

Tracking the course



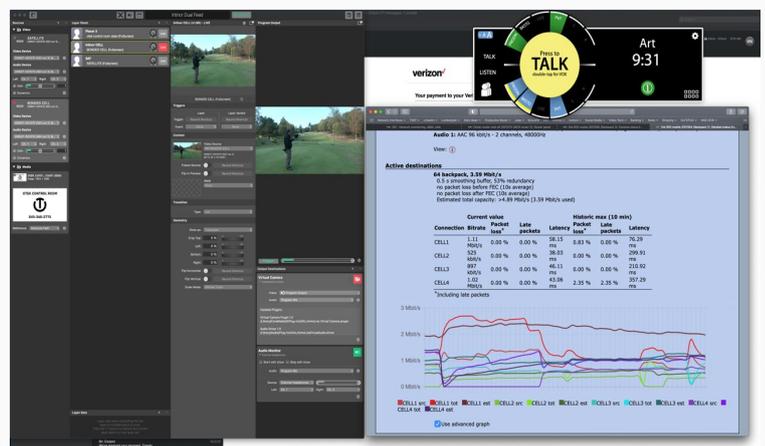
OTEK TV, founded by cinematographer and editor Art Aldrich, has an enviable reputation as one of the leading corporate filmmakers in the USA. Its clients are as diverse as business consultancy KPMG and the Iditarod Trail Sled Dog Race OTEK has been producing mini golf documentaries for corporations for 12 years. These involve 30 or so guests and a pro golfer. Now with everything shut down due to COVID precautions, they all needed a way to engage with these clients virtually. The solution was a virtual golf tour, with cameras following the chosen pros, and interactivity with the select audience over Zoom. What makes that difficult, of course, is that the crew needs to cover the long distances of the course and have a central production centre which can create the feeds and manage the interactivity.

Intinor provided the solution, with its Direkt Link 600 bonded cellular backpacks. OTEK simply plugged their preferred cameras into the backpacks, which encoded the video and audio feeds and sent them over multiple 4G LTE networks to a central MCR in upstate New York.

While a number of vendors offer bonded cellular camera links, Intinor has built on unique techniques to ensure maximum quality, stability and reliability of the links. The company developed its own unique transport protocol, BRT, incorporating forward error correction, re-sending (ARQ) and adaptive bitrate as well as network bonding.

What these functions achieve is to send extra data along with the main transmission, re-send lost packets and adapt to fluctuations in network capacity. This maintains the quality of sound and pictures without the need for bursts of data, so the links are never stressed. It eliminates the need for streams to be buffered in the cloud while lost packets are repeated.

Note that audio is included in this forward error correction protection scheme. Dropped frames and freezes are irritating, and BRT largely eliminates them. But any audio disruption is extremely disturbing for the viewer, and ensuring that the sound remains constant, glitch-free and correctly synchronised to the pictures is vital. That is particularly important in a sport like golf, where the golfer's swing at the tee has to precisely coincide with the sound of the driver hitting the ball.



For the corporate golf events, OTEK uses three Direkt link backpacks out on the course to follow the action and to stay close to the golfers. These feed over multiple 4G carriers to the New York MCR, where there are two Direkt router racks. One of the latest features in the Intinor system is that BRT also allows receiver bonding, ensuring seamless failover at any stage in a multiple network connection,

Each rack is capable of accepting multiple IP inputs, which could be Direkt camera links or SRT feeds from other sources, as well as the Zoom network. The output of the Direkt routers streams over NDI to a vMix cloud production platform.

“Our business is in video story-telling for companies and events,” said OTEK’s Art Aldrich. “We understand the importance of engagement with the audience. That was going to be really important in this project, where the client wanted two-way interactivity between the viewers and the action.

“We had looked at streaming solutions in the past, but the problem was that they buffered the signals in the cloud which built up the latency,” Aldrich explained. “So, we thought we would always have to avoid anything that required two-way interactions.

“But the Intinor approach and feature-set is unique,” he added. “The ability to stream point-to-point, with the forward error correction – that was the closer. That was what made it work for us.

“Now we have the ability to handle remote events without fear,” he concluded. “The Intinor approach is so flexible that we can really do anything we dream with it, confident of the absolutely consistent quality of the pictures and sound.”



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