



Sienna **ND Processing Engine** is a modular infrastructure to facilitate migration of SDI to NDI workflows, and enable a new generation of NDI based facilities. It replaces racks full of traditional SDI glue modules, commonly used for tasks such as Multiviewers, scaling, bug insertion, audio embedding, de-embedding and mixing, plus other video and audio processing operations.

### MULTIVIEWERS, VISION MIXER AND MORE

The system includes unlimited flexible multiviewers and a fully integrated vision mixer, an AI Mix automated Video Follows Audio Controller, and a Virtual Camera Crew for deriving PTZ regions of interest in a locked off UHD shot. There is also the unique 'contribution manager' module which streamlines the process of managing lots of external live contribution feeds or guests, automatically controlling assignments of mix minus, intercom etc.

### IP PROTOCOL BRIDGES / CONTRIBUTION

It can also be used to bridge between other IP video formats, with modules to perform tasks including AES67, SRT H.264/AAC Video/Audio stream conversion to NDI and NDI re-streaming as various IP Stream formats including as transport streams. The UNITE web browser based contribution system provides an easy uplink for anyone.

### SRT INTEGRATION

ND Processing Engine also includes SRT transmit and receive modules to enable reliable transport of MPEG Transport Streams across continents between Processing Engine systems, as well as interchange between SRT and NDI. ND Processing Engine also supports the revolutionary NDI over SRT Protocol which carries native NDI and NDI HX2 streams over the SRT wrapper without transcoding or additional latency.

### NDI Firewall - NDI Infrastructure Bridging

ND Processing Engine features firewall / tieline modules which provide protected bridging of selected NDI streams between discreet closed network sections or locations. NDI over SRT provides another layer of secure native NDI interconnect between remote systems.

### ENGINEERING TOOLS

ND Processing Engine also includes signal generators and a wide range of scopes and monitors including waveform monitors, vectorscopes, and audio metering. NDI Processing Engine has rich integration and API control for complex workflow monitoring, message flow processing integration with Node RED and other process automation.

## FEATURES

**Native IP Video Workflow**

**Wide Protocol Support**

**Modular & Cloud Compatible**

## BENEFITS

Next Generation Infrastructure made simple

NDI®, SRT, RTP, RTMP, UDP TS, HLS, AES67 and more.

More than 300 modules, web based remote user interface.

## ND Processing Engine

### Inputs

- Full NDI® - All Versions
- NDI® HX - H.264 / HEVC
- NDI® over SRT - Full / HX2
- SiennaLink™ Protocol
- UNITE™ Browser Contribution
- MPEG Transport Stream over UDP
- MPEG Transport Stream over RTP
- MPEG Transport Stream over SRT
- MPEG Transport Stream over RIST
- RTMP (Target and Client Modes)
- AES67 (Dante hardware compatible)
- SMPTE 2110-30 Audio Streams
- HLS and DASH Streams

### Outputs

- Full NDI®
- NDI® HX2 (including Multicast)
- NDI® over SRT - Full / HX2
- Weblink™ Monitor Protocol
- SiennaLink™ Monitor Protocol
- SiennaLink™ WEB Protocol
- MPEG Transport Stream over UDP
- MPEG Transport Stream over RTP
- MPEG Transport Stream over SRT
- MPEG Transport Stream over RIST
- RTMP (Server and Push Modes)
- AES67 (Dante hardware compatible)
- HLS Single or MultiStack Streams

## Platform

Ubuntu Linux 20.04 Long Term Support

### On Prem

Intel/AMD single, dual, quad x86\_64 CPU

### Cloud

AWS : c5, c6d Series up to 96 vCPU

Azure : Fsv2 Series

GCP : C2, N2D Series up to 224 vCPU

AliCloud

TenCent Cloud

## Modules

- Multiviewers with Meters, Tally, Alarms
- Fault Detection / Alarm Generators
- Stream Wrap / Unwrap
- Stream Decoders
- Stream Encoders
- Media Recorders
- Media Players
- DVE / Image / Audio Processors
- R128 Audio Monitor / Processor
- Tally Integration
- Intercom
- Signal Generator
- NDI Stream Analyser
- MPEG TS Analyser
- Scopes. Luma, Vector, Color etc
- 6 Input Vision Mixer
- Audio Mixers
- Social Media Publishers
- SCTE35 and Closed Caption Processing
- HTML5 Graphics Rendering