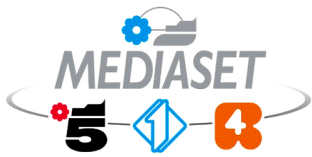# Mediaset has chosen Automated Digital Systems

As well as being the leading commercial television group in Italy, capturing on average over 45 percent of TV audiences with its three networks, Mediaset is one of the largest media organizations in Europe with television properties in France, Germany and Spain.

Logo of Mediaset

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In spite of this primary role on the domestic and international scenario, aggressive competition from an increasing number of sat channels, other broadcasters and even Internet have all contributed to motivating its on-going ramp-up to digital and data-based technology in its operations. Twenty Mediaset studios in various locations in Milan, Rome and elsewhere deliver 7,500 hours annually with assets ranging from sports and news to game shows and variety shows pushed out on the three networks and through international distribution clients.

Almost a half-million hours of existing taped programs, promotions and other content will be transferred to a centralized digital archive. To make a broad positive impact on its workflow and decrease production costs, Mediaset also plans to improve the connectivity of its internal Ethernet and fibre optics network, streamlining all the processes associated with its production centers, newsrooms, external locations and its transmission network. One of the latest steps in the company‟s network policy to implement the transition of the entire Mediaset modus operandi to digital, and the resultant fine-tuning of the entire work process, is the up-coming changeover to a new server-based playout facility in the company‟s Cologno Monzese premises, for use by Mediaset‟s three networks (Canale 5, Rete 4 and Italia 1) nationwide terrestrial channels also available outside Italy via satellite and cable television systems.

SAFETY FIRST

ETERE and the all companies interacted to create specific functions for this project, all facing a complicated challenge and contributing to a truly unique system, the first large example of completely digital TV Continuity was a factor of primary importance.
This was the topic of a great deal of lengthy initial discussions, as it meant coming up with a solution which ensured Mediaset was able to go on air under any circumstances - no easy task in this sort of situation, as the idea was to build a system with 90% of its functions software-based, but without single point of failure.
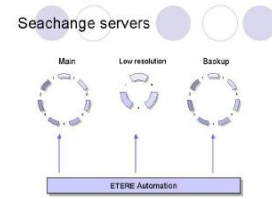
However, the result is a truly avant-garde fault-resilient infrastructure that guarantees the system to continuous operation, ensuring all its function even in the case of a fault, a very important concept as far as Mediaset is concerned and definitely a system that will be a yardstick for other broadcasters in coming years.

As well as being a set-up which is effectively two in one, plus various software and hardware features implemented to ensure the possibility of going on air in even the most disastrous situations, Mediaset"s new playout facility also has a fourth auxiliary playout channel identical to the three for normal use, ready to be manned should one of the other chains have to come off the air for any reason. In short, a system which is guaranteed not only full-redundant but also fault-resiliente.

ETERE SOFTWARE & SEACHANGE

The Mediaset project is one of the first television installations of any media server with SeaChange's recently available 72GB disk drives.
The Mediaset new playout facility in Cologno Monzese in fact has two seven-node Broadcast MediaClusters and a three-node BMC with 16 inputs for low-quality recording.
There are also three single-node Broadcast MediaServers, each with two inputs and four outputs for time-delay recording.
The new standard version of the Vstrm (Virtual Stream) software which controls the MediaClusters) includes all the features requested by the client for the Cologno Monzese install, including the possibility of controlling the SeaChange system using ETERE automation via IP network, not serial ports, configurable color bumper to be used between commercials.
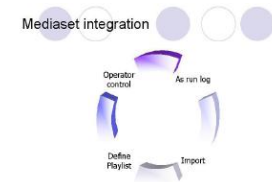
Mediaset is definitely a strategical client for ETERE. Above all, it"s a client of primary importance for the technology installed and a world-level showcase for ETERE" unique approach to playout system the „distributed technology".

As well as being an excellent test-bed for the ETERE software & technology , Mediaset utilizes all their characteristics and is one of those clients able to "guide" suppliers" technology towards ground-breaking market solutions.

ETERE INTEGRATION & TOTAL FLEXIBILITY

The Mediaset playout system is one of the largest project all over the world, the network in fact also involves high-end technology from key players in the broadcast market: Cisco, Leitch, Miranda (Oxtel), Grass Valley, Orban and many more, carefully selected with Mediaset"s experienced technical staff.

The result is a cutting edge turnkey playout system for Mediaset"s three generalist channels and a fourth, which can be used as an auxiliary channel.
The set-up includes:
Main and backup video file servers and low resolution MPEG1 server Video/Audio routing Automatic ingest areas Manual ingest areas Live video reception areas: in-coming material with immediate server ingest. Quality control areas Playlist „assembly" area Master control and logo insertion chains Playout desks with emergency management.

All these sectors are controlled by ETERE Automation, which also allows independent manual playout from each channel"s desk. The system architecture allows the three channels" material (programs, promos and publicity) to be ingested at least six day before going on-air and also enables "live" management of the programs, according to network requirements. The videos stored in the two 7-node SeaChange High Resolution Broadcast MediaClusters are the equivalent of approximately 9 days for each of the four channels and the BMCs are used as main and backup storage of everything including the live material, which can be recorded on the servers as required, whereas the same material in low-resolution for browsing is fed on to the 3-node Broadcast Media Server.

Ingest procedure involves the simultaneously automated loading of the main and lo-res browser servers, so all three have exactly the same material, received from various sources: three Flexicart units, each with 2 VTRs; 12 frame synchronisers with automatic audio delay correction and three manual ingest suites. Each of the three "live" ingest suites has a Work Station running the software controlling manual and automatic operations.

In-coming signals are distributed via passive splitter to two identical 96x96 routers (main and backup), which, under the control of ETERE, feed the respective server inputs. Remote XY control panels offering access to both these routers are strategically located throughout the facility: at the four playout desks, in the equipment room, the four quality control posts, the three manual ingest suites and the 3 live material ingest suites, enabling manual control in emergency situations or for operations for which automation-free control is required. Two routers (main and backup) are used for timecode management, since it"s necessary to carry forward each machine"s timecode until the videos are in the server, in order to keep the original timecode on the system, essential for clip management, editing and trimming The main router on the other hand, feeds the master control A/B inputs by means of software, which also controls insertion of the appropriate logos, clock and titles. In the event of live transmissions such as newscasts, operators can disable the automation and intervene manually on the controls. Having taken the decision to install four main chains and four
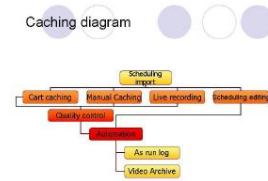
identical backup chains, to all effects realizing eight playout set-ups, at any time it"s possible to switch the system over and go on-air with the backup chain without loosing any functions.

Master control set-up for each channel is configured as follows: each channel has two (main and backup) Miranda PresMaster 100 master controls, which in turn control two main and two backup Miranda ImageStores, giving four key layers.

Everything is controlled by a ETERE main and clone automation controllers so, if at any moment an operator isn"t satisfied with what"s happening on the main chain, he can switch everything over to backup, running the same scheduling frame syncronized.

Each of the facility"s four quality control suites uses a Work Station with automation software analysing the material in the servers according to Mediaset"s quality criteria.

The PCs hosting the ETERE controllers are all mounted on frames with redundant "hot swap" power supplies, redundant ventilation and are equipped with twin ethernet cards in fault tolerant and load balancing configuration. ETERE is also used to allow the playlist assemblers to carry out "simulations" and publish the playlist for the playout operators. Assembler"s playlists are updated in real time, indispensable in the event of live events over-running scheduled time, a frame-accurate transmission log is produced in real time and the scheduled playlist can also be consulted via a WEB interface running under Windows. The software interconnection network is based on Cisco technology.

ETERE AUTOMATION SYSTEM

On the Mediaset project, the main challenge for ETERE was the size of the system, as the firm was already able to provide the majority of the features required, as well as total system fault-tolerance. ETERE offers the great advantages of its Distributed Architecture and the fact that it enables to create extremely secure intrinsically redundant, fault-resilient systems, which are above all able to be adapted according to clients" requirements.

The largest investment by ETERE for this project was in „Glue Software" connect playlist assembly, automation, as run logs with existing Mediaset structures. Developing this „glue" costs some 6-7 man-years on projecting a set-up, which met Mediaset"s stringent specs. In particular, a lot of work went into system stability, fault tolerance even in import & export software..

As far as the rest was concerned, secondary details developed for Mediaset included client-specific language – for example the word "assembly" when referring to playlist preparation.

The software area developed for controlling promos and ads along with other studies is included in Traffic, part of ETERE Version 12. Although the material used in preparing Mediaset playlists can be divided into four macro groups (programs, publicity, special initiatives and promos), in fact it comprises 900 different types of "objects", so numerous different methods for calculating publicity traffic are involved, based on national legislation and Mediaset"s internal regulations, which limit items such as promos to a certain percentage – the ETERE software also keeps this aspect under control.

Mediaset is the first broadcaster to implement IP control of SeaChange equipment, so there"s no more RS 422 – all the commands arrive via IP, which gives the great advantage of offering a fault-tolerant set-up that eliminates approximately 250 ports and relative cable runs.

At Mediaset, the assemblers, a 24-strong specialist team responsible for "assembling" the playlist, now have a full preview of each channel"s playout list and via ETERE can also preview logos, titles, subtitles on the appropriate pages, etc. Although this means a completely new work method, in the long run it results in means greater on-air precision, with the SeaChange units offering both HR and lo-res mpeg-1 video, which can be browsed on a normal PC, allowing what is in effect a considerable revolution from a practical and logistic point of view has been carried out in a deceptively simple and highly productive manner.

With a system used by a broadcaster of Mediaset"s status, although problems should occur at a frequency of less than one every 7-8 months, it"s fundamental that every type of risk is taken into consideration beforehand and alarm signals become a factor of prime importance. These are obviously in SMNP standard, as are Etere"s messages. From their SMNP console, Mediaset"s playout supervisors are therefore warned in advance of a hardware glitch, as ETERE indicates that it has problems controlling the unit or section in question. In the ingest zone, the PCs controlling three flexicart units

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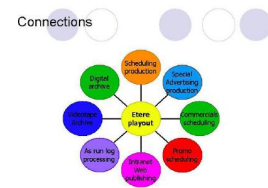
for long events have software that ensures items are uploaded in the order in which they"re needed, streamlining the flexicarts" feeds to the servers. Another area of the software was developed to Mediaset specs for the four ingest suites used for short events, and thanks to Ethernet, every ingest operator can control all the server ports and VTRs in the system without any cable runs. The system contains 15 days of material, which corresponds to almost 30 days of transmission. Apart from live material, all Mediaset transmissions are recorded some time in advance, so ingest can normally be done almost a week before transmission, leaving sufficient time for the necessary quality control.

Apart from when they"re at the playout desk for live transmission, Mediaset playlist assembly staff man 24 suites for the three channels" schedules: the network is also interconnected via RAV FAV, Mediaset"s fast fibre optics network to the broadcaster"s Segrate premises, which handles the uploading of spots and part of the functions. Playout operators have main and backup at their disposal, so two playout systems and two playlists, but ETERE has virtualised this aspect, and the two systems are in fact physically just one, from which it"s possible to control both. As main and backup are interconnected, it"s possible to work with just back-up controller or just the main controller, ensuring not only fault-tolerance, but also fault-resilience
Although other key broadcasters in Italy (including Italy"s RAI state broadcaster) and abroad were already using ETERE"s Distributed Architecture, this project is the largest to date and as well as controlling 126 serial ports and having 100 PCs with the software running in the actual playout facility, via Web server, it is also the first system with 2000 "users" – in fact, anybody in Mediaset"s premises located throughout the country or at home can access and browse playlist information via Windows interface.
ETERE Automation is a Windows-based 100% software solution and thanks to the fact that it runs on "normal" computers, offers an economic, scalable solution requiring very little hardware maintenance.