for instance:

- Take an action based on metadata
- Take an action based on asset type
- Take an action based on enabled station
- Take an action based on storage metadvice

Besides to the several actions provided by default, users can create a wide number of custom actions to meet their actual needs; new actions can be created as:

- **DataMover:** Actions created for copying, transcoding, Baton integration, Signiant integration and MTX
- **Content management:** Actions created for media check, retrieve and regeneration purposes
- **Template-based:** Actions created based on of the 60 different templates available in the system

6.3.3.4.2 What are the notification levels (e.g. informing users order is ready, asset has arrived, etc.)?

The workflow framework of Etere allows including so many notification actions as required by a workflow, notifications are customized for specific receivers (e.g. MediaDesk, MTS, etc.) and purposes (media is ready, media is arrived, media error, etc.):

6.3.3.4.3 How can I track the progress of the workflow?

The Etere’s Monitoring Console gives administrator a valuable tool, a robust dashboard for monitoring the status of workflows and directly controlling their execution (e.g. restart failed workflows, abort unwanted instances, etc.). This interface provides useful filters (e.g. workflow, object, status) to list only workflows you are interested to see and a wide set of functions to manage their execution (e.g. show workflow, view log, abort workflow, restart workflow, delete workflow, set priority, clean orphan workflows, etc.):

As shown in the image above, accessing the operations log and sequential flow of all “approval” workflows which are currently waiting for a “content approval” is an easy task.

Moreover, workflow monitoring is also possible from the “Media Library”, where a special filter allows searching for assets matching specific workflow information (e.g. instance, status, action, executor, etc.):

6.3.3.4.4 How can I run reports on an asset or group of assets?

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 through a reporting engine that allows to preview, print and export any report under a user-friendly user interface. Etere Reporting Services integrates a dedicated reports database with the main system database, thus improving the reliability and performance of the system.

Available reports cover all the spectrum of the broadcasting process (assets, orders, events, schedules, etc.) providing, for instance, the following asset-related reports.

- Media library operations (resource manager)
- Devices used space
- Media data logs
- Loudness

Etere Reporting Services is based on SQL Server Reporting Services technology to leverage all key features of a web-based reporting server focused on simplifying the process of creating and editing reports by including a user-friendly interface, modify existing reports, interactive reports, presentation formats and much more.

6.3.3.4.5 Demonstrate search functionality and advanced searches

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

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

Some of the most common filters used for searching assets are

- Unique identification in local system
- Asset identification code
- Brief asset description
- Asset expected length
- Asset type (eg. spot, promo, etc)
- Unique identification in federate system
- Asset source site (local/federate)
- Subtitles of any or a specific language
- Information on asset workflows

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

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

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

6.3.3.4.6 How do integrations with other tools look ie if I am doing a federated search how are the results displayed?

Etere's federated capabilities will permit the station to take full advantage of federated technologies, allowing them to import/export assets between systems such in a way that it will be possible to manage external assets as local ones. Federate sites are interfaced through a web service locally installed; it will allow other sites to remotely manage its assets, workflows and metadevices:

The federate nature of the system will allow remote sites to search for content in the central system (and vice versa), highlighting assets according to their source installation and once retrieved, they can be managed as local assets for almost all intents and purposes (i.e. consultation, workflows, etc.):

Federate assets can be managed through federate workflows and import/export functions. Data managed between federate sites can be easily transferred between them:

6.3.3.5 EDITING

6.3.3.5.1 Demonstrate proxy editing, EDL or integration with editing to

support remote compliance or localization

Compliance operations for international content performed inside VIMN using Adobe Premiere Pro will be integrated into Etere MAM, empowering authenticated users to interactively run faster video editing from the Etere archive across virtually any network.

Our Adobe Premiere extension will give Editing operators with a user-friendly interface to view their assigned tasks, select and take the one to be performed:

Media related to taken tasks will be imported into adobe Premiere:

Once editing is finished, final media will be automatically rendered based on a preset EPR profile (e.g. DV25 MOV 4 Tracks), then, it will be uploaded into the Etere archive:

Once media is uploaded into the archive the task is set as completed and the workflow continue its execution (e.g. notifying availability of the edited version and starting a QC).

It's worth mentioning that asset versions uploaded during editing process will be managed using the Etere's versioning standard, maintaining a parent-child relationship with the master.

6.3.3.6 ADMIN

6.3.3.6.1 Demonstrate security features – restricted views for vendors, inheritance through content hierarchies, user groups, asset collections

Etere provides stations with a “Rights Management” interface 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.

It's worth mentioning that when a new version is created of a placeholder, said version will have the same type (e.g. clip) as the original asset, thus inheriting the restrictions active for it.

6.3.3.6.2 Demonstrate permission levels, how do I set them

Etere allows creating a new rights structure importing groups and users from your organization's MS Active Directory. All groups and users present in the Etere Rights structure can be displayed, allowing to update the Etere Rights structure by synchronizing it against the MS Active Directory. Groups and users will be displayed with a status icon:

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

6.3.3.6.3 Demonstrate how VIMN administrators are self-sufficient e.g. adding new language to system, new metadata fields, create reports, etc.

(Configuration and monitoring)

Administrators (i.e. users granted with a “system admin” right) are able to configure and modify all elements that compose the system. For instance, they are able to:

- Add metadata
- Add languages

- Consult reports
- Add storage metadefices

6.3.3.6.4 What are the levels of watermarking & how do I apply them – rotoscoping/fingerprinting, tagging by user/vendor

The workflow that export video files to subtitle and dubbing agencies will be enabled to automatically watermark the clip (depending on vendor), thus protecting content from unauthorized use. A set of transcoding actions will be automatically executed from within "Managing" workflow to create the proxy files (4:3 or 16:9) required by vendors:

As soon as a production master is prepared (e.g. watermarked) for being sent to subtitling and dubbing agencies, the ICM team will be alerted to proceed with the delivery.

6.3.3.6.5 Describe/show operational and error handling capabilities with integrations of external systems such as encoders, Signiant (parsing errors, trigger workflow based on error etc.)

The tight integration of Etere with major broadcast solutions ensures the integration of existing Signiant systems, allowing to trigger jobs and get updates of progress and status information. Custom "Signiant integration" workflow actions allows requesting -via workflow- the execution of file transfers based on Signiant jobs for files stored in Etere:

As shown above, the workflow action that enables the integration allows configuring all the parameters required for a tight integration including:

- Web service URL: URL on which the Signiant web services is available (i.e. where jobs are managed)
- User: Username for accessing the web service
- Password: Password for authenticating the username in the web service
- Job group: The organization group under which the job falls
- Job: ID of the job the in Signiant system
- Job template: Signiant job template. If this parameter is blank, the existing job will run
- Signiant job template. If this parameter is blank, the existing job will run
- Job template library: Signiant job template library
- Job variables: Set of custom variables to pass to Signiant web service for carrying out the job
- Output filename: The custom name with which files will be named on the target location

Both job variables and output filename parameters are set using the Rules Editor tool, which enables users to freely build custom names (e.g. to name files on their target destinations) combining database references (e.g. Table Fields, SMPTE Metadata) and free text:

Delivery workflows can be easily and quickly triggered by enabled users from the Media Library, just by launching the pertinent workflow:

The status and progress of requested transfers will be traceable -from the Workflow Monitor- that will display all information regarding the delivery action including a progress bar:

Besides from the Workflow Monitor, a detailed report on the delivery workflow can be consulted from the Media Library:

Once the transfer is complete, the new media will appear in the asset's Media tab:

It's worth mentioning that EDT transfers can be also used instead of Signiant transfers to transfer data, workflows are designed to allow an easy switch between both methods:

EDT (Etere Data Transfer) is a technology developed by Etere based on the high-performance data transfer protocol UDT (UDP-based Data Transfer), it uses a

streamlined algorithm capable to utilize all the available WAN bandwidth, making of it the ideal solution for data intensive transfers over high speed wide area networks (it's 7 times faster than FTP).

Etere EDT is included in the Etere FTP server for custom and faster FTP transfers, providing a wide set of parameters (e.g. enabled users, EDT range, etc.) and a detailed log of operations and connected users:

6.3.4 ASSUMPTIONS

The solution provided is intended only software solution, in the proposal is not included any hardware devices or third party software, an additional document is provided in order to declare the hardware necessary to run correctly the system based on the specification of VIMN.

Based on the agreement with Viacom worldwide Etere is intended to provide the full software packages with unlimited ETERE user CAL, in case is necessary to implement the IT based playout system the software to run the Matrox card is included but the hardware with Matrox card must be purchased separately.

In one of the Q/A we assume that the devices or third party software are the following:

- 2 x Tachyon servers
- 2 x Rhozet transcoders
- 2 x Vantage transcoders
- 2 x Baton (AutoQC)
- 1 x Diva, 2 robots, 2 actors and approx. 1000 slots

Etere will provide a system drawing based on the above list of devices, in case is needed to increment the number of devices to be controlled the price will not change but we need to eventually redesign the system drawing (project management task).

6.3.5 PROVIDE A RECOMMENDED GOVERNANCE MODEL AND APPROACH TO QUALITY MANAGEMENT

Based on Etere experience is possible to have multiple governance models. It is difficult to provide governance model if we don't know almost anything about the NY organization, usually this is a task that will be done during the project management session with Etere and VIMN (already quoted for this RFQ).

6.3.6 PROPOSED APPROACH AND TIMELINE

Q4 2013 or Q1 2014 planning and finalizing the project in details Q1 2014 to Q2 2014 deploying the system on site The timeline can vary (faster or slower) depending on the availability of the hardware necessary to deploy the system.

6.3.7 RISKS AND MITIGATION STRATEGIES

Please refer to the Viacom Worldwide agreement