



Sports & Live Production: Modern Workflows

Are you ready to up your game?



Building a modern video production system
is similar to building a winning team.
Creating your game plan is the first step.

Whether your production requires a traditional SDI approach, a hybrid workflow, or a ready to go all-in IP solution, Imagine has a strategy that will give you an edge whenever you're ready to jumpstart your IP journey.

Tap into Imagine's experience — gained through the dozens of next-generation deployments we've undertaken around the world. Our in-house experts can answer all your questions and get you quickly up to speed on how to design, deploy and operate an IP live production system.

With our proven, standards-based productions solutions, you can protect your SDI assets, use hybrid workflows where it makes sense, and transition to IP at whatever pace works for your team.

IMAGINE'S IP LEADERSHIP



Pioneer in IP video transport
(first IP contribution product, 1998)

Document editor for **SMPTE
ST 2110** standard

First to design a
standards-based **SDI/IP router**



First to offer a standards-based
pure IP-capable processor

First in processing over
COTS IP 100Gb/sec
switching network

First to deliver UHD video over single
SMPTE ST 2110-20 streams



“At Texas A&M, we like to be leaders. We know we have moved the industry forward, but we could not have done what we did – and we will do in the future – without the support of key technology partners like Imagine...”

Zack Bacon, Chief Broadcast Engineer for 12th Man Productions

BUILD YOUR GAME PLAN AROUND YOUR STRENGTHS.

There's no "right" way to get to IP. It's really a matter of designing and implementing for your specific requirements. At Imagine, we've helped customers take each of these approaches to the IP transition.

BUILD AROUND AN SDI CORE

If you're operating a mostly SDI plant today, but plan to add IP elements sometime in the future, this might be the model for you. You use a modern SDI router, and create some SDI-IP capacity using our high-density gateway. This low-risk path leverages your existing investments while integrating new technology.

GO STRAIGHT TO THE IP END GAME

If you already have a lot of equipment in your plant that natively speaks IP, this is a great option. Deploy IP switches at the core, directly connect IP devices, and then add gateways next to any equipment that speaks SDI. This is a cost-efficient approach, as it enables you to run much less fiber back to the switchers compared to an SDI build, reducing weight and power consumption.

TAKE THE DOWN-THE-MIDDLE "HYBRID" PATH

If you want to move toward IP, but prefer to take a familiar path, consider the hybrid approach. In this model, you have an SDI zone and an IP zone, build translators as tie-lines between them – and let our Magellan control system manage it. This is a great way to move toward IP at a pace that aligns with the availability of budget and the time it takes your staff to get up to speed.





Before you take the plunge into any new technology, it's always smart to take a look at who's already using it. Imagine works with media companies all over the world and at all different stages in the transition to IP live production. Here are a few who have done some cool things on the road to IP.



NORTH POINT MINISTRIES

North Point Ministries in Atlanta has grown to eight campuses and developed a global network of more than 150 partner churches leveraging ST 2110.

- Selenio™ Network Processor • Platinum™ • Magellan™ Control System



TENNIS CHANNEL

Sinclair's Tennis Channel scored an industry first in live cloud playout of a high-profile sporting event from its Imagine-based ST 2110 production facility with cloud environment for pop-up live events.

- Selenio™ Network Processor • Versio™ • Magellan™ Control System



NEP UK

NEP UK capitalized on the demand for high-quality live sports, installing Selenio Network Processor in their largest OB trucks to provide a seamless workflow for delivering UHD and HDR signals.

- Selenio™ Network Processor



TEXAS A&M

Texas A&M's 12th Man Productions used Imagine-based ST 2110 IP connectivity to double what they could do in terms of signal capacity between seven sports venues on the same amount of fiber.

- Selenio™ Network Processor



EMG

EMG standardized on Selenio Network Processor for their modular IP and HDR UHD-enabled live production architecture — designed with the industry's largest sports events in mind.

- Selenio™ Network Processor

NC STATE

DELTA

NORTH CAROLINA STATE UNIVERSITY

NC State set an all-new standard in live course production, deploying a first-of-its-kind Imagine-based ST 2110 distributed system that can be translated to team facilities and coaching rooms.

- Selenio™ Network Processor • Magellan™ Control System • Crestron Integration



GLOBAL PRODUCTION

This Italian OB leader drove its Imagine-equipped SDI-IP UHD truck into the winner's circle during a color shoot-out at Monza, delivering the most accurate rendition of Ferrari's trademark red.

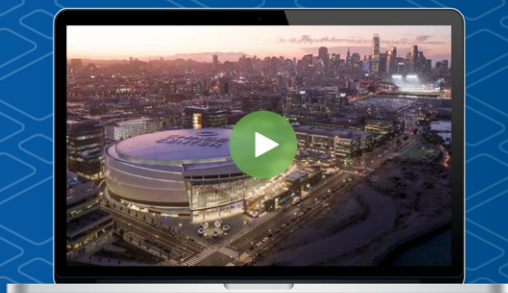
- Selenio™ Network Processor • Platinum™ IP3 • Magellan™ Control System



FISERV FORUM

A LOOK AT ST 2110 AND REMOTE PRODUCTION

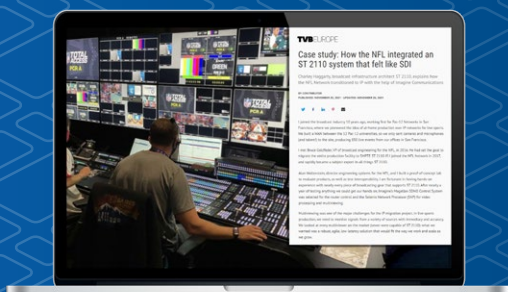
When the Fiserv Forum production system went live in 2018, it was one of the first SMPTE ST 2110 uncompressed IP video systems on earth. Ken Barski, Director of Broadcast Technology at Milwaukee Bucks Inc, discusses how things are going today and the challenges they were able to overcome by moving to IP.



CHASE CENTER

EFFICIENCIES GAINED BY MOVING TO IP

Chase Center, home for the Golden State Warriors, moved to IP connectivity to provide a future-proof production platform for their venue. Scott Heitman, Director, Scoreboard Operations – Golden State Warriors, discusses the creative ways they are using their equipment and the efficiencies gained moving to IP.



NFL NETWORK

MULTIVIEWING FOR SPORTS WITH SPEED AND TECHNIQUE AT THE NFL

NFL Network's Charley Haggarty talks about finding a multiviewer to fit with the migration of the network's production facility to SMPTE ST 2110 IP.

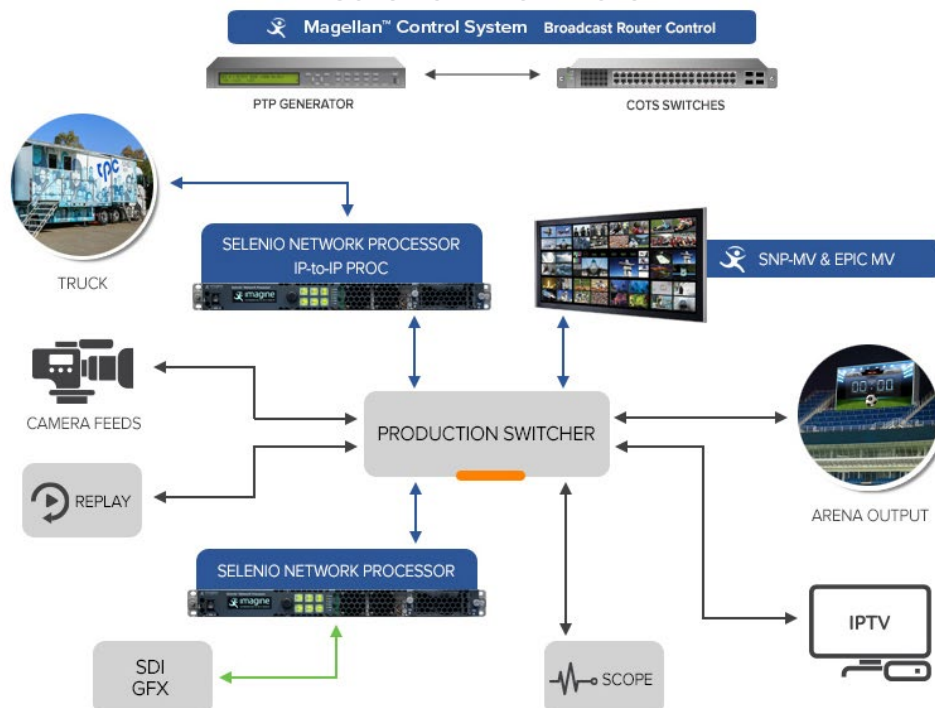
Whether you're planning production infrastructure for your venue, team facility, or production control room, Imagine's award-winning, standards-based solutions enable you to:

- ✓ Leverage existing infrastructure, move to IP and deliver next-gen technologies at any time
- ✓ Provide the full capabilities required for live production via fully integrated, efficient systems
- ✓ Meet all production quality requirements, including UHD and HDR

Our modern, proven production solutions can take your live production operation from full SDI to full IP at whatever pace works for you – and ensure that today's investment can support tomorrow's business.

Most importantly, Imagine production solutions deliver all the benefits of IP connectivity and software flexibility — but with the same performance characteristics and operational look and feel as a traditional SDI system — enabling you to get up to speed quickly with the next-generation technology.

SOLUTION ARCHITECTURE



Selenio™ Network Processor Media Processing Platform



- ✓ First standards-based pure IP-capable processor
- ✓ First in processing over COTS IP 100Gb/sec switching network
- ✓ First to deliver UHD video over single ST 2110-20 streams

FEATURES

- High-density, FPGA-based processing platform
- SMPTE ST 2110 gateway for UHD (with or without HDR) and HD
- Frame sync to PTP with adjustable output phasing and delay
- UHD 2SI/SQD/12G support on BNC connectors
- NMOS 04/05 compliant
- JPEG XS compression
- Automatic Change-Over switch (ACO) on Sync Personality
- Low and deterministic latency
- Delivers enhanced production agility through low-latency operator interaction

SNP-MV | HD/UHD/HDR Ultra-Low Latency Multiviewer



- ✓ Ultra-low latency production multiviewer in space- and power-efficient footprint
- ✓ Unmatched flexibility – easily configurable for different events
- ✓ Support for SDI, IP (SMPTE ST 2110 and/or ST 2022-6), UHD, SDR, HDR

FEATURES

- Each processor supports up to 9 input signals rendered into 1 or 2 UHD displays
- SNP internal processors can be ganged to support up to 36 PiPs on one display
- Extremely low latency from input to display — typically one frame-time
- Native IP inputs and output in SMPTE ST 2110 and/or SMPTE ST 2022-6
- SDI inputs and/or outputs support, including 12G SDI for UHD signals
- Full 10-bit processing pipeline, including HDR-aware color space conversions
- Integrates with industry-standard Tally/UMD and routing protocols

Magellan™ Control System Software Control System for Hybrid Baseband/IP Facilities



- ✓ Simplifies management/operations, making an IP network look like SDI
- ✓ Utilizes COTS IP switching, leveraging the latest generation of IP routers
- ✓ Works seamlessly within existing workflow — no operational disruptions

FEATURES

- Full support for ST 2110, & ST 2022-6 and a vast list of third-party IP endpoints
- Virtual re-entry that works for both SDI and IP routing
- Support for all traditional routing paradigms
- Fast and deterministic switching
- Seamless redundancy switching in main and backup network configuration (SMPTE 2022-7)
- Leverages AMWA NMOS 04/05 to integrate third-party devices without special drivers
- Magellan Live Manager (LM): PathView and AlarmView provide high-value user interaction and information
- Magellan TOUCH: Live production operator-facing control system for SDI, IP, and hybrid — makes broadcast and media operations easy and intuitive

Platinum™ IP3 Hybrid IP, UHD-ready router



- ✓ Highest integration of functionalities – processing, multiviewers, synchronization, IP gateways
- ✓ Simplest path from SDI to IP, HD to UHD, HDR, and future formats
- ✓ Best SDI expansion ability, even while on-air; unlimited scaling when combined with a COTS switch

FEATURES

- Mixed-format video and audio routing
- Field-proven control system enables hybrid infrastructures — SD, HD, IP
- Up to 576x1024 video in a single 28RU frame
- Over 2000x2000 video matrices supported with multiple-frame configurations
- Independent signal paths and crosspoints for video and audio
- Full redundancy for power, control and signals
- Clean and quiet switching for on-air applications
- Enhanced, easy-to-use Magellan™ control system enables dynamic, on-air reconfiguration

DEPLOY WITH CONFIDENCE

At Imagine, we believe we've engineered some awesome IP technology. But if your migration plans include tapping multiple vendors — no problem.

Our open-standard, JT-NM Tested solutions integrate with other SMPTE ST 2110/2059 devices to create a seamless production-to-plaintext IP workflow.

*For more details on the JT-NM Tested program, visit http://jt-nm.org/jt-nm_tested/



YOUR PATH. YOUR PACE.

Take it on with Imagine.

Why Imagine?

EXPERTISE

We have some pretty smart people on our team. Got questions on SMPTE ST 2110? Imagine experts help drive the standards process in SMPTE, AMWA and VSF.

EXPERIENCE

We've done a lot of IP. We can share the many lessons learned that will help you turn disruption into opportunity.

ENDORSEMENTS

You don't have to just take our word for it. Media companies all over the world are working with Imagine to make their IP visions a reality.

Let's get started.

Visit: imaginecommunications.com/ip-infrastructure

