core scenarios with Cinegy Air PRO





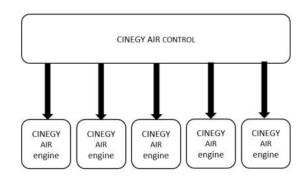
Multichannel playout has become increasingly popular all over the globe. Relentless competition has compelled international and local media holdings to launch new and more targeted channels on a regular basis. To engage their audiences in a more effective way, they use different platforms to deliver content to clients (satellite, streaming to Internet, OTT, etc). As the number of channels increase, so does the time required with traditional methods to add new ones to an existing workflow. Cinegy's software-only products make that process much easier, saving time and money.

CINEGY AIR PRO PLAYOUT SERVER

Delivering a channel is complex, with many interconnected elements that cost money, require management, and need maintenance. Cinegy's playout solution — Cinegy Air PRO — vastly simplifies these challenges by supporting multiple channels with multiple features in a single box. All you need is the number of Cinegy Air PRO licenses equal to the quantity of channels you need (or a bit more if you want redundancy) that can be installed on any commodity hardware at your disposal (please refer to Cinegy's system recommendations).

Cinegy Air PRO provides a software-based playout automation system for SD, HD and/or Ultra HD (4K) using standard IT server hardware and certified SDI video cards. Cinegy Air PRO delivers Dolby Digital encoding, EAS, Nielsen watermarking and Cinegy Type channel branding in a single, integrated software solution.

Cinegy Air PRO consists of two elements: a control panel, and a playout engine. The Cinegy Air PRO control panel provides a state-of-the-art interface for controlling one or more playout channels connected via IP. The Cinegy Air PRO playout engine executes the playlist and renders video and audio to air. It also sends real-time video stream feedback to the control panel interface, eliminating the need for video monitors as well as SDI cabling and routing.

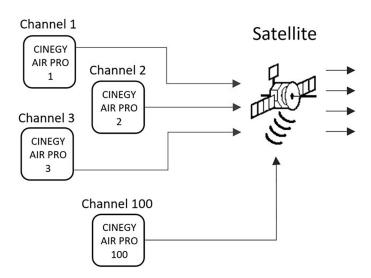


Cinegy Air PRO supports multi-channel playout, including simultaneous playout of multiple playout channels, which can be controlled by a single Cinegy Air PRO control application. Multiple instances of Cinegy Air PRO playout can run on one powerful machine, transforming it into a playout server capable of broadcasting multiple independent channels. Cinegy Air PRO playout channels can also be set up to stream programs live without requiring additional hardware or software.

There are three core scenarios of multi-channel broadcasting with Cinegy Air PRO.

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Scenario 1. Multi-channel Playout Center

MULTI-CHANNEL PLAYOUT CENTER — Scenario 1

Playout often takes place in multi-channel playout centers, which can be owned by a broadcaster or be run by an independent company that has been contracted to handle playout for a number of channels from different broadcasters. More clients require more channels.

Speed to air and the price of adding a new channel always matters, and with Cinegy Air PRO software you can launch a new channel within minutes. ABS BROADCAST, one of the largest independently owned playout and television service providers in Europe, installed Cinegy Air PRO in their London-based playout facility at the beginning of 2016 and continues to grow with more channels and licenses.

All you need to get a channel on air is to install Cinegy Air PRO software bundles on powerful machines connected to a network via IP (one license for each channel), create a playlist and go - you are on-air!

Cinegy Air PRO can control multiple channels playing to air or plan schedules, programs, and commercial blocks offline. Multiple remote or local users can control the schedule and playout operation. Cinegy Air PRO offers

unparalleled flexibility by playing mixed format and mixed resolution content, as well as un-rendered edit sequences straight to air. Insert a logo or overlay from the same central automation panel, and control external devices with powerful, configurable secondary events. You can also simulcast output via SDI and/or IP streams for ATSC/DVB or web usage.

Cinegy Air PRO maintains a high level of fault-tolerance and high-availability while providing all the advantages of centralized storage. Playlists for individual channels are stored locally in the corresponding playout server in XML format while a background service caches and conforms the video content on the playlist. The Cinegy Air PRO playout engine only plays media direct and uncached from the central storage when it is added in a few seconds before going to air. For each Cinegy Air PRO channel, one or more slave channels can be defined, all of which will play the same media as frame accurately as the master, ensuring reliable failover if ever needed.

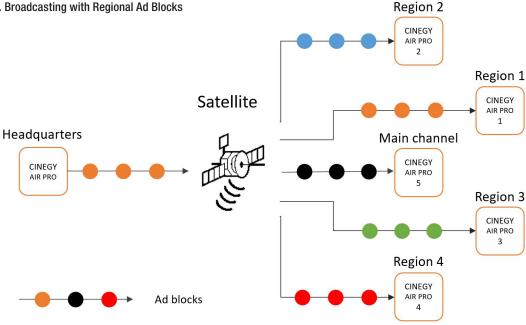
BROADCASTING WITH REGIONAL AD BLOCKS — Scenario 2

Large national TV companies used to broadcast channels to different locations all over the country. Usually there are a few predefined time slots in the main stream/signal for regional advertising where each region can insert video clips. A playlist with all timeslots is prepared with the help of Cinegy Air PRO at a headquarters, after which it is sent to a satellite using Cinegy Air PRO as the central video broadcasting server. Each regional batch receives a dedicated satellite feed and is re-broadcast to its region using the on-site Cinegy Air PRO server.

It's not easy to control how regional advertising department works from a headquarters. If a playlist is not automated, advertising could start earlier or end later than planned, or an operator could miss something, all of which can effect a broadcaster, or their advertiser's, image.

To automate playlist updates, special marks are used. They inform the playout server that an advertising slot has just started, so playout switches from a main playlist to regional advertising. Cinegy Air PRO provides the most up-to-date technology to automate commercial opt-out via SCTE 35. Automatic opt-out blocks can be used for different playlists and include regional content variations. They can be used in the workflow when the main playlist is broadcast as an RTP stream with embedded SCTE 35 markers, while another playlist is set to receive the RTP stream and trigger the automatic opt-out block playout at a certain time.

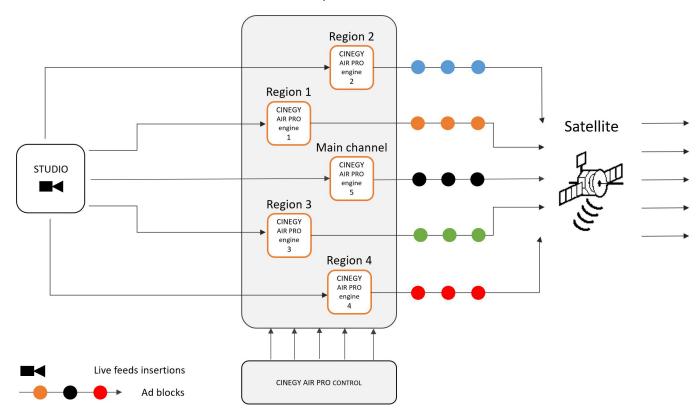
Scenario 2. Broadcasting with Regional Ad Blocks



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Headquarters



Scenario 3. Centralized Broadcasting with Regional Ad Blocks

CENTRALIZED BROADCASTING WITH REGIONAL AD BLOCKS — Scenario 3

Until recently, transporting a large amount of advertising clips from a central location to regions was expensive, complicated, and time consuming. Most advertising clips were produced, managed, and inserted on-site, in the regions.

Today, with faster internet connections, cloud storage, and ftp services, delivering content even to faraway places is easy and simple. Therefore, more broadcasters create playlists for regional channels in their headquarters and send them separately via satellite to each region with already inserted advertising video clips. That provides better control of advertising content quality and enables for a rapid response to all requests from advertising departments. The level of automation in Cinegy Air PRO enables you to create all playlists at your headquarters, populate them with content and regional ads, and send them to a satellite. Several channels are configured to follow the same playlist, but each channel has its own window for playing region-specific content like local news or commercials.

All Cinegy Air PRO engines should be connected to one Cinegy Air PRO control panel and be controlled by it. You can insert a live feed (breaking news, for example) anywhere in a central playlist and it will appear in each regional playlist; or you can implement changes in a dedicated time slot in one separate channel and it won't affect other channels' playlists.

DISASTER RECOVERY

You can integrate Cinegy Air PRO software into an existing environment for disaster recovery. For example, in 2012 Cinegy's solution was deployed by PBS's Disaster Recovery, Diversity and Maintenance Site (DDMS) in Lincoln, Nebraska as a fundamental part of PBS's Program Origination System.

Cinegy Air PRO can work completely stand-alone or in concert with MAM, archiving, and traffic solutions. Cinegy's MAM solution, Cinegy Archive can be fully integrated with Cinegy Air PRO, as well as a number of leading third-party traffic solutions. Media, metadata, placeholders, and graphics elements will seamlessly migrate into the Cinegy Air PRO playout schedule from Cinegy Archive or a 3rd party traffic system.

CLOUD COMPATIBLE

Cinegy Air PRO can run in a VMWARE ESX, Microsoft Hyper-V, Citrix XenServer virtual environment (VM) and is also available on Amazon Web Services Marketplace. Running Cinegy Air PRO playout in a VM has many advantages, including better hardware utilization; instant deployment of additional channels; easier migration; and inexpensive, high-availability clustering.

Virtualized Cinegy Air PRO software has been successfully used by Deluxe in its next generation, cloud-based world-wide service platform — MediaCloud. MediaCloud delivers to any broadcast format, with a very high service quality from a highly resilient infrastructure. A smaller version of such a workflow is implemented in leading Polish OTT operator 4VOD's cloud-based playout facility.

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Cinegy products have been deployed in broadcasting for many years. Dogan TV in Turkey, a Cinegy customer since 2004, is the only national broadcaster in the world whose broadcasting and production workflows are fully IP driven. Cinegy serves different divisions of PBS (USA) and its associate stations in educational television and also powers PBS' Disaster Recovery infrastructure. True Vision, premier pay TV provider in Thailand also uses Cinegy for disaster recovery.

ABS BROADCAST, United Kingdom

ABS BROADCAST offers play-out services to a range of international customers. They have expanded their system in 2015 by adding 4 Cinegy Air PRO including DnxHD and Dolby Digital support, and branding with Cinegy Type. They



also use Cinegy Archive with 5 Cinegy Desktops and Cinegy Convert with the Cinegy MAM plugin for asset management. Customer playlists are processed using Cinegy Traffic Gateway PRO. Monitoring is handled by 32 channels of Cinegy Multiviewer.

DELUXE MEDIACLOUD, United Kingdom

Deluxe's MediaCloud, launched in 2013, brings together cutting edge non-proprietary IT technologies and state-ofthe-art media tools to deliver a revolutionary broadcast service offering. Based around Cinegy technology, Deluxe MediaCloud delivers to any broadcast format, with a very high service



quality from a highly resilient infrastructure. Robust system and data security levels rival those found in major banks and military operations and full disaster recovery is implicit within the service offering.

DOGAN MEDIA HOLDINGS, Turkey

Dogan TV (DTVH) is the largest broadcasting group in Turkey and operates the leading entertainment channel KANAL D, the 24/7 news channel CNN Türk, the second largest DTH digital platform D-SMART, and approximately 60 thematic satellite channels. Their IP-based production and play-out workflow is based around



440 concurrent Cinegy Desktop user licences accessing a Cinegy Archive totalling 6.5 petabytes, 52 Cinegy Air PRO playout channels (with another 30 for in-house production), 50 Cinegy Encode servers, and Cinegy Multiviewer and Cinegy Route to manage, monitor, and control all IP streams.

LAKELAND PUBLIC TELEVISION, USA

Serving Northern Minnesota with six channels of highquality public television programming, PBS member station Lakeland Public Television decided in 2015, to relocate, and at the same time to upgrade their aging Sundance automation with an IP-based system from Cinegy, delivered and fitted by HA Design Group. They use 3 Cinegy Air PRO servers with



Cinegy Type, Dolby Digital and DNxHD, which are integrated with Myers ProTrack traffic system using CinegyTraffic Gateway PRO software. In addition they can capture up to 8 HD feeds in real time using Cinegy Capture PRO and they use 6 Cinegy Player PRO licenses for viewing video in professional formats.

PBS DDMS NEBRASKA, USA

PBS's Disaster recovery, Diversity and Maintenance Site (DDMS) in Lincoln, Nebraska employs Cinegy technology since 2011 as a fundamental part of PBS's Program Origination System. A prestige project for all involved,



the DDMS provides for hot stand-by functionality, maintenance switch-over at the primary site and restoration of full service, should there be a catastrophic failure. It uses Cinegy technology to guarantee continuity of service for PBS associates across America. The 60-plus channel DR site uses Cinegy Archive and Cinegy Desktop, Cinegy Capture and Cinegy Convert, Cinegy Air PRO with Cinegy Type and Cinegy Traffic Gateway.

BEMC PBS OHIO, USA

The Broadcast Educational Media Commission in Columbus is an independent agency created to advance education and accelerate the learning of the citizens of Ohio through public educational broadcasting services. They are



currently rolling out 47 channels, and in April 2015 Cinegy were selected to help make this happen, together with their partner HA Design Group. The complete installation will feature 16 Cinegy Encodes for SDI to IP conversion, 12 channels of Cinegy Capture PRO with Archive Adapters feeding into Cinegy Archive with Cinegy Media Cleaner, 25 Cinegy Desktops, Cinegy Workspace, hundreds of channels of Cinegy Multiviewer, Cinegy Route and Cinegy Traffic Manager and 47 Cinegy Air PRO playout servers with Cinegy Type, Dolby Digital and DnxHD.

PLATCO SATELLITE BROADCASTER, South Africa

Platco Digital is an independent distribution company offering digital carriage solutions on various platforms including direct to home (DTH) and Digital Terrestrial Television (DTT). Its main objective is to help free TV



broadcasters cost-effectively reach audiences, achieving this with 12 Cinegy Air PRO play-out systems linked via Cinegy Route and monitored by 12 channels of Cinegy Multiviewer, delivered by Centrax.

REGIO TV. Germany

Schwäbisch Media started using Cinegy products in 2006 and has been enhancing and extending their Cinegy estate ever since. Today, Cinegy Ingest, Cinegy Desktop, Cinegy



Archive and Cinegy Air PRO are in use at three Regio TV broadcast locations, Stuttgart, Ulm, and Ravensburg. Smaller Cinegy systems deployed in Aalen, Biberach, Tuttlingen, and Wangen are capable of archiving and quick editing. Cinegy partnered here with Videocation.

REDE MASSA, Brazil

Rede Massa is an organisation comprising 5 TV stations: TV Iguacu, TV Guara, TV Cidade, TV Tibagi & TV Naipi. They cover 100 percent of the 399 municipalities in the state of Paranà, producing 600 hours of local content in HD every month and REDE MASSA broadcasting to 6 million people. They are happy to rely on



Cinegy Air PRO for playing out all 5 channels, citing value for money and reliability as the key factors behind their choice. CIS group supplied the implementation.

TRUE VISIONS, Thailand

True Visions is Thailand's premier pay TV provider offering themed bouquets of local and international programming via cable, satellite and Internet, both free-to-air and subscription



services. True Visions entrust their continuity of service to Cinegy, and have now 40 licences of Cinegy Air PRO with Cinegy Type and Cinegy Multiviewer as a disaster recovery solution via Cinegy partner, 7 Keys.

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