



# The Installers Guide to the MXNet Ecosystem:

written by Matt Murray, AVPro Edge CTO

MXNet is here, and we get asked ALL THE TIME about the picture quality. For years, we have advised customers that the available IP-based video systems simply cannot perform to other technologies' standards (HDMI Direct, HDBaseT, Fiber). And that is still the case. The picture quality on an HDBaseT matrix w/ ICT is still superior (and always will be) because there is ZERO spatial compression. We use ICT to condense the video data, so it fits over the standard HDBaseT pipeline.

AVPro Edge, as a solutions company, understands that not all end users are created equally, and there are MANY job types and profiles. MXNet has some key advantages for the integrator, and we are going to cover those in this document.

## KEY ADVANTAGES OF MXNET

First and foremost, flexibility, and no, I am not talking about more I/O configurations – that's old news. I am talking about system performance optimization. Being network-based inherently gives more possible functions. With MXNet an integrator can:

- Prioritize faster and seamless switching by scaling outputs.
- If using HDR or DV, manage what displays get Metadata
- Optimize zones for intended purposes – One room can be “Pass-Through” where the signal is native (the side effect is the Sink has to re-sync when formats change), or scale it for an entertaining display where seamless is key (Commercial applications and Residential applications for things like outdoor TVs)
- Manage nominal bandwidth for trouble runs.
- Perform “deep” retrofits – make a suitable system using Cat5 – you only need 200MB of link minimum.
- And, obviously, achieve MASSIVE deployments.

Another major benefit is these systems require less “Setup” and less troubleshooting. Since everything is very low bandwidth and HDMI signals are all scaled, it is much less likely you will run into issues. It is more “Set it and forget it.”

## MXNET PICTURE OPTIMIZATION

This is not new news but should be discussed – since we are using a 1G pipe – we need to give ourselves the BEST place to start.

- 1080P and below, not much care needed. This is a very low bandwidth signal, and compression is minimal.

- When using 4K, always choose CHROMA OVER FRAMERATE! If your source has the options of 4K60 4:2:2 and 4K30 4:4:4 ALWAYS choose 4:4:4 (or highest). This is more important with IP Video because spatial compression does not remove and replace; it logarithmically removes data bits with no bias to reduce the payload and still work. These data bits are GONE; they do not come back (like ICT). Think of it like taking a bowling ball and removing the core to reduce weight – it weighs less and is easier to transport, but it will not roll the same.
- With HDR, always let the source function “natively.” This means on Apple TV, Roku, etc., you follow the content parameters (they all have settings – if you don’t know them call us). This will preserve the original content prior to compression. Remember those data bits? Imagine starting with something “non-native” and removing the core, so to speak, and trying to recover it. Remember the bowling ball? Imagine if we first turned it to Jello and then removed the core. The core is gone, and we have the Jello mantle; compounding issues, as you can imagine, can be a mess.

Now the system will let YOU, the installer, choose the priorities. In my home, I have all outputs set to 4K30 with 13 sources, some HDR, one Dolby Vision, 1080P, some 4KSDR, and my AppleTV and ROKU are not native – I am prioritizing switching speed right now. I can take steps to improve picture if I want to. I can disable scaling on critical viewing zones and leave scaling on passive viewing zones. Or go full boar with the previous steps.

## **INTEGRATORS HOLD THE POWER**

Ultimately it is up to YOU, the installer, to decide what is best for the customer. Whatever you do, do not pigeonhole yourself into a single technology – give your customer options as an educated technology partner.

Know the facts, benefits, and disadvantages of the available technology.

To learn more about MXNet, visit [www.AVProEdge.com/MXNet](http://www.AVProEdge.com/MXNet) or give us a call at 8777-886-5112.