

# VIDEO AT THE EDGE

PROFESSIONAL IPTV SOLUTIONS FOR BROADCAST, EDUCATIONAL,  
CORPORATE, MEDICAL AND GOVERNMENT APPLICATIONS



Visionary  Solutions, Inc

[VSICAM.COM](http://VSICAM.COM)



# A SINGLE SCALABLE NETWORK

FOR YOUR VIDEO AS WELL AS YOUR COMPUTER NEEDS

## Take the next step

The integration of video content and video equipment with Internet Protocol networks is the next big step in media.

This change has already taken place in some organizations. There's no longer any reason to design, install and maintain a separate infrastructure for AV transport and communications, when you already have an IP network.

Think of the savings in cost and frustration: No more extra cable pulls. No more worries about signal loss, noise and degradation. No more troubleshooting of complex, nonstandard systems. In most cases, you can be ready for IPTV with inexpensive, straightforward upgrades to your existing network. You'll gain flexibility, control, integration, reliability and efficiency, not only for your video program but across the organization.

A single network for your voice, data and video applications is within reach. What has been missing is a practical, affordable means of bringing analog and digital media formats to the network in real time. We offer a solution that is reliable 24/7, easy to manage and support, scalable and based on the latest industry standards.

## Video at the edge

Though the world is moving to one big network, not everyone can afford the same position in its topology.

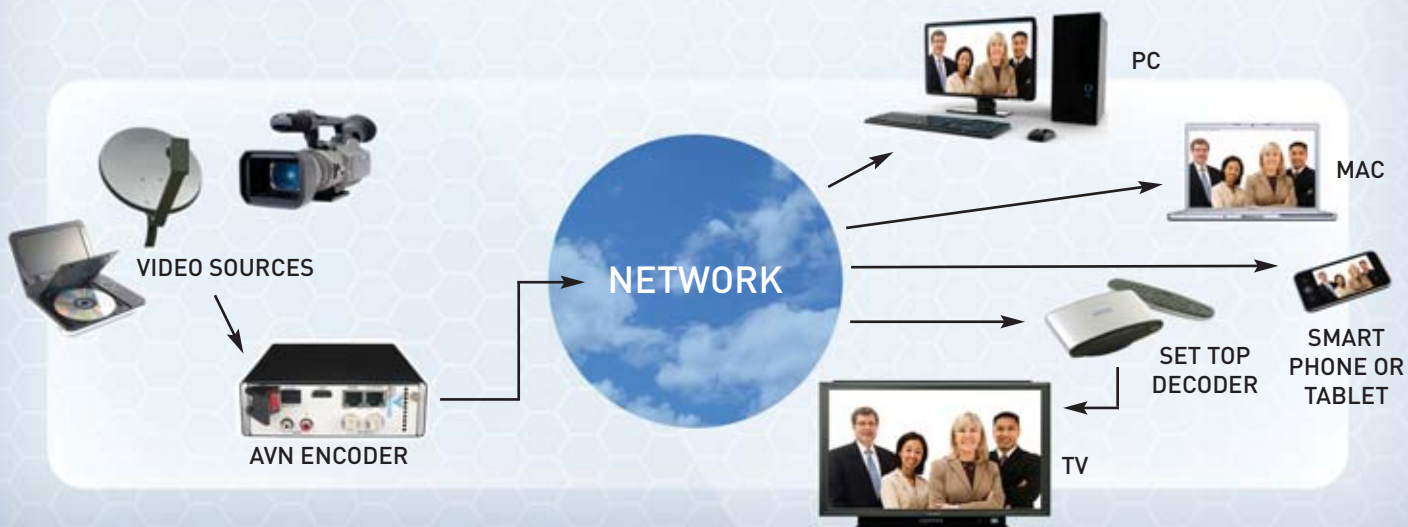
At or near the center of the net are the largest telcos, cable companies, government agencies, content delivery network and Internet providers. Very large organizations like these can afford the most expensive servers and encoders because they can spread their costs over hundreds of thousands of users or subscribers.

Smaller organizations have much more limited budgets, yet their clients and employees still expect the best production values.

At Visionary Solutions, we design our products for people living and working at the edge of the public Internet as well as those using LANs, WANs and virtual private networks.

We engineer our "edge acquisition" and "edge distribution" products to be cost effective, easy to use and of very high quality.

We are pushing the envelope to provide value in a new technology, making us the cost performance leader in professional IPTV.





## Full-screen, full-resolution, HD and SD digital video

Visionary Solutions encoders produce full-motion, full resolution standard or high definition video streams in MPEG-2 or h.264/ MPEG-4 formats. Video and audio are processed in real time for digital delivery to private or public viewers connected to high speed LANs, WANs or the Internet. Advantages include:

- Real-time encoding from live or prerecorded sources
- Standard and high-definition video with stereo audio
- Transport over an affordable IP infrastructure
- Compatible with multicast, webcast and video-on-demand protocols

VSI encoders provide HD and SD audio/video quality that rivals competitive broadcast equipment costing up to five times more. Depending on the product, our encoders can provide from 100 kilobits per second (kbps) to 20 megabits per second (Mbps) total stream bit rates, accommodating everything from Internet transmissions to the highest quality HD demands.

The latest compression standard, referred to as h.264 or MPEG-4 Part 10/AVC, is up to twice as efficient as MPEG-2 and can deliver standard or high definition video with a huge savings in bandwidth. Using h.264 compression and our encoders, you can achieve broadcast quality audio/video at total bit rates between 2 and 3 Mbps for SD streams, between 5 and 7 Mbps for 720p HD streams and between 6 and 10 Mbps for 1080p HD streams. Even higher bit rates (20 Mbps) are possible for the increased video accuracy required in the most critical applications.

VSI customers are using our products for broadcast and cable television feeds, building-wide TV distribution systems, conference center AV, university or special event webcasts, multicasts and podcasts, digital signage networks, educational and corporate TV, videoconferencing and telemedicine.



## About Visionary Solutions

Visionary Solutions, Inc. (VSI) designs and manufactures IPTV hardware and software and offers a growing range of video over IP solutions. We also meet the core video technology needs of various OEMs in industries ranging from healthcare to security.

Located in Santa Barbara, California, VSI was founded in 1995 and is privately held. We design and manufacture all of our equipment in the United States. We are known for the quality and value of our products and our professional tech support.

# WHAT CAN IPTV DO FOR YOU?

VISIONARY SOLUTIONS HAS OVER 4,000 ENCODERS INSTALLED WORLDWIDE,  
USED IN A BROAD ARRAY OF APPLICATIONS.

## In a regional broadcast or cable TV station

Smaller TV broadcasters often need to transport high quality video from remote feeds to the studio or from the station to parent networks.

- AndoverTV, a PEG station in Massachusetts, uses AVN220 encoders to transport video over the town's virtual LAN from five remote locations, then serves it in real time to Comcast and Verizon.
- A number of network TV affiliates use VSI gear to encode news and weather feeds and transport them to their studios for over-the-air broadcast.
- A Colombian radio station is webcasting music videos from their website, telemusicahit.com, using our PackeTV Webcaster.



## At a school or university

Visionary Solutions' educational customers use our systems for media distribution, webcasting and multicasts.

- Huron Valley Schools in Southeastern Michigan use VSI encoders in building-wide systems that distribute TV and educational videos to multiple classrooms.
- Michigan Tech University uses AVN210 encoders to multicast student-produced programming on the Internet2.
- The Madison County School District in Georgia uses VSI hardware to encode video from their public-access educational channel and distribute it to classroom computers and projection systems over their IP infrastructure.
- Blue Ridge Community College in Virginia multicasts an internal video information channel across their campus using VSI gear.



## On a corporate or government network

Moving news, public information and training videos over an enterprise network can enhance and simplify critical communications.

- The AFL-CIO is using a VSI system to encode eight cable news feeds, including CNN and C-SPAN, and stream them over its wide area network for executive use.
- A Chicago-based airline is streaming 17 TV and cable news feeds to executives so they can monitor major media coverage from their PCs.
- A number of other corporate and government offices, including Northrop Grumman, Sandia National Laboratories, NASA's Johnson Space Center and Raytheon are using VSI gear for various video distribution applications.



## In a digital signage network

VSI systems provide an affordable way to utilize IP networks to distribute high-impact public notices, advertising and emergency messages.

- Michigan Tech is using Visionary Solutions equipment to expand and replace a campus-wide signage and emergency broadcast system by tying an existing head end into its IP network.
- Progressive Gaming International Corporation is using VSI encoders for signage applications in a number of casinos.





## In a hospital, hotel or multi-residence building

Private network administrators use Visionary Solutions products to multicast TV and in-house video to viewers across large buildings and campuses.

- Metro Hospital in Grand Rapids, Michigan encodes 54 satellite TV channels, then delivers them, together with educational videos, to 208 patient rooms, lobbies and public areas over their IP network.

- A number of large hotel and condominium projects are underway worldwide using VSI equipment to encode television for distribution to guest rooms and residences.



## For AV distribution and overflow rooms

Moving multimedia content to breakout and overflow rooms typically requires expensive switchers and high-cost wiring. VSI customers use IP infrastructure, cutting costs dramatically with no loss of quality or control.

- U.S. District Courts in New York, Louisiana, Virginia, Rhode Island and Mississippi are using VSI encoders to transport audio and video from higher-profile trials and hearings to overflow rooms able to handle large audiences.

- Several large corporations are doing the same within their conference and training centers.
- The Loma Linda University School of Dentistry encodes video in operating rooms for viewing in classrooms and lecture halls.



## At rural telcos and smaller ISPs

Smaller telecommunications companies and Internet service providers are using VSI gear for video multicasts and webcasts.

- A number of overseas and niche domestic providers will soon offer multicast and on-demand television services to their subscribers over an IP infrastructure.

- Several domestic and overseas firms, including Qwest Communications, Iowa Communications Network, and the West African Togo Telecom use VSI encoders for video transport and backhaul applications on their internal networks.



## In videoconferencing or telemedicine

In situations where you regularly connect to a fixed number of locations over a private network, VSI gear can be considerably less expensive than traditional teleconferencing tools. It can also use less bandwidth and provide far better quality.

With this type of setup, there is no need for a traditional conferencing codec, gateway or MCU, and there are no connection costs once you have configured your network.

- Cisco Systems uses AVN-series encoders to demonstrate network capabilities in a number of hospital applications.
- Johns Hopkins Hospital in Baltimore is using VSI gear for intra-hospital video communications.
- Several school districts around the nation are considering linking all of their buildings in this manner for affordable, high-end distance learning.



**Our customers continue to find new uses for our products.  
Be sure to check our website for updates and customer case studies.**

# HIGHEST-QUALITY VIDEO OVER AN IP NETWORK OR THE INTERNET

INDUSTRY STANDARD FORMATS – NO NEED FOR PROPRIETARY SOFTWARE OR SPECIAL WIRING

## IP Video Encoders

Visionary Solutions encoders can turn video from almost any source into full-screen, full-resolution Internet Protocol digital video in real time.

Each AVN unit encodes one channel of standard or high definition video and audio and streams it at extremely high quality over LAN or WAN infrastructures. Each connects via a standard RJ-45 Ethernet port and provides at least 30 frames per second and up to 720 x 480 resolution (SD) or 1920 x 1080 (HD) –or you can stream at a reduced resolution to conserve bandwidth. Viewers can watch on a PC or Mac (with appropriate plug-in), on a smart phone or tablet, or on a standard TV using an optional set-top decoder box. VSI's newest products (AVN422, AVN441, and AVN443) feature modular firmware architecture, which allows users to purchase only those features they need but upgrade as requirements change. Optional add-on-modules currently include 720p, 1080i (with 1080p @24 support), 1080p @60, and Forward Error Correction (FEC).

Warranty: one year (parts and labor). Ask about our extended warranty and support options.



## AVN200 Stand Alone Encoder

Low-cost device serves MPEG-2 video at 1.5 to 7.5 megabits/second (Mbps) plus mono or stereo audio (using a 1/8" stereo input). Has RS-232 and RS-422 control for use with third-party control units or CCTV security systems.

## AVN210 Rack Mount Encoder



Robust and versatile MPEG-2 server streams 1.5 to 7.5 Mbps and has balanced and unbalanced audio inputs and a pre-amp with bass, treble and volume controls. Full RS-232 control. Fits in standard equipment rack.

## AVN220 Encoder Blade

Compact MPEG-2 server streams at 1.5 to 15 Mbps. Has balanced and unbalanced audio inputs and volume control plus RS-232 and 422 control accessed via an RJ-45 receptacle. Ideal for larger systems - mounts in a high-density Media Processing Platform (up to 17 channels in a three RU chassis size).



## AVN420 Encoder Blade

Uses h.264 (MPEG-4 Part 10/AVC) video for high quality at lower bandwidths. Shares the features of the AVN220 and offers similar quality at 100 Kbps to 4 Mbps. Mounts in a high-density Media Processing Platform.



## AVN422 High Definition Capable Encoder Blade

Encodes digital video (HDMI input) up to 1080p 60 in an h.264 stream (MPEG-4 Part 10/AVC) at 5 to 20 Mbps throughput. Mounts in a high density Media Processing Platform. Optional FEC module available.



## AVN441 High Definition Capable Encoder Blade

Encodes analog or digital video (component, HDMI and Composite inputs) up to 1080p 60 in an h.264 stream (MPEG-4 Part 10/AVC) at 5 to 20 Mbps throughput. Mounts in a high density Media Processing Platform. Closed Captioning available on Composite input. Optional FEC module available.



## AVN443 High Definition Capable Encoder Blade

Encodes digital video (HDMI and HD/SD-SDI inputs) up to 1080p 60 in an h.264 stream (MPEG-4 Part 10/AVC) at 5 to 20 Mbps. Mounts in a high density Media Processing Platform. Closed Captioning available with HD/SD-SDI input. Optional FEC module available.



## Media Processing Platforms

House AVN encoder blades in a high-density, space-saving chassis that can itself be rack-mounted.



**The MPP200** is a one RU tall chassis that holds two blades for two channels of IPTV.

**The MPP1700** is a three RU chassis built to hold up to 17 blades for 17 channels. Two PSA200 power supplies may be fitted to each MPP1700 for redundant, fail-safe power.



## IP Video Decoders

A set-top box / decoder will allow you to view MPEG-2 or h.264 streaming video on a standard television or video monitor.

**Amino IPTV** set-top boxes have an RJ-45 Ethernet port to plug into your network plus outputs to your TV. Each can be controlled from a browser. H models include features for the hospitality market.



**Amino A125** decodes any AVN standard-definition stream, including h.264 and MPEG-4 Part 10/AVC as well as MPEG-2 video. It outputs composite, S-video, RGB and component plus stereo audio.



**Amino A130, A130H and A130M** are cost-effective SD and HD decoders that output 720p and 1080i (plus stereo audio and Dolby 5.1 surround) from any AVN encoder (h.264 and MPEG-2). HDMI 1.2a, component, optical, composite & USB2 outputs.





## VSiCaster™

An easy-to-use webcasting system that can work with a Content Delivery Network provider (CDN) to give you a complete end-to-end streaming solution.

Professionals and beginners can now broadcast high-quality video over the Internet, reaching hundreds or thousands of viewers.

Setup is simple. Connect any analog source such as a camera, DVD/VCR or video server, plug it into an Internet-enabled network and start streaming. Schedule webcasts that are viewable by any PC, Mac, smart phone, tablet or TV/set-top box with a QuickTime®, Flash® or VLC™ plugin.

If you prefer, you can use VSiCaster with a Wowza® Media Server to bring your webcasting solution in-house.

Our package includes the VSiCaster hardware with one or two encoder blades. Or buy it with a CDN subscription from NetroMedia® for a substantial discount.

With VSiCaster you supply the content and we take care of the rest.

## PackeTV® Manager

A multifunction application that securely manages and simultaneously controls all of the AVN-series encoders installed on a network. Use it to discover and query each remote AVN unit, start/stop streams, set network properties, update device firmware and configure all encoding parameters.

With PackeTV Manager's multi-threaded capabilities, administrators can configure and control a single encoder or all the AVNs on the LAN simultaneously. This functionality is particularly helpful for mass configuration when the same setting or command needs to be applied to multiple devices: for example, firmware updates and system wide stops, starts or reboots.

System requirements: Windows XP, Vista or Windows 7.



## AVN ENCODER COMPARISON

	AVN200	AVN210	AVN220	AVN420/VSiCaster	AVN422	AVN441	AVN443
VIDEO COMPRESSION	MPEG-2	MPEG-2	MPEG-2	h.264 (MPEG-4 Part 10/AVC)	h.264 (MPEG-4 Part 10/AVC)	h.264 (MPEG-4 Part 10/AVC)	h.264 (MPEG-4 Part 10/AVC)
BITRATE	1.5 to 7.5 Mbps	1.5 to 7.5 Mbps	1.5 to 15 Mbps	100 kbps to 4 Mbps	HD 5-20 Mbps SD 2-10 Mbps	HD 5-20 Mbps SD 2-10 Mbps	HD 5-20 Mbps SD 2-10 Mbps
FORMAT	D1 to CIF	D1 to CIF	D1 to CIF	D1 to 1/2 CIF	1080p60 to 480i59	1080p60 to 480i59	1080p60 to 480i59
ANALOG VIDEO INPUT	Composite BNC S-Video	Composite BNC RCA, S-Video	Composite BNC S-Video	Composite BNC S-Video	N/A	Composite BNC Component	N/A
DIGITAL AV INPUT	N/A	N/A	N/A	N/A	HDMI / DVI-D	HDMI / DVI-D	HDMI / DVI-D SDI (SD, HD, 3G) w/Loop Through
AUDIO COMPRESSION	MPEG1-L2	MPEG1-L2	MPEG1-L2	MPEG1-L2, ACC	MPEG1-L2, AAC	MPEG1-L2, ACC	MPEG1-L2, AAC
AUDIO INPUT (STEREO)	Unbalanced 3.5mm Stereo	Unbalanced RCA Balanced XLR	Unbal & Bal Terminal Block	Unbal & Bal Terminal Block	Embedded, Unbal & Bal, Terminal Block	Embedded, Unbal & Bal, Terminal Block RCA	Embedded, Unbal & Bal, Terminal Block RCA
AUDIO INPUT GAIN	None	Preamp w Multi Controls	Preamp w Volume & Mute	Preamp w Volume & Mute	Preamp w Volume & Mute	Preamp w Volume & Mute	Preamp w Volume & Mute
MANAGEMENT	Browser PackeTV Telnet RS-232 RS-422	Browser PackeTV Telnet RS-232	Browser PackeTV Telnet Serial (RJ-45)	Browser PackeTV Telnet Serial (RJ-45)	Browser PackeTV Telnet Serial (RJ-45)	Browser PackeTV Telnet Serial (RJ-45)	Browser PackeTV Telnet Serial (RJ-45)
FORM FACTOR	Box	1 RU Rack-mount	Blade	Blade	Blade	Blade	Blade
SMPTE-2022 FEC	No	No	No	Future	Yes	Yes	Yes
CC CLOSED CAPTIONING	Yes (EIA-608)	Yes (EIA-608)	Yes (EIA-608)	No	No	Yes (EIA-608) [Composite Only]	Yes (EIA-608 & EIA-708) [SDI Only]
POWER REQ	100 - 240V 5.6 watt	100 - 240V 7.0 watt	100 - 240V 4.75 watt	100 - 240V 3.0 watt	100 - 240V 4.25 watt	100 - 240V 4.25 watt	100 - 240V 4.75 watt

# EDGE AQUISITION

## REAL TIME ENCODING AND TRANSPORT AT THE EDGE OF THE NETWORK

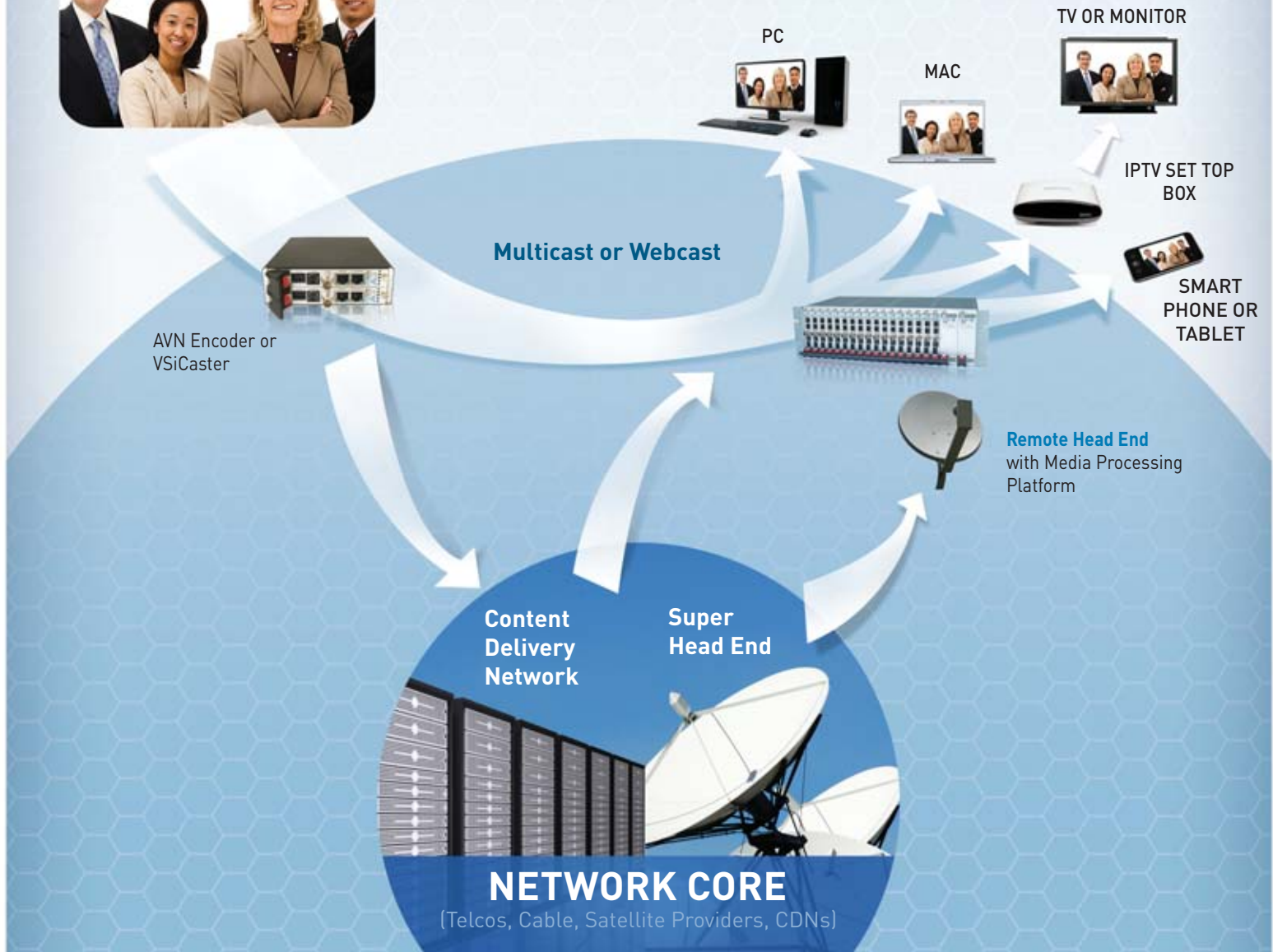
**Video Source:** local access programs, lectures & classes, weather & news feeds, digital signage content, training videos, surveillance feeds, tapes & DVDs



# EDGE DISTRIBUTION

## REAL TIME TRANSPORT AND DECODING AT THE EDGE OF THE NETWORK

In homes, classrooms, offices, hospitals, conference areas, hotels and digital signage networks



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