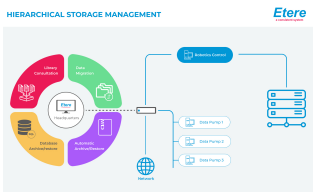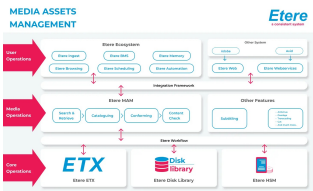# Tricolor TV Case Study

This paper describes the customized Etere solution and its benefits for Russia's leading pay-TV provider, Tricolor TV.

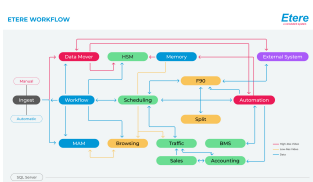HSM Diagram

TricolorTV Logo

Media Asset Management diagram

scheduling integration

Etere Workflow diagram 1

About Tricolor TV

Tricolor TV is a leading Russian pay-TV provider, broadcasting a package of channels to parts of Russia, as well as the territories of the Siberia, Ural and Far Eastern districts. It is the largest direct-to-home provider based in Saint-Petersburg, Russia. The company specializes in cutting-edge technologies and the most advanced standards in TV broadcasting that improves the quality of Television viewing, including digital services and products.

This paper describes the customized software solution for Tricolor TV and the benefits that it brings to the workflows of Tricolor TV.

Timeline of Tricolor Services

Since its launch in 2012, Tricolor TV has transformed HDTV from a premium service into a product accessible to the masses. In 2014, "Tricolor TV" was the first operator in Russia to regularly broadcast a pilot TV channel in ultra-high definition format (ULTRA HD 4K). In the following year, a full-fledged package of TV channels in the UHD format entered the "Tricolor TV" network. In 2016, Tricolor TV launched the ultra HD package for commercial use.
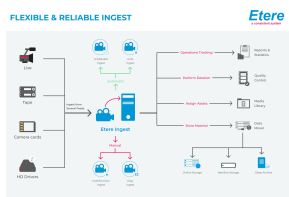
Tricolor TV is the only multi-standard platform in Russia, that has successfully developed the use of broadcast in high and ultra-high definition, using advanced video compression formats, including HEVC / H.265. In 2017, Tricolor TV announced the company's transition from a single-product business model to the expansion of the company's activities in the digital framework as the first operator in Russia. Thus, the operator launched the "Online TV" service, which allows subscribers to view TV channels included in "Tricolor TV" through the Internet, and also put into operation a new flagship service "Best on TV", making it possible to view popular TV content such as popular programs, movies and TV shows available on the Tricolor TV platform in non-linear mode.

In November 2017, "Tricolor TV" in partnership with the operator Eutelsat and Neotion company launched the satellite service "Territory Tricolor TV ". The new service allows visitors to hotels, airports, stations and other public places to watch digital TV channels free of charge from the screen of their phone or tablet without spending mobile Internet traffic.
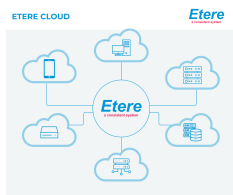
The Challenge

Tricolor TV needed to upgrade their system to incorporate new functionalities and customized workflows including the ability to perform full-text search in the database, to organize different levels of user access in the system, the ability to create and edit meta-data via specialized interfaces, register the materials received from right holders, to control the order of processing operation, log system operations and move media materials within the technological workspace. In keeping up with a fast-paced environment, Tricolor needed remote access on the move supported by a user-friendly interface that can be accessed quickly and easily. Etere has provided Tricolor with customized workflow integrations.

Also incorporated in the system design are automated workflows including the automation of the technological processes of quality control, creation and copy of low-resolution media files, transcoding processes, sound normalization in preparation for broadcasting, multiplexing and demultiplexing of audio in preparation for broadcasting and dissemination, archiving and data recovery to / from tape media. The new system also needs to be highly integrative to work seamlessly with third-part systems and applications such as NSC systems.
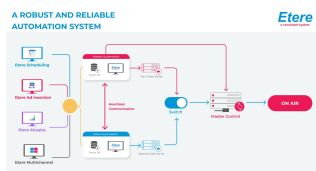
Etere Ingest diagram

Etere Cloud diagram

Etere Player Graphics

Etere Playout Automation
diagram

ETX Logo

For its transcoding subsystem, Tricolor also needed automatic creation of proxy copies of video files and their binding to the cards of the traffic system programs. Additionally, Tricolor needed to be equipped with the tools in the transcoding subsystem to manage rough editing in low resolution and the corresponding automatic editing of materials in high resolution.

Tricolor requires an automatic quality control system and the automatic transfer of files between transcoding systems, first HDTV sound processing system, non-linear editing systems, automatic quality control system, broadcasting complexes, disk storage arrays, tape storage repositories, workstations, external systems (websites, VoD services, pushVOD etc).

Together with our distributor, Okno TV, Etere was tasked to create an integrated solution for Tricolor TV's 1HDTV network.

The Solution
Etere Basic MAM and Users Management
Etere Basic MAM is an entry level MAM that is included in every Etere software system. It streamlines the content management workflow and provides users with the tools needed to organize digital assets in the system effectively. It is capable of managing the end-to-end workflow of ingestion, indexing, storage and retrieval of all media assets, providing the benefit of faster distribution of content to market, frame accurate content, seamless integration and information exchanges between different departments.

Etere CAL
Tricolor system includes the a requirement of 78 user CAL and 14 server licenses for up to 50 channels. Etere Client Access Licence (CAL) provides greater flexibility as it is identified by PC and not username, thus allowing multiple users to access the same PC without additional licences. This flexibility is also reflected in the servers where each server only needs one licence even when there are multiple processes running on one server.

Etere Executive Scheduling
Etere Executive scheduling is a software solution that helps users to strategically plan their short and long-term broadcasting playlists, including licensed content, contractual commercials, missing materials, imported material and regional ad insertions. Etere Executive Scheduling provides the tools for the segmentation and preparation of the schedule grid as well as the placement of primary events, secondary events, programs, series, promos and commercials even just before broadcast. Based on the fast and secure Microsoft SQL database, Etere Executive Scheduling features powerful and flexible search capabilities. Etere Executive Scheduling also equips users with seamless import and export capabilities, media preview and loudness control.
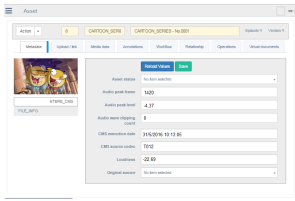
Etere Workflow
Etere Workflow empowers broadcasters with a software that allows them to configure broadcasting management rules to customize how the system performs. With Etere Workflow, companies are given full control to create, modify and optimize broadcasting and automation procedures. Etere Workflow manages an integrated control of system management and process management, thus making it a solution that works perfectly with all of Tricolor's internal processes and controls.

Etere Ingest
Etere Ingest is a flexible and versatile software solution that is able to manage all types of ingestion requirements including manual, scheduled and automatic ingest. It is capable of ingestion from all of the common feeds and it allows storage of the ingested media into the main system based on user-defined workflows. For its versatility, it is able to capture in real-time SD/HD media from any video source, broadcast stream, FTP and IP streams.

Etere SNMP Console
Etere SNMP Console is a useful system monitoring solution that provides users

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Etereweb MAM

with the tools to optimizes the infrastructure performance and availability of a system. In the event of a detection of missing heartbeat, Etere SNMP Console automatically sends a visual-alarm and a real-time email notification to the operations department. To check that Etere applications are running correctly, Etere SNMP console handshakes Etere applications and saves a log history of what has happened in the system. It also provides users with web console for a remote system control.

Etere Proxy Browsing

Etere Proxy Browsing is a browsing solution that is integrated in all Etere solutions. It allows users to search, browse, select and edit all related secondary events. Users can browse from an unlimited number of browsing stations. Its capabilities include full logo and subtitle preview, frame accurate playback, remote VTR panel control, simultaneous recording and preview. It provides specific HiRes, proxy and logged video preview.

Etere Transcoding

Etere Transcoder provides a flexible file-based workflow that is able to provide all major format conversions required in production, post-production, broadcast and distribution environments. It is based on the powerful FFMPEG conversion tool. Features includes AAC and MP3 audio encoding, H264 encoding at different resolutions, XDCAM HD 50 PAL/NTSC encoding and XDCAM IMX 30 PAL/NTSC encoding. Users are also able to set custom rules for auto file naming.

Etere Broadcast Quality Player

Etere Broadcast Quality Player is 4K-ready and it allows broadcasters to preview, monitor and playback their file-based content in professional broadcast quality on a user-friendly interface. The software is designed to support multi-language closed captions, dual monitor for both video and audio, frame accurate jog and shuttle, multi-standard timecode, contour shuttle devices support, real-time monitoring and up to 16 audio tracks compatibility. Its dual monitor capabilities also allow operators to switch the video and audio streams playback to a second monitor instantly.

Etere Automation

Etere Automation manages all broadcast playout automation requirements easily, saving time and minimizing errors in the process. Etere Automation runs independently from Etere SQL Server database and offers different levels of fault tolerance for a truly powerful and reliable performance. Additionally, Etere Automation is completely scalable to fit all broadcasting needs.

Etere ETX

Tricolor require advanced features such as embedded graphics capabilities in playout to fulfill the dynamic requirements of the station. Etere ETX is a cutting-edge channel-in-a-box solution that provides the capability to display in real-time the dynamic data from the playlist such as the event that is playing now and the event that is scheduled next. Etere ETX also provides the station with split screen and squeeze transition effects.

Etere ETX is a tightly integrated video management software that is capable of SDI, IP in and out, without using middle-ware or hardware. Etere has provided support for Newtek NDI technology since 2014, enabling full IP in and out capabilities. It provides professional video technology with support for all major essences and wrappers in the broadcast industry. It is also able to manage SDI outputs as well as multiple layers of 2D and 3D graphics. Additionally, Etere ETX also supports Microsoft ReFS file system and HEVC/H.265 encoding, driving the most popular HD/SD digital video/audio/graphics platforms without using middle-ware/proprietary hardware.

Etereweb

Etereweb empowers users with the tools to manage information exchanges and all the main features of the Etere software with a user-friendly web browser that enables access from any location as long as the user is connected to the internet. Etereweb provides a real-time management of information such as search,

preview, edit, download and upload of media files on a web client, including access to the airsales system.

Etere Resource Management

Etere Resource Management enables an all-in-one framework for activities relating to the allocation of resources such as materials, human resources and all broadcast related activities. It promotes real-time monitoring and assignment of resources, tracking as well as reporting of financial information. Users are also able to manage resources remotely with the software's web integration.

Etere F90

Etere F90 serves as a software that facilitates a seamless connectivity between two different system. It is an essential part of the automated broadcasting workflow. Etere F90 users are able to perform export and import in two different modes, manual and automated. It supports multiple formats and is capable of exporting to multiple destinations for a truly all-in-one solution. Not only that, Etere F90 also supports a web interface with real-time upgrades for connectivity on the move. F90 runs on an auto-update engine which analyzes playlist changes and updates the playlist automatically once the operator confirms the updates.

Etere HSM

Tricolor needed 2 IBM Tape Library (TS3310 and TS3500) and Etere HSM is able to provide Tricolor with the flexibility to select different file systems under a unified system. Etere HSM is a software tool that provides Tricolor users with the flexibility to move and optimize video content between different media. It provides users with the ability to mix different file systems under a unified system. It also provides all the software tools needed to archive all video files and manage both high and proxy resolution with increased protection.

Etere MAM

Etere MAM provides a complete and flexible management of all of Tricolor's digital assets. With Etere MAM, Tricolor is able to streamline the processes of ingest, index, storage and retrieval of its digital assets and all associated metadata.

The workflow interfaces Tektronix Aurora QC for audio visual check.

About Etere

Since its beginnings in 1987, Etere has been preparing users to be ready for the future. Etere is a worldwide provider of broadcast and media software solutions backed by its mark of excellence in system design, flexibility and reliability. Engineered in Singapore, the revolutionary concept of Etere Ecosystem promotes real-time collaborations and enhances operational efficiency across the entire enterprise. Etere Ecosystem software solutions including Media Asset Management, Channel-in-a-Box, Newsroom, Ad Insertion, Airsales, Automation, Broadcast Management System, Censorship, HSM Archive, Logging, OTT/VOD Delivery, Radio-Live, Subtitling and Captioning software are built with an integrative Web and Windows architecture that are customisable to fit perfectly in any system. Etere system is developed by 4 different groups in different countries to ensure reliability and quality. Etere delivers on its service excellence commitment with its dedicated team and a 24/7 worldwide support. Its portfolio of digital technologies and market-proven remote/on-site solutions including consultancy, training, installation and demonstrations are ready to run with your business no matter where you are. Etere enhances your adaptability for the future and empowers you with the software tools to drive your business to greater heights. www.etere.com