MediaFUSE

powered by fusion

AUTOMATED CONTENT REPURPOSING AND MULTI-DISTRIBUTION SYSTEM

The MediaFUSE automated content repurposing and multi-distribution system is a platform that is designed to make the task of repurposing content for Web and mobile distribution a more efficient and profitable proposition.

The processes used today by many content creators to get multimedia files online and delivered to mobile platforms are serial and time-consuming. It can take hours, or even days to publish a small amount of content, which is rarely enough to support their advertising avails—or to give viewers a reason to visit often and consume multiple media clips.

Our MediaFUSE® system enables a create once, publish everywhere (COPE) workflow for repurposing over-the-air content for Web and mobile distribution. It automates the process of encoding, streaming, editing, uploading, and makes it possible to add rich metadata throughout the process. The result is faster, more efficient and more profitable content distribution.

The MediaFUSE system supports a highly integrated workflow, from pre- and live production to encoding, transcoding, and content deployment to popular third-party content-management and content-delivery systems.

In addition, the system supports an optional interface into popular third-party advertising traffic and billing systems to synchronize ad delivery via Web and mobile networks with that of the over-the-air ads.

As a result, the integrated workflow of the MediaFUSE system can increase the amount of content a broadcaster can repurpose by as much as five times, support dynamic Flash, HLS-5, or WMV live streaming, and provide a much more metadata-rich content architecture compared to traditional approaches. Best of all, the system can make this content available in seconds and minutes, as opposed to hours and days, and do it all with existing Web and content creation personnel, with no advanced technical knowledge required.

KEY FEATURES

- Efficiently repurposes multimedia content for distribution via Internet, mobile devices, VOD, and syndication—in fewer steps and much less time
- COPE (create once, publish everywhere) model supports easy addition of metadata during pre-production to automate segmenting, categorizing, transcoding, and publishing to multiple publication points
- Fully monetizes broadcast assets via:
  - Increased repurposed content – up to 5X
  - Boosting online viewership and maximizing advertising avails
  - Targeted online advertising and promotional campaigns
  - Live content streaming to Flash, HLS-5, or WMV with new alternate ads or replacements for embargoed content with no additional human intervention
  - Ability to quickly create links to related content, driving additional advertising opportunities
- Interfaces with supported traffic and billing systems, via BXF, to schedule and verify ads in the live streams
- Includes a powerful "multimedia archive" feature that stores thousands of hours of video, metadata, and still image content for later re-use
- Enables reporting/posting complete stories for online and mobile consumption, letting viewers choose between a quick overview or a full in-depth viewing experience
- Generates on-demand content in Windows Media, Flash, 3GP, QuickTime, MPEG-2, MPEG-4, H.264, AVI, and other formats
- Support on-the-fly content changes via pre-production tagging—live stream segments can be embargoed and eliminated or replaced during broadcast. Ads can be streamed that are specific to the publication point / device

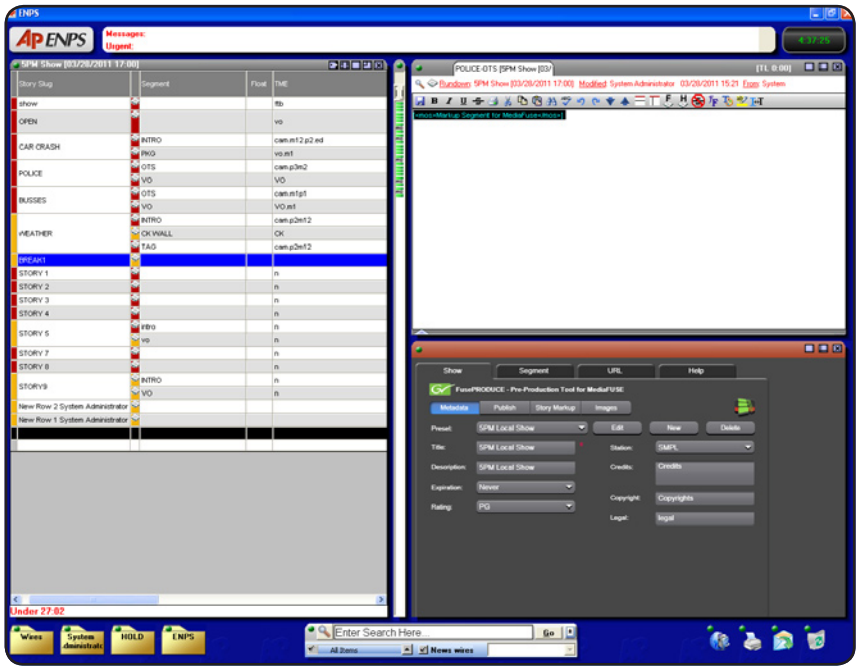
Ingest/Pre-Production

When MediaFUSE is used with Ignite, content repurposing begins at the ingest/pre-production stage. Using the FusePRODUCE module of the MediaFUSE system, a reporter or producer can quickly and easily link data and information to a story on a newsroom computer system (NRCS) production edit stations. This capability provides users with a way to mark up a show, segments, images, textual accompaniment stories, associated URLs, as well as to drag and drop metadata and commands into the rundown.

The FusePRODUCE module also lets users set specific syndication points to support multiple distribution formats and locations in a parallel process—and with minimal intervention. In fact, the module's ability to support configurable data presets for most encoding and distribution tasks results in significant time savings.

A unique, and powerful feature of the MediaFUSE system is the ability for its BXF data to be read and translated from the station's supported over-the-air ad traffic management system to the online ad management system of an application service provider (ASP) or content delivery network (CDN). The ability to reconcile ad data for the replaced ads is key to maximizing the monetization of advertising data and delivery measurement. Additionally, users can embargo stories to prevent them from appearing in the live stream, and can choose alternative content to play in its place.

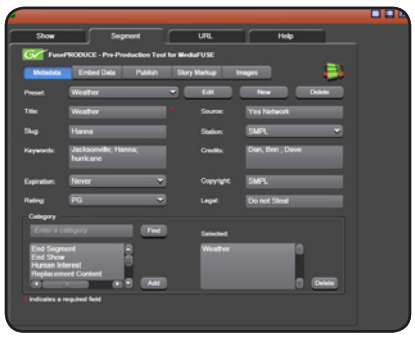
FusePRODUCE Integration into the NRCS User Interface



COMPONENTS USED IN THE MEDIAFUSE PRODUCTION PROCESS

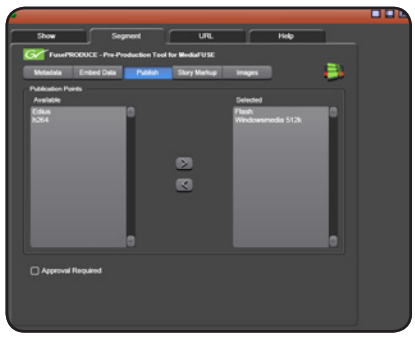
The FusePRODUCE Show-Publish Preset

The MediaFUSE system lets operators choose specific publishing and syndication locations, formats, and restrictions, using the Show-Publish preset of the ActiveX control into iNEWS or ENPS news room computer systems.



FusePRODUCE Metadata Tagger

Reporters and producers can easily add rich metadata at the show level. Since much of this data doesn't change for repeating shows or segments, it can be saved to a specific preset for easy and quick recall.



FusePRODUCE Publication Point Selection

MediaFUSE can automatically format content for different publication points, for example, one version for the iPad, one for Web, and one for Android. FusePRODUCE provides the means for users to select one or all publication points in pre-production.

Production

After the pre-production process, in which metadata describing the content, publication rights/formats, and classifications are entered, the content moves to the production phase as part of the Ignite™ control-room automation workflow.

During this process, MOS data (including repurposed metadata) is imported from the NRCS into the Ignite system. The FuseIGNITE software module interfaces with the Ignite system and inserts Web commands into the event timeline, which are then used to mark in and out points for each segment, as the live show is directed by the director.

This important metadata is automatically added to the data entered by a producer into the FusePRODUCE module, and is then used by the FuseENCODE module to accurately stream and segment the content into fully distinguishable clips around which it will be possible to target dynamic ancillary data links and advertising. The FuseXCODE module then performs transcoding based on the settings entered in the pre-production process. In addition, the MediaFUSE system makes it easy for you to ingest, encode, and transcode file-based, extended-play content and commercials, and add rich, temporal metadata to those clips and segments to make them part of the repurposed content distribution workflow. Local ad traffic metadata continues to flow through the production process. MediaFUSE also provides the unique feature of allowing users to operate on a growing live show recording. For shows in which there is no MOS data, or for MediaFUSE used in non-Ignite environments, a user can segment the live show into clips while the show file is still recording, therefore completing the tasks by the end of the live production.

Post Production

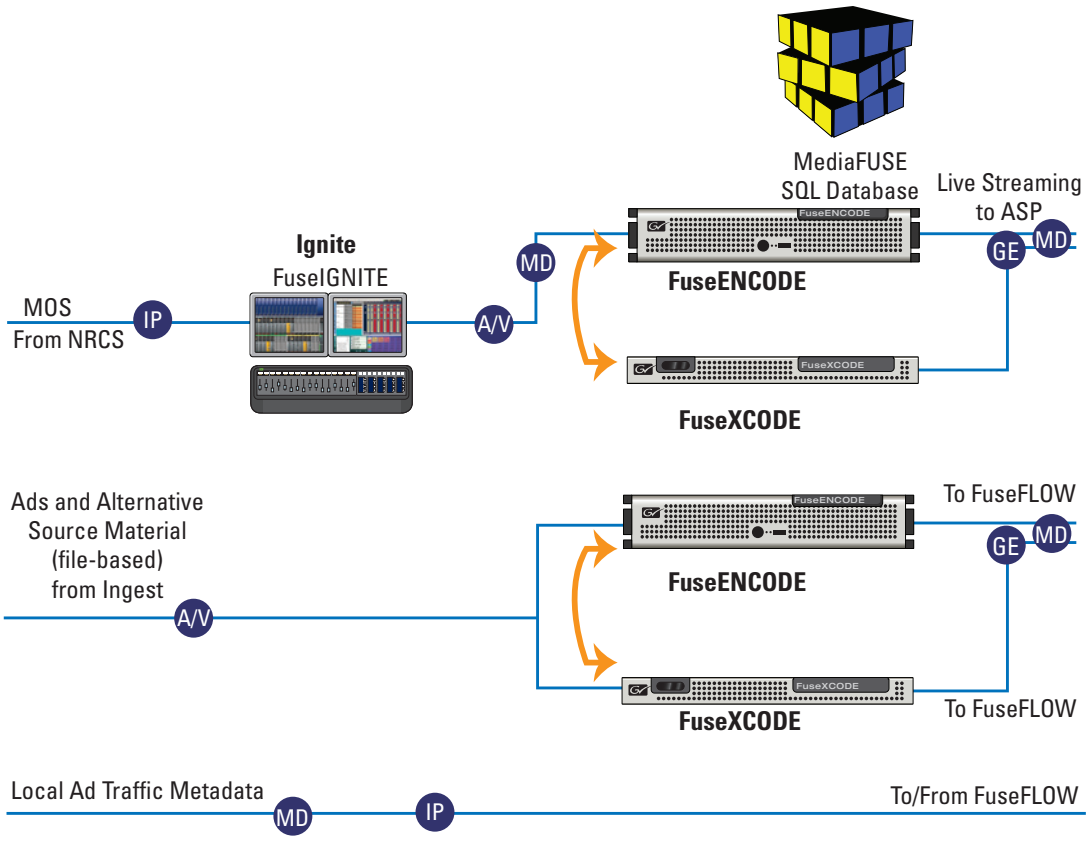
Following the live production chain of operation for MediaFUSE content, all clips, metadata, and advertising data travels into the MediaFUSE post-production process. This post-production process can be completely automated, if desired.

However, the MediaFUSE system can support an approval process, and, if necessary, light content editing utilizing the FuseAPPROVE post-production workstation. This powerful, but easy-to-use application provides for last-second video trimming, editing of the metadata, choosing a new thumbnail, editing or creating a textual accompaniment story, choosing a series of still images, and other tasks.

The FuseAPPROVE application runs on a Windows workstation that can be located in a control room or in a post-production area. By controlling the parameters set during the FusePRODUCE preproduction process, it lets the operator approve, reject, and edit the metadata associated with shows and stories, as well as operate on a growing live recorded show file to create sub-clips.

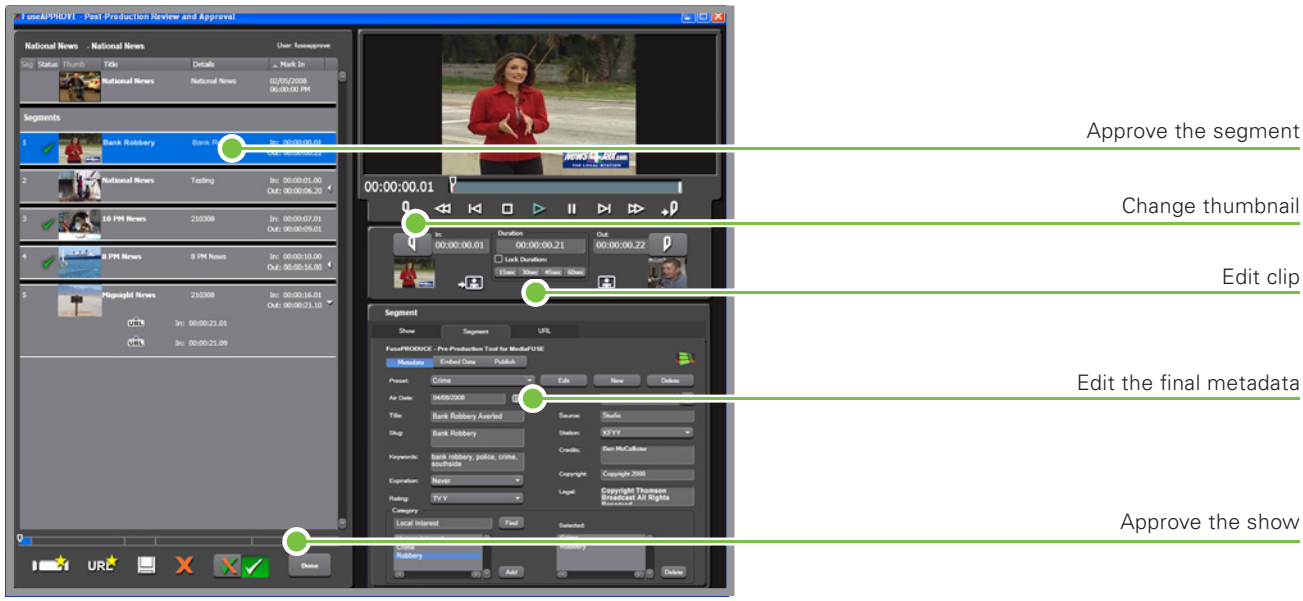
For content that requires no editing, the segments are automatically processed and sent for distribution to the appropriate publication points using the parameters set using the FusePRODUCE module during the pre-production process.

MediaFUSE – Ignite



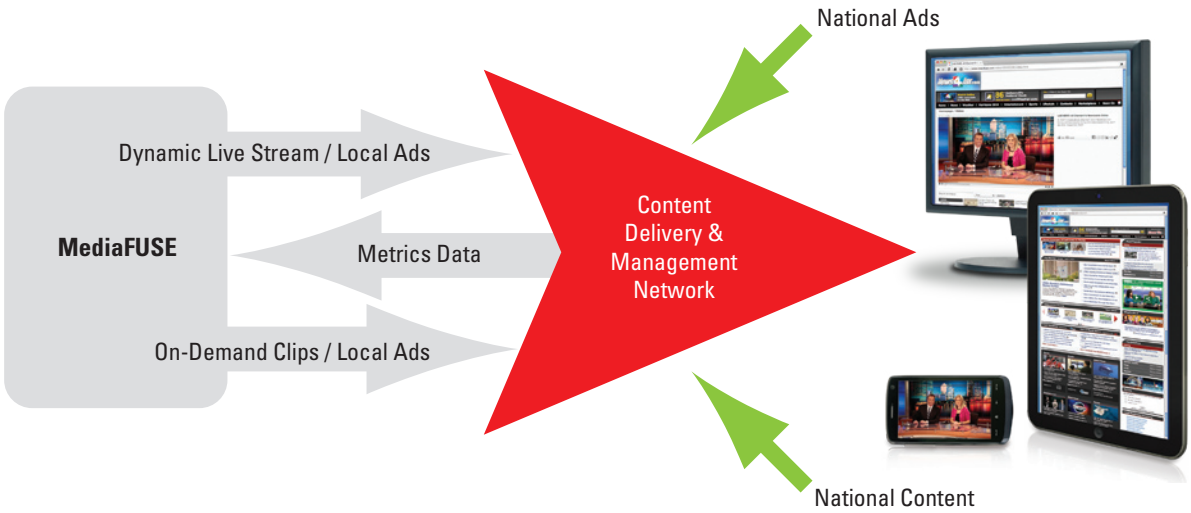
FuseIGNITE is the Ignite module that imports rundown edits and adds the relevant show, segment, and Web markup elements to the Ignite timeline. The module includes an integrated view of the Ignite timeline, time-accurate marks to automate post production, and a display of the status and control of content in production.

FuseAPPROVE



The FuseAPPROVE application runs on a workstation that can be located in a control room or in a post-production area. This application allows production personnel to approve, reject, and edit the metadata associated with shows and stories.

MEDIAFUSE CONTENT DISBURSEMENT AND FEEDBACK SYSTEM



Publishing and Management

Once a show and its segments are approved and processed for delivery, all content enters the MediaFUSE publishing and management chain, which is controlled by the FuseFLOW system. The live stream, with metadata-driven alternate breaks and content customized for a live streaming broadcast, enters via a live FTP feed. The on-demand, segmented clips, still images and XML metadata are sent either directly to the ASP/CDN via FTP, or to a folder on an ASP's network that is being monitored for file processing.

In addition to its standard FTP delivery capabilities, the MediaFUSE system can be extended in some cases to support feature-rich interfaces of select content management providers, such as WorldNow, IB, etc.

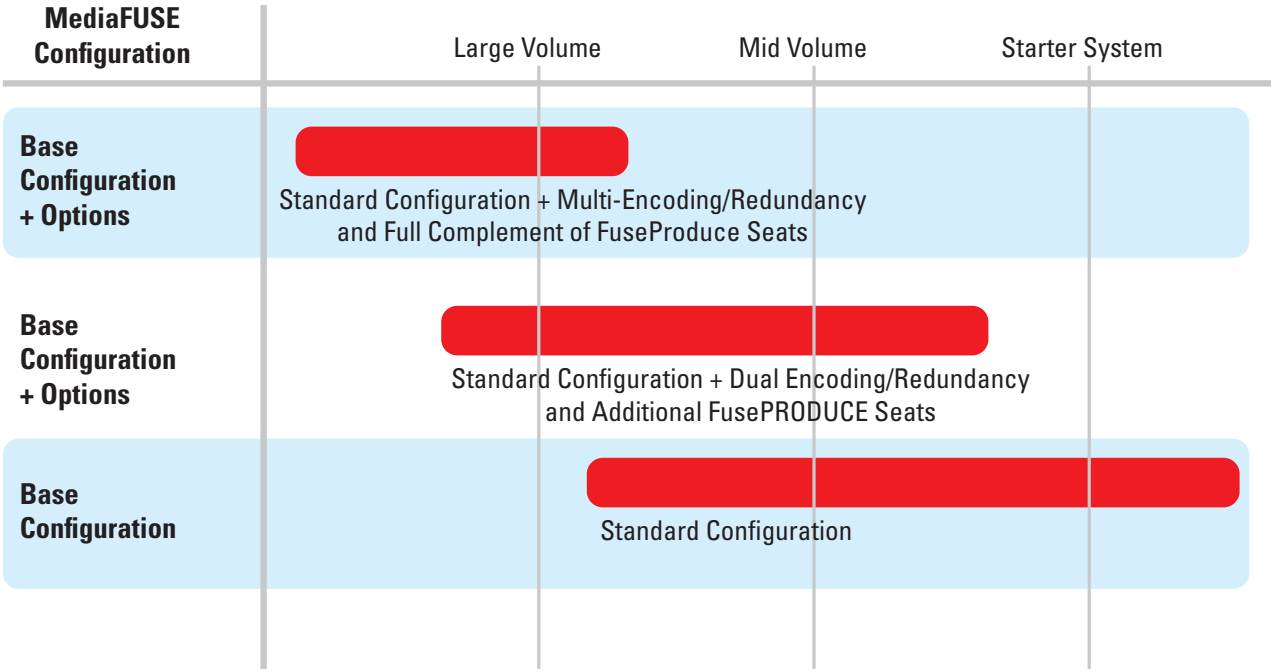
System Configuration and Options

The MediaFUSE system is built around a scalable architecture with support for powerful repurposing today and for future expansion as requirements dictate. Options and accessories are available to meet the requirements of all broadcasters and markets.

The base MediaFUSE system includes the hardware and software for a content producer to perform live continuous streaming, and on-demand content repurposing into a variety of formats and bit rates. It also supports a range of options to further increase the capabilities and failsafe security of the system. Larger market-size and high-volume broadcasters can add encoding and transcoding modules, as well as redundancy and other third-party interfaces, to meet their needs.

FuseSAFE Redundancy Control

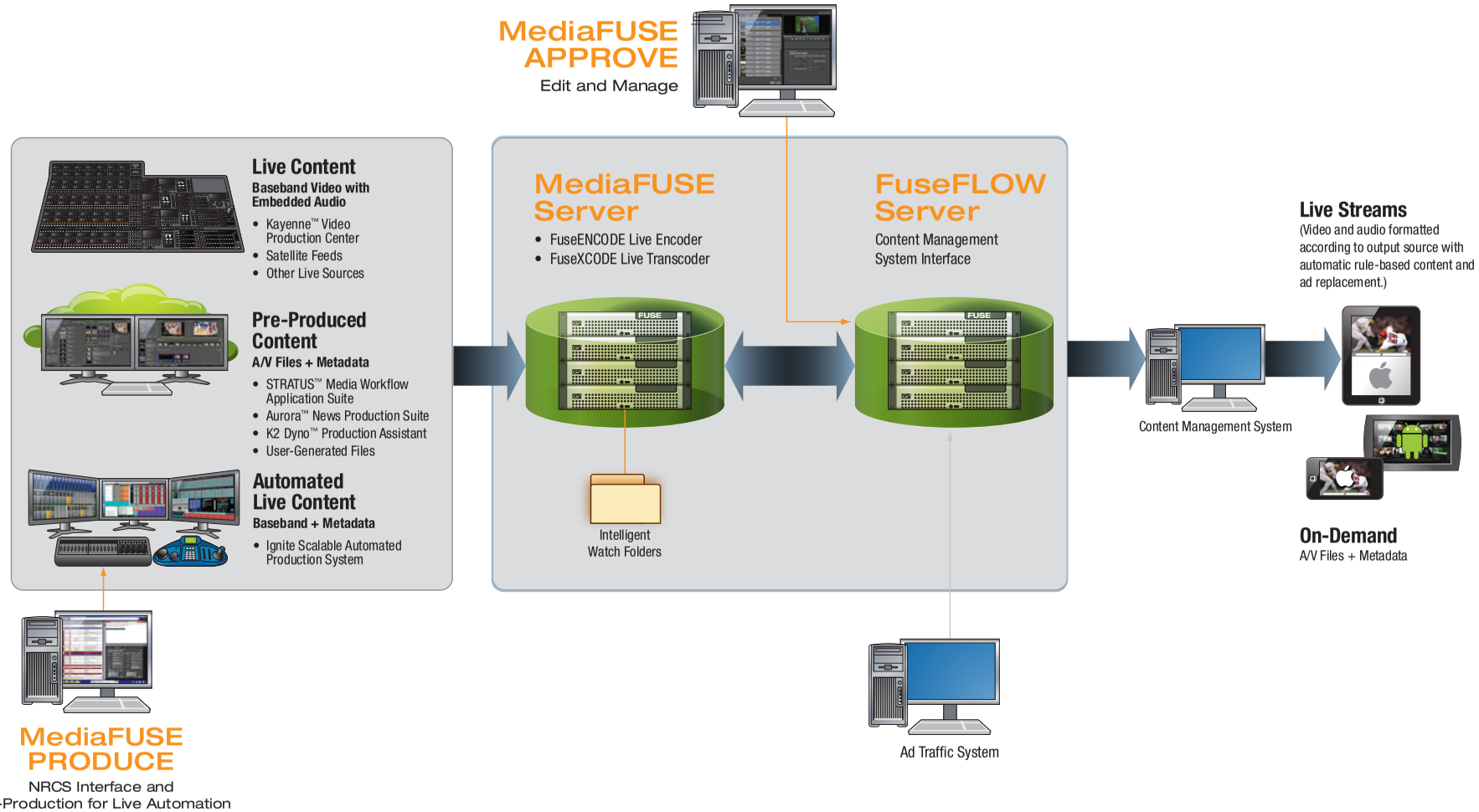
Innovative Approach to Redundancy – The MediaFUSE FuseSAFE Redundancy Control System provides an efficient means of leveraging extra encoding capacity to also serve as redundant, failsafe hardware that will protect the encoded live show in the event of hardware failure. Under normal operation, the broadcaster utilizes additional FuseENCODE and FuseXCODE servers to provide additional encoding and transcoding capability. The FuseSAFE option adds a control system that monitors the online, "live" encoding process, simultaneously creating a backup copy that can be switched to in the event of a hardware failure.



The base MediaFUSE system includes the hardware and software for an Ignite broadcaster to quickly begin repurposing their content efficiently. Larger volume and higher volume broadcasters and content creators can add encoding and transcoding modules, as well as redundancy, to meet their needs. Options and accessories are available to meet the requirements of all broadcasters and markets.

MEDIAFUSE INTEGRATES WITH GRASS VALLEY AND THIRD-PARTY PRODUCTION SYSTEMS

Automated Content Repurposing & Multi-Distribution System



Base Platform

The MediaFUSE for Ignite base platform provides pre-production, production, and post/repurposing tools for efficient, on-demand, and live multi-platform distribution. It includes:

- FuseIGNITE Ignite control-room automation interface
- One FusePRODUCE pre-production seat
- One FuseAPPROVE seat
- One FuseENCODE encoding system
- One FuseXCODE/FuseFLOW administration and transcoding system
- SD and HD input
- Live streaming using Flash, HLS-5, and Windows Media
- Video on demand using Windows Media, Flash, H.264, and more than 40 other popular formats

Flexible Configurations

Additional FusePRODUCE seats can be added as needed to support a complete staff of broadcast journalists.

Additional FuseENCODE and FuseXCODE servers can be added to increase the capacity for simultaneous encoding streams, and to transcode to multiple formats simultaneously.

Interfaces to the supported ASPs and for supported BXF advertising traffic management systems are available as options. The MediaFUSE connection API is available for the custom integration of content management systems "to" MediaFUSE

Innovative Approach to Redundancy

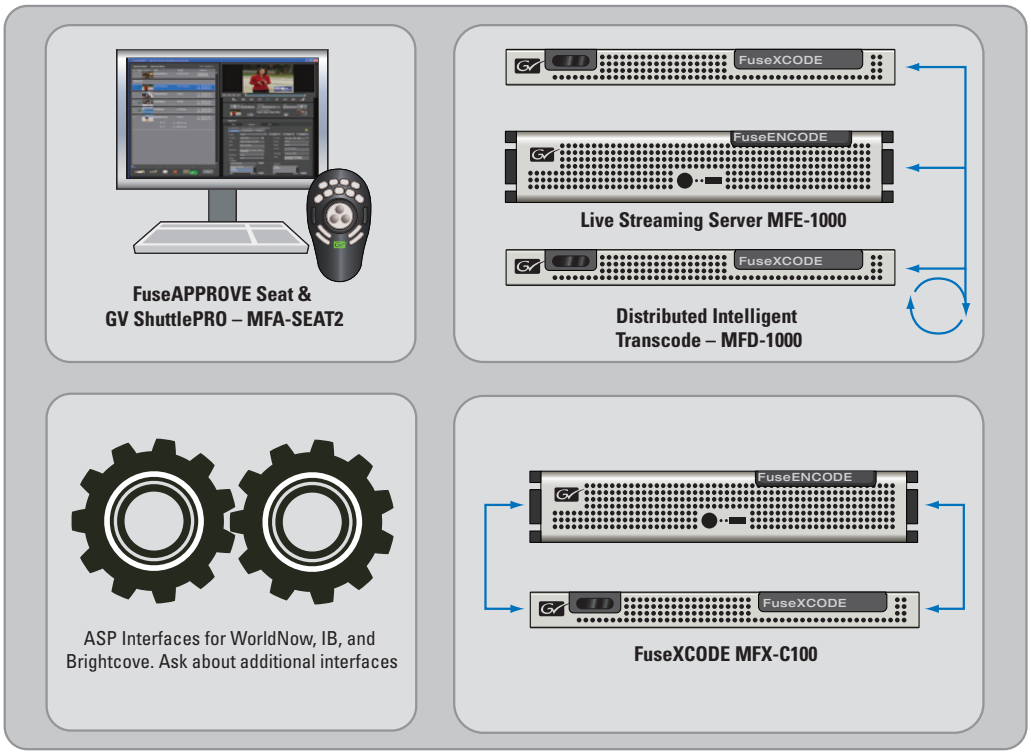
The MediaFUSE FuseSAFE redundancy control system efficiently leverages the system's extra encoding capacity to serve as redundant, failsafe hardware that will protect an encoded live show in the event of hardware failure.

Common Options

The MediaFUSE system can be configured with a range of capability-extending options, including:

- **FusePRODUCE –** This pre-production Active-X application works on one or more ENPS (version 6+) or iNEWS (version 2.6.8+) NRCS producer, director, and/or journalist terminals. FusePRODUCE can tag content and show elements with commands that dictate the repurposing content flow. All base systems come with one FusePRODUCE seat, but these are available on a per-seat basis to support more pre-production stations.
- **Traffic Interface License –** Provides schedule import and as-run reconciliation file export to one supported traffic and billing system. One license is needed for each local or national traffic and billing system.
- **Additional MediaFUSE Encoding Server and Software –** Adds one SD-SDI or HD-SDI signal with discrete stereo AES audio.
- **Additional FuseXCODE System –** A workstation that accepts files (or streams) and produces files (or streams) that can be transrated or transcoded into different compression resolutions and formats, including Windows Media and Flash, 3GP, MXF, and MPEG-2.
- **FuseSAFE MediaFUSE Redundancy Option –** Provides backup software to sense, and automatically switch from, failed hardware to a backup system in a seamless manner, with little or no lost content or processing resources. At least one additional FuseENCODE module is required.

MEDIAFUSE OPTIONS



SPECIFICATIONS

FusePRODUCE Module

The FusePRODUCE module runs on newsroom computer system (NRCS) workstations and requires the following hardware components (supplied by customer):

- NRCS workstation (ENPS or iNEWS) with keyboard and mouse. The FusePRODUCE module is compatible with the AP ENPS and Avid iNEWS NRCS clients and communicates with the NRCS server to update the rundown with the appropriate MediaFUSE metadata

FuseIGNITE Interface

MediaFUSE requires an Ignite system running software version 5.2 or higher

FuseENCODE System

The FuseENCODE system includes the following hardware components:

- High-performance 2 RU server with an HD/SD-SDI video capture input and a minimum of:
  - 4 GB RAM and 750 MB storage space
- Network interfaces:
  - One gigabit Ethernet NIC for use with the content network
  - One 10/100Base-T minimum NIC for use with the control network
- Video capture – input is dual-mode HD/SD-SDI video with embedded AES/EBU audio

FuseENCODE Server

The FuseENCODE server includes video, audio, control, and encoded content connections

Connection type/connection features:

- Video: Standard-definition (SD) video connection is SDI (SMPTE 259M on BNC)
- Audio: Connections include analog (XLR) through the supplied analog audio embedder, embedded in SDI (SMPTE 272M on BNC)

Control network features:

- All control and configuration connections with FuseENCODE server are via TCP/IP
- Connection points include the Ignite module and FuseFLOW Web services
- The configuration and control protocol is in XML format

Live content: The live, encoded content is streamed via TCP/ IP on the content network to the CDN in Flash, HLS-5 (for HTML-5), and WMV formats

Recorded content: The encoded content is transferred to the FuseFLOW server with NTFS over TCP/IP on the content network

HD and SD video features: Encoded HD and SD video. SD resolutions include NTSC (up to 720x480) or PAL (up to 720x576) at 64 kb/s to 10 Mb/s. HD resolutions up to 1920x1080i60 or 1280x720p60 at 5 to 20 Mb/s. The connection is a dual-rate HD/SD-SDI (SMPTE 259M or SMPTE 292M on BNC)

FuseAPPROVE Module

Minimum hardware requirements for the FuseAPPROVE workstation (supplied by customer):

- Windows XP Service Pack 3 or later workstation with graphics card and monitor (1024x768 minimum resolution)
- Network interfaces: Gigabit Ethernet NIC for connection with the content network
- Jog/shuttle controller (supplied with the FuseAPPROVE application) – external jog/shuttle controller improves the efficiency of reviewing and approving content. Note: The FuseAPPROVE and FusePRODUCE applications can exist on the same capable computer, if desired.

FuseXCODE System

The FuseXCODE system includes the following hardware components:

- High performance 1 RU server that contains a minimum of:
  - 4 GB RAM and 750 MB storage space
- Network interfaces:
  - One gigabit Ethernet NIC for use with the content network
  - One 10/100Base-T minimum NIC for use with the control network

Transcoding Content

The FuseXCODE server accepts the master show file and then segments and produces files that are transcoded into different compression resolutions and formats that include:

- WMV
- Flash
- 3GP
- MXF (Material eXchange Format)
- MPEG-2
- Additional formats supported

FuseFLOW System

The FuseFLOW system includes the following hardware components:

- 3.75 TB RAID-5 storage space
- At least 4 GB RAM
- Network interfaces:
  - One gigabit Ethernet NIC for use with the content gigabit Ethernet network
  - One 10/100Base-T minimum NIC for use with the control network

The FuseFLOW system comes with a keyboard and mouse

ORDERING INFORMATION

Please contact your authorized Grass Valley representative.

CUSTOMER SUPPORT & PROFESSIONAL SERVICES

Our customer support and professional services offerings ensure optimal system performance and maximize uptime. These services include call centers staffed around the clock, commissioning, professional training courses, and technical maintenance programs and service agreements.

www.grassvalley.com/support

grass valley