



# IP FUNDAMENTALS FOR LIVE MULTI-CAMERA VIDEO

A PRIMER FOR BROADCASTERS AND PRODUCTION FACILITIES

# LIVE VIDEO: SMARTER, BETTER-CONNECTED, MORE FLEXIBLE



# LIVE VIDEO: SMARTER, BETTER-CONNECTED, MORE FLEXIBLE

The vast majority of commentators now agree: IP is the future of live video. For a video pro like yourself, moving to IP is no longer a matter of if—it's a matter of when.

However, for many broadcasters and production facilities, one major question remains: How can you build a strong, successful IP future without scrapping your SDI present?

It can seem like a mammoth task, involving the wholesale ripping and replacing of current technology. Fortunately, it's anything but (you can check out our previous guide [The IP Video Evolution](#) to see how the future looks a lot more familiar than many would have you believe).

The good news is that live IP video doesn't have to be a distant dream, or something you can't build the right foundations for right now. In reality, you'll be building on the capabilities of your current SDI setup, not replacing it.

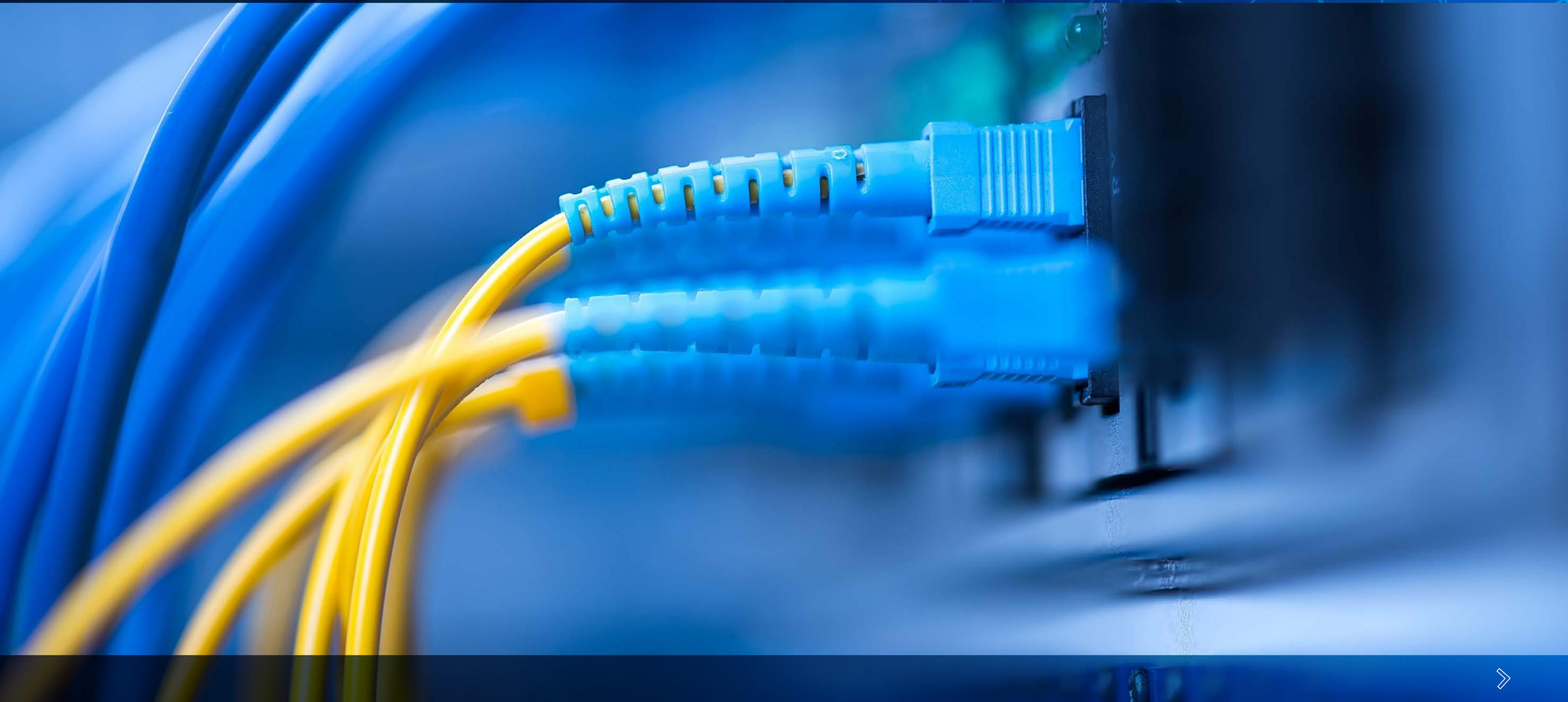
In fact, you may be surprised by just how little you really need to get up and running with IP. By getting the right fundamentals in place today, it's remarkably simple for video facilities and broadcasters of all sizes to start reaping the benefits immediately—but it is essential to get those fundamentals right.

Executed well, IP will take your live multi-camera capabilities to new heights, granting you all kinds of new capabilities without costing the world (or your sanity).



01

# PREPARING YOUR IP NETWORK



# 01

## PREPARING YOUR IP NETWORK

IP by its very nature is dependent on the network supporting it. Live video must be transported at the lowest levels of latency, over a network you can trust to deliver broadcast-level reliability and the highest possible levels of quality.

While traditionally, live video required expensive proprietary systems, with next-generation IP technology, it's possible to transport broadcast-quality video over standard off-the-shelf networking equipment.

This means an IP network for live video won't vary too much in terms of structure from your traditional local area network (LAN). Many systems emerging on the market will, however, demand that you install a dedicated LAN for live video so they can be confident of achieving adequate performance.

The good news is that this isn't the only option. In fact, with our own NDI<sup>®</sup> technology, you can transport live video over your existing LAN. Of course, it needs to be properly configured to meet latency and bandwidth requirements (giving live video priority over other traffic). But, as with so many areas of IP, you've probably already got a lot of what you need to make it a success.



02

# SELECTING BETWEEN STANDARDS



# 02

## SELECTING BETWEEN STANDARDS

Just as with your current SDI setup, live IP video needs to be based on agreed standards. Standards enable the seamless interoperability that makes IP broadcasting simple to manage and operate.

But, because IP is still growing and we're only just moving into the age of all-IP broadcasting, there are multiple standards vying to become the industry's accepted baseline for IP.

As you research your approach, you'll come across options such as NDI®, SMPTE, and ASPEN—and each has their own merits.

While it's important to decide on the standard(s) you want to use, it's also important to avoid locking yourself in to any single one. As you take your first steps into the brave new world of IP broadcasting, the last thing you want is to end up down a path you can't stray from.

At the moment, we're in the middle of a VHS vs Betamax style competition between the frontrunners, and limiting your options now could be costly in the long run.

Fortunately, NewTek's IP Series products provide a simple solution to that problem. They're based on NDI, our freely available standard for live IP video—a standard that's quickly become most prolific in our industry.

With NDI, you can also use NewTek Connect Pro to easily integrate with equipment and sources using SMPTE or ASPEN standards. In practical terms, that means you can bring all of your broadcast tech together, and connect it to an IP environment, regardless of the vendor it's from, or the standards it complies with.

The result? Massive flexibility in how you use IP, much lower risk, and far lower costs of entry to the world of live IP video.



03

# CHOOSING THE RIGHT TECHNOLOGY



# 03

## CHOOSING THE RIGHT TECHNOLOGY

Making the most of IP for live video broadcasting is going to require a certain amount of new technology. But, as we've already mentioned, this doesn't have to mean getting rid of the equipment you've already invested in.

Instead, the focus should be on finding the right solution to bring everything you've already got together via IP. This is the next step for your current broadcast technology, not an entirely new path.

The foundation for your new IP operations is the technology that connects all your existing equipment—however dispersed and diverse. It's this that will unite your production workflow into a single, interconnected IP environment.

That's why we've created technologies and tools such as NDI® and the NewTek IP Series Video Mix

Engine to integrate equipment from virtually any vendor, whether IP or SDI, to create a single interconnected production environment.

With that in place, you can quickly and easily create a truly hybrid IP/SDI environment—one that's both flexible to multiple popular standards and truly vendor agnostic.

It all comes down to one thing—finding new tech that works with what you have now, and which will adapt and evolve with you as you transition further into an IP-centric world.



# 04 ADAPTING YOUR WORKFLOWS TO YOUR NEW CAPABILITIES



# 04 ADAPTING YOUR WORKFLOWS TO YOUR NEW CAPABILITIES

Multi-camera live IP video will enable you to do what was previously impossible (or at least extremely tricky or very expensive in a traditional SDI-only environment). To make the most of your new capabilities, you need to recognize exactly what they are, and evolve your workflows around them.

IP is going to give you greater control over a greater number of cameras and other devices, offering greater scope to scale your workflows. You'll be able to pull live video from more locations—locations that are potentially farther from your primary broadcast studio than ever before. And, you'll be able to consolidate control rooms, creating common resources to power all your output.

That could have a major impact on how you produce content—and the way it looks—enabling you to completely redesign your workflows around your newfound flexibility. It will also make it easier than ever to extend broadcasts and content to web and social channels, enabling you to respond to the new demands and consumption habits of today's viewers.

Everything across your operation can become much more agile and immediate with IP. You can pull live feeds from anywhere that you can connect to your IP network, and your viewers can consume content immediately through a variety of channels and media.

In fact, with workflows built around your new IP capabilities, you can bring your operations into the future and breathe new life into your existing broadcasts.



# TAKE YOUR FIRST STEPS TODAY

Ultimately, by getting these fundamentals right now, you can lay the foundations for the powerful IP-based future of broadcasting, and start reaping the benefits of live IP multi-camera video immediately.

If you're ready to make that move, we're ready to help.



# ABOUT NEWTEK

NewTek is transforming the way people create network-style television content and share it with the world. From sporting events, web-based talk shows, live entertainment, classrooms and corporate communications—to virtually any venue where people want to capture and publish live video, we give our customers the power to grow their audiences, brands, and businesses, faster than ever before.

Learn more at [www.newtek.com](http://www.newtek.com)