Selenio™ Network Processor
Connecting Facilities Application Note

How Selenio™ Network Processor's 100G Interface
is Redefining Connected Campus Facilities

The Challenge:

Connecting campuses and facilities is a common networking challenge for a wide variety of video workflows. Broadcasters with studios on multiple floors / buildings, universities performing distance learning, houses of worship with multiple locations and sports / entertainment venue customers are always looking for cost-effective and reliable ways to link their facilities. Some of these applications are utilizing existing "dark fiber," while others are pushing the new capacity and distance limits with 40K 100G IP connections. Many connected campus applications today require something more than a frame of optical gateways, but don't merit the cost of an enterprise-class IP switch.

The Solution:

The Selenio Network Processor (SNP) from Imagine Communications is the most powerful SDI-to-IP Gateway available today. The SNP is a 1RU platform with 32 HDBNC ports and dual QSFPs cages. This allows utilization of new 100G connections providing up to 32 3G or 8 UHD services on two redundant fiber pairs.
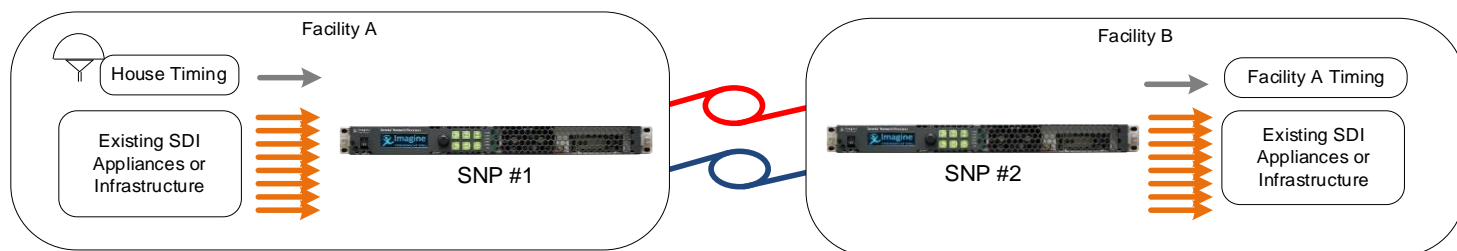

Expand existing systems with ease.

Increase capacity between two facilities by replacing single-service "TIE Lines" or single-purpose optical gateways that become bottle necks with 100G of uncompressed over IP capacity. Revitalize and re-use (qualified) fiber connections in whole new ways simply by replacing the endpoints. Utilizing the SNP as an appliance, it can be completely transparent to existing routing control systems (if desired), omitting complicated support calls or router database changes.

Utilize the benefits of SMPTE ST 2110 but skip the switch!

Even without a complicated and expensive IP infrastructure, SNP users can take advantage of ST 2110 protocols and features and "skip the switch" simply by going "100G Point to Point." In addition to transporting up to 32 SDI services, the SNP can ingest house timing from the main facility via black burst, transmit that to the far end via PTP (SMPTE 2059-2), and output at the far end as black burst. In addition, by using the redundant 100G interfaces, SNP users can take advantage of the low-latency hitless merge as defined in
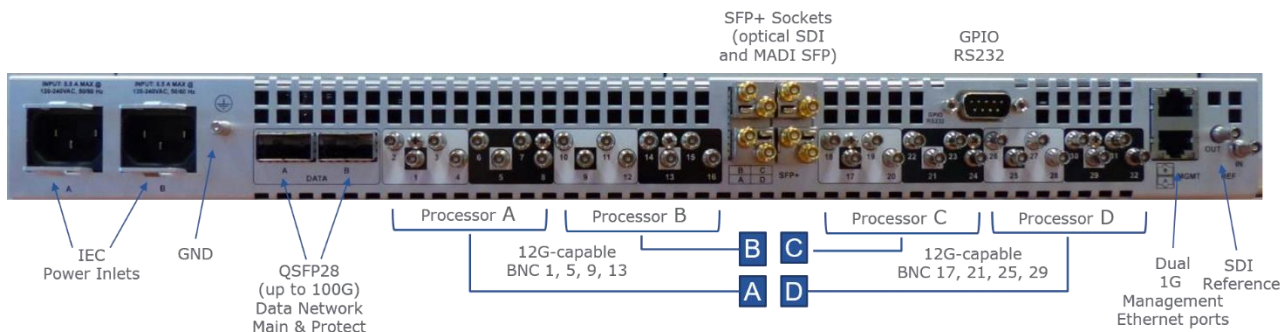
SMPTE ST 2022-7.

Flexibility beyond comparison.

The SNP's SDI ports are user configurable as RX or TX (blocks of four), so customers can design 32/0, 16/16 or 0/32 workflows as their needs require. Units can have separate timing, or the SNP can transmit timing from location to location along with the video services. The SNP can receive black burst timing and transmit over fiber to the far end using PTP protocol — allowing SDI-based SNP users to capitalize on new standards, protocols and technologies without the expense and complexity of a large IP infrastructure.

Go the distance!

It seems not long ago that the IP world struggled to carry a 10 Mbps MPEG-2 stream across a simple network. Today we can carry 100 Gig of uncompressed video services up to 40 km over IP! These state-of-the-art SFPs are not only commercially available today, but also are qualified for the SNP! Customers can utilize ultra-low latency, high-capacity connections to change the way their facilities work and the way the facilities work together.

Features and Benefits:

- Native support for SD, HD and UHD formats.
- QSFPs allow for application-specific optics.
- Ultra-low latency transmission of 100 Gig of uncompressed video.
- ST 2110 Ready: The SNP is well suited for SDI applications, and when you are ready to move to ST 2110 — so is the SNP. IP is inherent in the design to simplify your migration to ST 2010 workflows.

Ready for the Future:

Connecting facilities with the SNP in a "Point-to-Point" topology allows users to receive and transmit SMPTE ST 2022 and ST 2110 services via dual 100G IP QSFPs that are available from leading switch providers. Thus, users without an IP infrastructure can utilize a best-in-class SDI-to-IP Gateway. If and when an IP infrastructure is deployed, the SNP is ready to perform in a switched IP environment. This completely future proofs customer workflows for a seamless transition to an IP infrastructure.

The SNP can be a managed source and destination within Imagine Communications' Magellan SDN Orchestrator. This allows the SNP to become part of more complex routing applications.