



AV Distribution Technology Comparison

HDBASET vs. AVOIP vs. IPTV

AV Distribution Technology Options

Video distribution within facilities requires choosing between different technology approaches including RF, HDBaseT, AV over IP, and IPTV. In a new build scenario, system designers have the freedom to select a specific AV distribution technology and specify the network requirements from the ground up. In an upgrade scenario, the video distribution options may be more limited by existing infrastructure design or network technology constraints. In either case, designers must consider many factors for the video distribution system including the number of sources, the number of destinations planned, and the type of transport infrastructure planned or available.

Although projects may specify an AV distribution technology because of legacy technology in place or specific customer request, it is still important to consider how the video distribution may be used in the future and design a solution that can support evolving requirements. Newer IP based solutions like AV over IP and IPTV provide a higher degree of functionality and features for consideration.

Some questions to consider:

- What is the overall budget and is it driven by number of video sources, viewers or both?
- Are there bandwidth constraints on the IP network?
- Does latency from the video source to viewing device matter?
- Is encryption important to protect and secure audio/video content?
- Will users need access to video on PCs or mobile devices?
- Are video walls for displaying the video in certain locations desired?
- Will there be Digital Signage?
- Will users want to record videos and access those on-demand?

The solution that is deployed at a minimum should meet two basic requirements:

- 1) The upgraded AV distribution platform should be an immediate improvement for users.
- 2) The platform should be flexible to support future features and system requirements.

Designers and system integrators should look at the entire technology landscape to truly harness the value of the video distribution network being planned. Enterprises are relying on the expertise of their vendors to compare the many features of the various solutions that are available and recommend the best solution for their specific business needs and video workflows. As with any comparison, there are trade-offs that must be considered between the different technologies and deployments, so taking the time to do this analysis, will enable the exploration of new technologies and the considerations of how the solution will be used today and into the future.

The following chart compares availability of features between the popular options of HDBaseT, AV over IP, and IPTV. The comparison goes beyond traditional video distribution and includes features like mobile playback or digital signage, since IP based systems can support features that go beyond traditional video. As an example, in many deployments, designers are realizing the displays connected to the network can serve “double duty” to support traditional video plus be used as digital signs for promotions and communication to audiences.

AV Distribution – Making the Right Choice

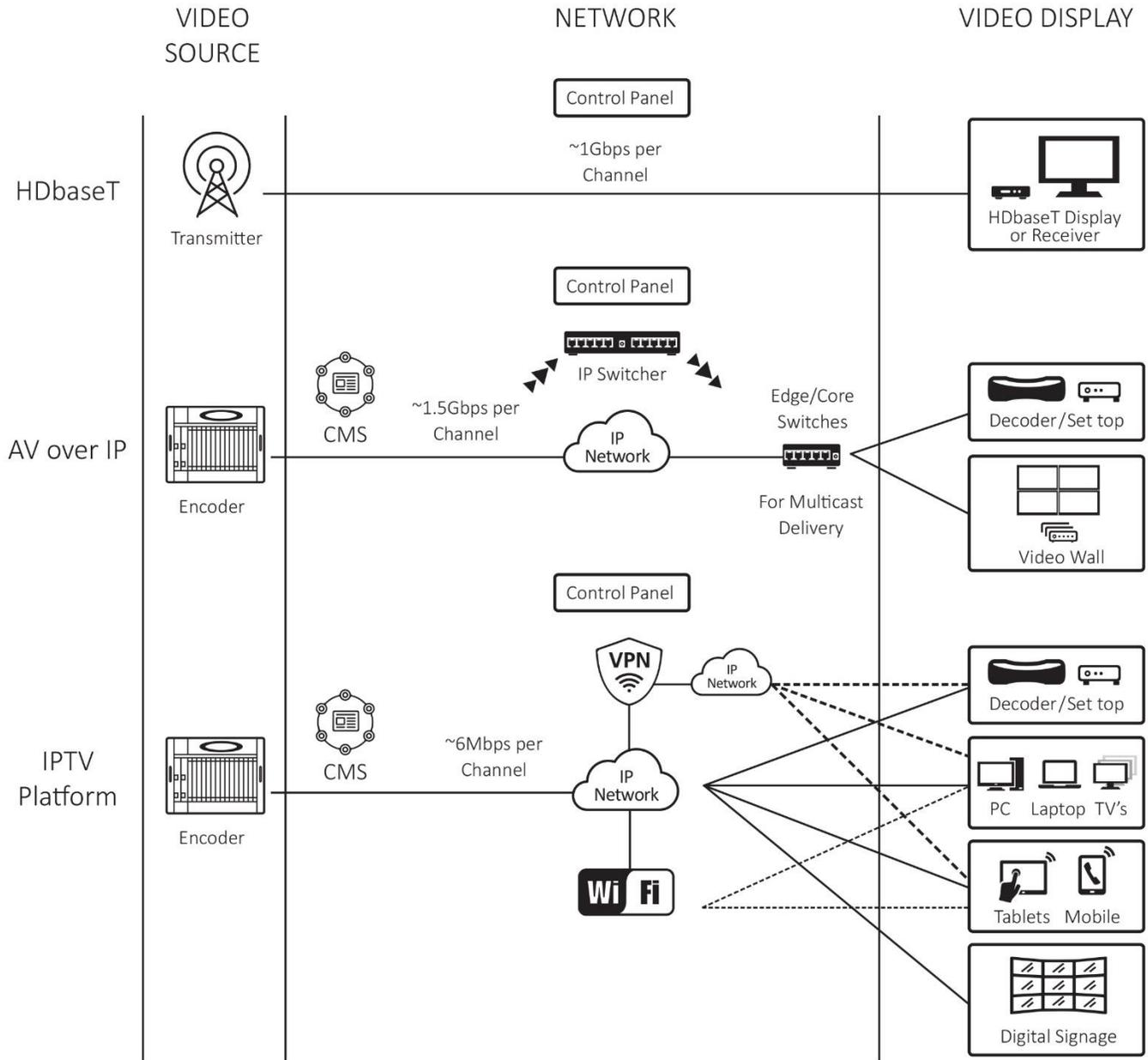
The customer requirements will determine the best feature-set for their AV Distribution and the available budget to consider potential upgrades. HDBaseT is a positive for transmission on smaller networks, but that system comes with a limited set of features and requires a dedicated network with limited distribution range. AV over IP begins to leverage a broader set of IP-based features beyond video, but with high bandwidth requirements. An IPTV system is very feature rich and network efficient, yet it does introduce some latency (50-350ms) when delivering video content when compared to uncompressed HDBaseT or AVoIP.

Another factor to consider is the capability and expertise of the personnel tasked with deploying and managing the AV Distribution network. Some solutions may require dedicated resources, depending on the size of the system, while other solutions function on the existing IT network and can be managed by an existing network administrator. Regardless of the solution deployed, the enterprise needs to be prepared to have personnel resources available to maintain, support, and trouble-shoot the platform. From the ability to support increased video streams by dividing encoders across routers; to fixing touch panel integration issues for end-point controls; any deployment should consider the personnel required to effectively deploy the new solution.

Conclusion

Overall, IPTV provides the most robust set of features, coupled with the least amount of network components required to make the system function on an existing network. IPTV can scale to support future video streaming requirements and is efficiently delivered to maximize bandwidth performance. Although there is some latency introduced into the video delivery, it is minimal (~350ms) and can be pushed down to ~50ms with Ultra-Low Latency equipment deployed for high-availability deployments. In terms of cost, efficiency, scalability, and security, IPTV should be considered for any AV Distribution deployment or upgrade.

VITEC has over 30 years of experience with IP video delivery and is a proven leader in IPTV deployments with enterprise-grade customers in the government, military, corporate, broadcast, education, medical and entertainment markets. These customers demand reliable, secure, and always-on availability across their networks. VITEC has been able to deploy IPTV solutions to these organizations and scale with them as their video requirements expanded or as their workflow requirements evolved. VITEC is a trusted IPTV partner that will continue to innovate as an IPTV leader dedicated to delivering the best AV Distribution solutions available.



Resolution	SU Sampling	AV over IP	IPTV
1280x720p60	4:2:0	1 Gbps	3 - 6 Mbps
1920x1080p60	4:2:0	1.5 Gbps	4 - 10 Mbps
3840x2160p60	4:2:0	6 Gbps	10 - 20 Mbps