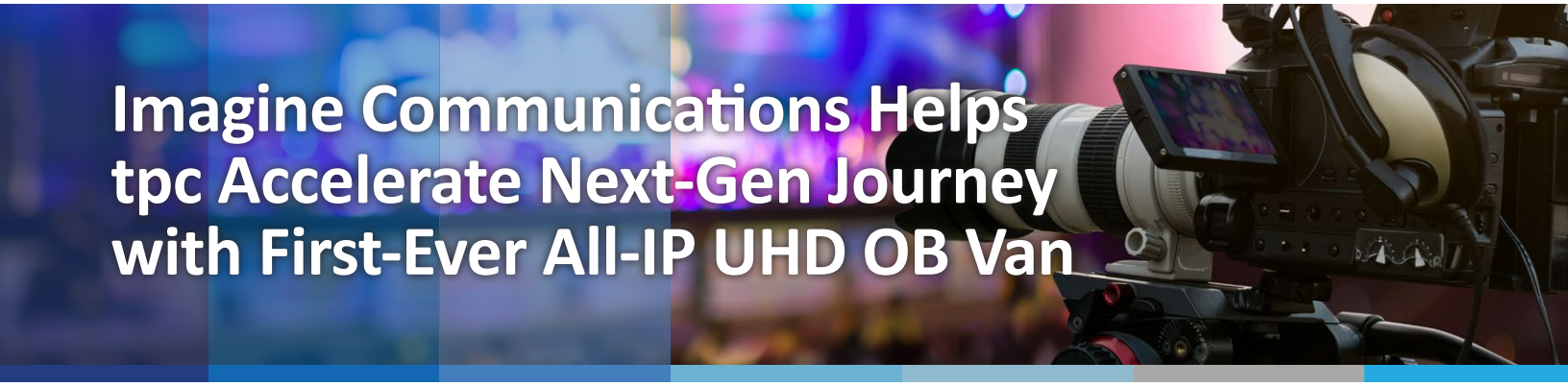
Imagine COMMUNICATIONS™

Case Study



Imagine Communications Helps tpc Accelerate Next-Gen Journey with First-Ever All-IP UHD OB Van

Customer Profile

tpc switzerland ag is the leading broadcast service provider in Switzerland, with extensive expertise in planning, creating and managing audiovisual projects. The company is focused on production for Swiss broadcasters, as well as live production of major national and international events for the Swiss and global markets. tpc manages TV studios, news operations and a fleet of OB trucks.

Business Challenge

When tpc, one of the busiest and most forward-looking broadcast production companies in Europe, was confronted with the retirement of a long-serving outside broadcast truck, the Swiss company made the decision to construct a replacement that would remain state-of-the-art for years to come. That meant building a mobile production unit that was IP at its core and optimized for UHD — but still capable of handling SDI-based signals and cranking out HD content as current market demands dictate.

tpc also required that the new production vehicle be capable of handling uncompressed UHD signals that conformed to industry standards, allowing it to sidestep the need to choose from several competing compression schemes or meander down a proprietary path that could lead to a technology dead end. A futureproof and flexible technology architecture, one that could seamlessly integrate the latest compression schemes, formats and picture-quality enhancements, was also at the top of tpc's wish list.

The high degree of difficulty of tpc's technical requirements severely narrowed the field of qualified technology partners, leading the Swiss broadcast service provider to Imagine Communications, which is currently collaborating with SonoVTS, a leading European systems integrator based in Germany, to deliver to tpc what is expected to be the industry's first OB truck to support uncompressed IP UHD production capabilities using SMPTE 2110.

At the core of the new tpc OB van is Imagine's Selenio™ Network Processor (SNP), both a gateway between the SDI and IP domains and a pure-IP processing engine that is among the first to conform to the SMPTE ST 2110 standard for the transport of discrete UHD video, audio and data signals over IP networks. Compatible with IP routing and switching equipment from all major suppliers, the SNP enables tpc to tap into the exponentially expanding price and performance benefits of commercial-off-the-shelf (COTS) IT equipment, as well as withstand the blistering pace of the evolution of the broadcast industry through seamless integration of the newest procedures, standards and technology innovations.

Customer

- tpc switzerland ag

Industry

- European production company

Challenge

- Construct a next-generation mobile production. vehicle based on industry standards that leverages the latest IP technology to meet today and tomorrow's market requirements at the highest efficiency and quality levels possible

Products

- Selenio™ Network Processor
- EPIC™ MV Multiviewer
- Magellan™ SDN Orchestrator

Business Value

- Industry's first IP-to-IP processing engine that enables support for uncompressed HD and UHD signals based on the SMPTE ST 2110 standard
- Highly scalable and UHD-ready multiviewer allows monitoring of signals through a large number of dedicated screens, with inputs and monitor outputs all in IP
- All-IP, standards-based production vehicle designed to seamlessly scale and evolve to assimilate technology advances and meet future business requirements
- Support for current and in-progress standards to ensure future interoperability and avoidance of proprietary technology dead-ends
- Centralized control system that supports all signal management in a multivendor environment and provides seamless upgrade path to next-generation technology adoption

"Recognizing the rapidly evolving nature of the video production landscape and the need to construct a mobile vehicle with the ability to meet both today's and tomorrow's demand for cost efficiency and high production quality, we conducted a lengthy selection process to find a solution that would deliver next-generation capabilities today and seamlessly adapt new capabilities, such as HDR, as required in the future."

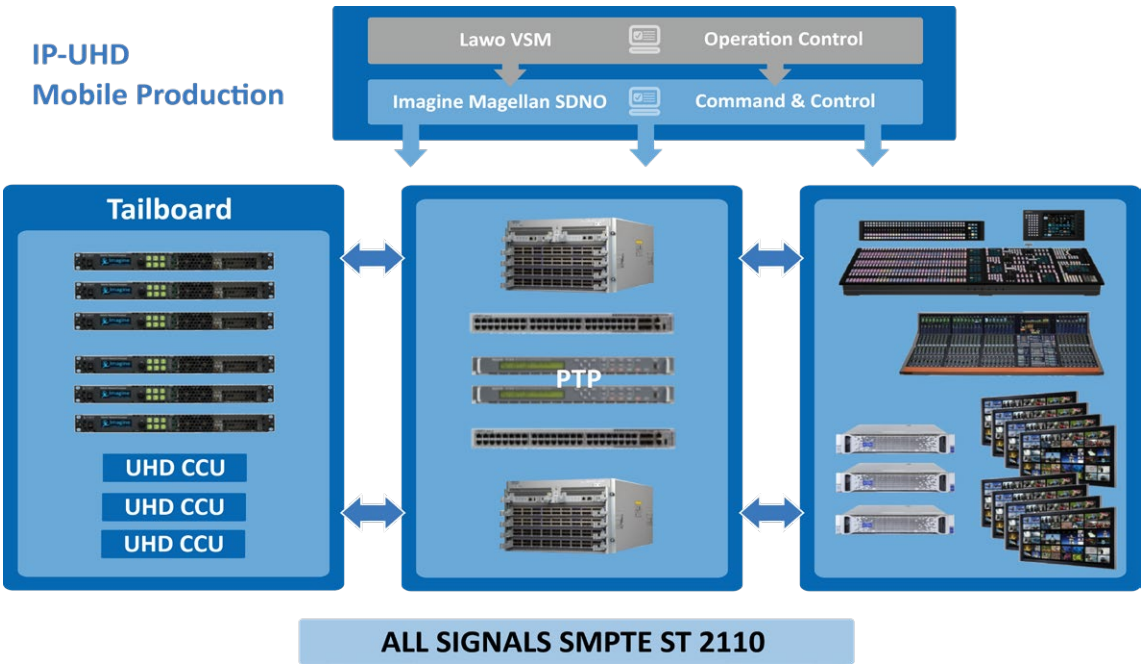
- Andreas Lattmann, CTO of tpc

Technology Solution

A top priority for tpc was the construction of an OB truck that would be able to accommodate current and future market demands by seamlessly supporting UHD, HDR, high frame rates and other picture-quality or technology enhancement that may gain commercial traction over the next decade or so. With SDI beginning to strain under the bandwidth and computational demands of emerging technologies, tpc recognized a move to IP as key to the overall productivity and in-service longevity of the new vehicle. "I believe the real benefit of IP is its ability to accommodate future requirements," said Andreas Lattmann, CTO at tpc. "I think it's the only option when it comes to being fully futureproof."

At the heart of the installation is Imagine's SNP, which supports the processing of uncompressed UHD signals over IP in conformance with SMPTE ST 2110, the industry-consensus standard for the transmission of video, audio and meta data over IP networks. SMPTE ST 2110, is the current destination of the IP standards roadmap endorsed by the Alliance for IP Media Solutions (AIMS). The SNP supports a variety of SDI and IP inputs, as well as HD and UHD formats, enabling tpc to process uncompressed high-quality video signals to meet all customer preferences without requiring a mezzanine compression scheme or relying on nonstandard, proprietary hardware.

Solution Diagram - tpc



Imagine's SNP provides tpc with the full gamut of capabilities required in today's evolving mobile production industry, including HD-UHD up-and-down conversion and color space adjustments, as well as precision timing.

The SNP feeds into a redundant set of COTS switches from Arista Networks using QSFP28 ports over 100GbE links, providing plenty of bandwidth for uncompressed video and audio streams. An IP-to-IP signal processing platform, the SNP provides tpc with the full gamut of capabilities required in today's evolving mobile production industry, including HD-UHD up-and-down conversion and color space adjustments, as well as managing the High Dynamic Range (HDR) adaptations and conversions required for integrating UHD and HD signals. The new processing equipment also provides important synchronization and timing functions, overseeing the integration of new signals into the production environment and helping to assure the optimal timing of ST-2110 signals for interoperability with all other compliant equipment in the tpc truck.

The new tpc vehicle will also rely heavily on next-generation monitoring and control technology from Imagine Communications. The highly scalable and UHD-ready EPIC™ MV multiviewer helps tpc to effectively monitor the signals of a large number of dedicated screens, with inputs and monitor outputs all in IP. Overseeing signal routing is the Magellan™ SDN Orchestrator, a routing control system that has been optimized for hybrid SDI-IP and pure-IP environments.

Business Value

The completion of its new OB vehicle will put tpc in possession of what will be one of the most versatile and state-of-the-art production facilities on the planet. While still enabling the production company to tap into the SDI realm when required, the new OB truck provides tpc with a pure-IP production environment, enabling the company to fully exploit the agility and cost efficiencies of a next-gen technology architecture. A pure-IP approach also lessens the cabling and power consumption requirements of an SDI or hybrid SDI-IP environments. Imagine's SNP makes it possible to perform complex synchronization and processing operations, as well as IP-specific functions, such as Network Address Translation (NAT), completely within the IP domain.

By working with uncompressed and standards-based UHD signals, tpc is able to avoid having to choose among proprietary compression schemes, while at the same time maximizing video quality and minimizing latency. The new production facilities will also be one of the first to exploit advanced capabilities enabled through conformance with the SMPTE ST 2110 specification. The new standard, for examples, gives tpc the added flexibility of breaking out video, audio and auxiliary data into separate, discrete streams, boosting efficiency and flexibility over SDI-based solutions.

"tpc's and Imagine Communications' commitment to SMPTE 2110," says Lattmann, "enables us to meet these high expectations and deliver a solution that will reside on the cutting edge of mobile production for years to come." But tpc's next-gen ambitions extend beyond mobile production. The new OB truck is also a training ground of sorts, says Lattmann, providing an opportunity for the company to thoroughly familiarize itself with IP as it embarks on building out a large, state-of-the-art studio with IP at its core.

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