



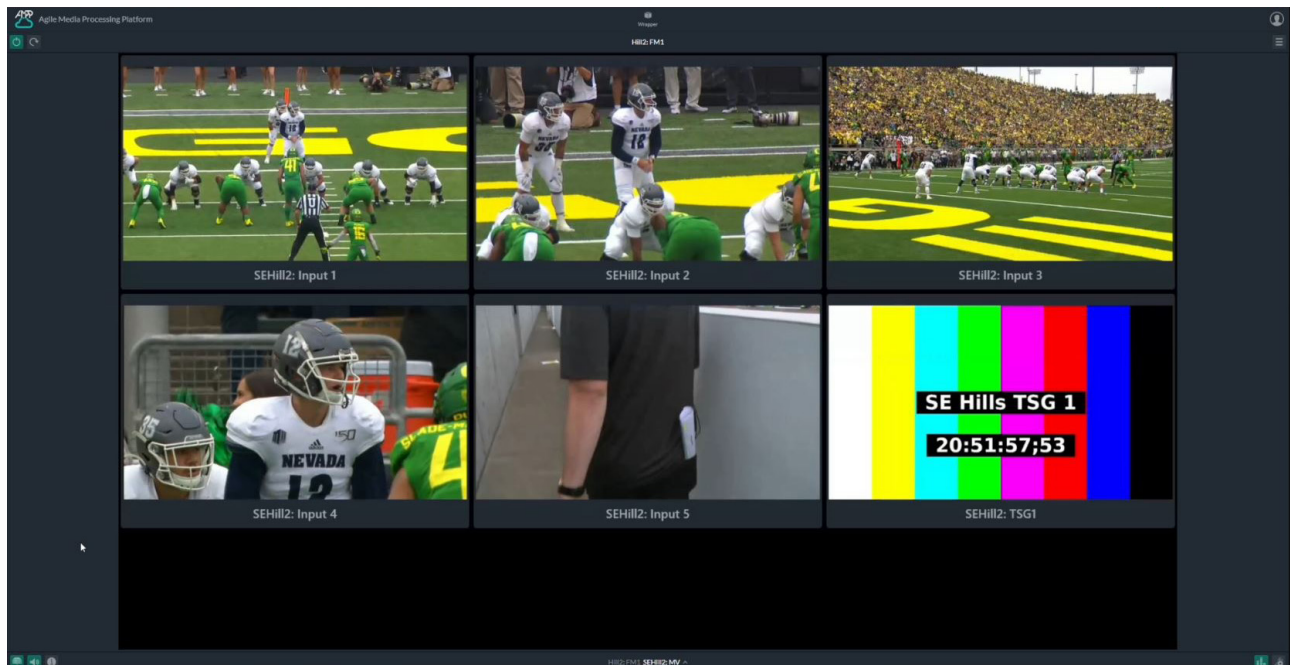
APPLICATION NOTE

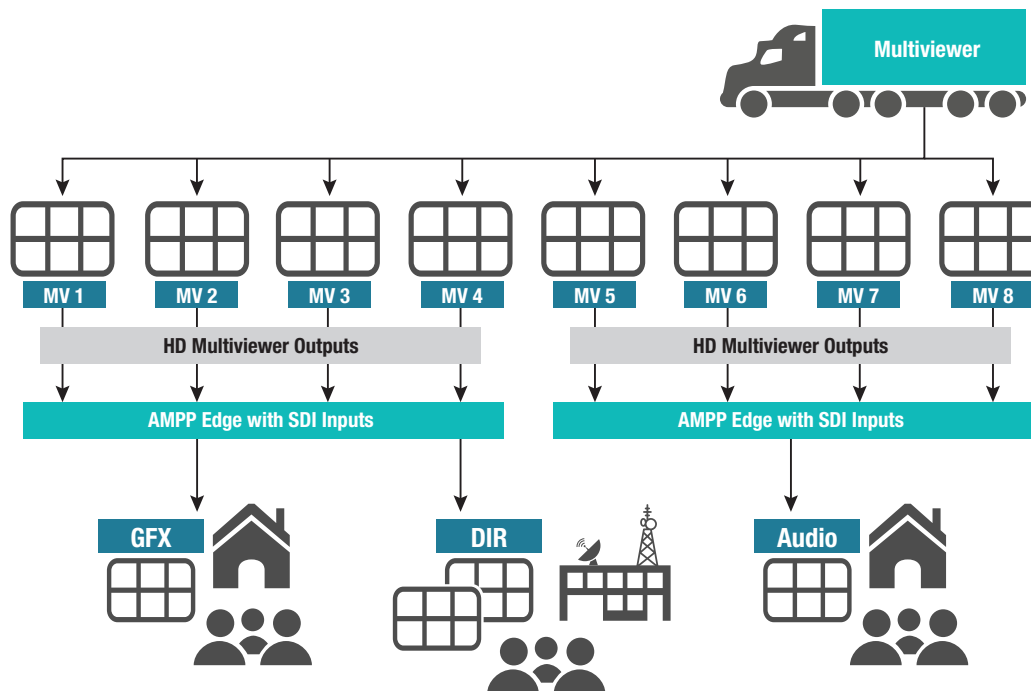
AMPP Flow Monitors for Remote Production

A typical live sports event production requires dozens of people: producers, directors, commentators, editors, replay operators, statisticians, graphics producers, audio mixers, the list goes on and on. All of these individuals need to be in front of video feeds with the ability to make split second decisions that impact the quality of the final production. Traditionally, for a premium event, an army would travel to the venue to find themselves in front of an array of multiviewer screens connected to the facility's router mobile truck outputs and configured to ensure that each production professional was able to see and hear everything they needed to perform their task flawlessly.

The advantages of this approach are obvious. They include the ability to provide the highest quality video to each viewing point, as well as negligible delay between the live action and the video seen by the production team.

There are, however, some significant drawbacks to having your entire production team on site at the event. First of all, the cost — not to mention ecological impact — of all this travel is extremely high. Secondly, the time it takes these professionals to travel to and from the venues reduces the number of events a team of professionals can produce in a given timeframe. A production team at an event in the US cannot help produce an event in Europe the following day. Thirdly, recent current events have created conditions limiting travel between certain regions as well as limiting the number of people that could safely work together in a given space, making it extremely complicated to have all the necessary people to cover an event at the same location.






The desire to give people the ability to work from wherever they are located in an effort to reduce costs, diminish our carbon footprint, improve efficiency and utilization of skilled professionals, and conform with health safety protocols has created a need for a remote monitoring solution that is simple to set up on both ends (inputting feeds and seeing them), provides high-quality video at a bit rate that is easily handled by any consumer internet service, and has a low enough latency that it is just like being there in person.

A number of broadcasters covering major sporting events are turning to Grass Valley’s AMPP-based Flow Monitors. AMPP is Grass Valley’s scalable SaaS platform of agile management tools, cloud-based elastic platform services and intelligent media technologies that combine into solutions that mirror broadcast workflows where and when they are needed. The AMPP Flow Monitor app enables low-latency live streaming from anywhere to everyone. These broadcasters have plugged their signals, often the output of multiviewers, into AMPP Edge I/O encoders at the venue site or in their mobile trucks.

Security
 Flow monitor streams are secure (encrypted) and only accessible by authorized users from their AMPP account.



AMPP Edge is a 1 RU server that can take up to eight SDI or SMPTE ST 2110 signals – as well as NDI or any other IP signal types supported by AMPP. Once the signals are in the system, dashboards can be created that control, route and even combine these signals into multiviewers within the AMPP Edge device and then select which streams will go out on each Flow Monitor.

From there, the entire team can access the high-quality streams from a simple web browser using nothing but a secure link with roughly half a second of delay. Depending on the number of users watching these streams, the video can go directly from the site to the user, or can use the cloud as a relay to help limit the amount of bandwidth needed at the contributing site to serve multiple viewers.*

As a SaaS solution, these broadcasters pay only for the streaming time that they use and the streams can be turned on and off remotely from AMPP’s web-based Resource Manager.

Grass Valley’s AMPP-based Flow Monitors have given broadcasters the best of all worlds. Production staff remains at their preferred location and with a simple click on their web browser can connect to a high-quality, low-latency video feed that allows them to get their work done without the added cost and complexity of traveling to and from the venue.

* Requires GV AMPP Edge for signal input and a GV AMPP account. For multiple simultaneous distribution points, a cloud service provider account is also required.