ITRINEGY

ITRINEGY NETWORK EMULATORS HELP GARLAND SHOW THEIR VALUE TO THE BROADCAST INDUSTRY

Garland is a UK-based digital video solutions provider. They provide broadcasters, media outlets, sports organisations and corporates with the technology and support needed for acquiring, transcoding and streaming video in high quality over a variety of IP networks, such as fibre, cellular, satellite and public Internet. This enables studios to film high-quality footage in hard-to-access, busy, or perilous locations without the need for a fully equipped outside broadcast truck. Broadcasters can shoot at a greater variety of locations whilst cutting back on day-to-day maintenance.

THE PROBLEM

Garland's Technical Manager, David Fowler, needed to ensure that the technology they provided would work over the wide spectrum of networks they may be exposed to. This can be a particularly difficult task to accomplish within a laboratory environment — an issue about which David was all too aware.
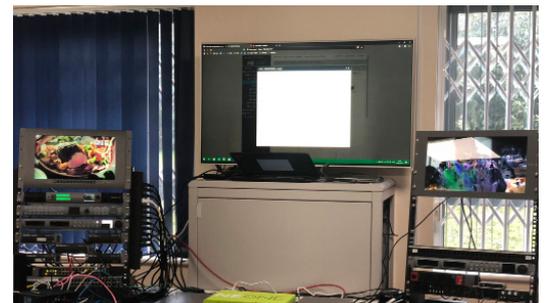
Garland's Technology helps preserve high-quality footage when transferred via Networks

"Most of our technology will be used for outside broadcasts, or for delivering from a broadcast location to a studio or similar location," explains David. "So we needed to be able to recreate realistically that environment in-house."

In addition, Garland needed to be able to show potential customers the impact that poor network conditions could have on their footage and how Garland's solutions would help them overcome these problems. Again, this was proving difficult in their current laboratory setup.

"We provide equipment that implements error correction of video delivery over the Internet over IP, and we need to be able to show our customers that the technology will work," says David. "We needed a testing and evaluation tool to use internally and with our customers, so we were looking for a reliable way to mimic the internet, instead of having to use the Internet."

ACCURACY & EASE OF USE

As a technical manager of a network-reliant technology, David knew that a Network Emulator would provide the environment he was looking for. He also knew that free Emulators were available online. However, Garland had used these options before, with unsatisfactory results.

"We had concerns about the accuracy and ease of use of open-source or freeware-type solutions, as many are command-line driven and not user-friendly. So we broadened our search."

As Garland was looking for a more-refined alternative, a client in the military sector shared their experience of iTrinegy technology. After a successful demonstration of the iTrinegy system, David was confident that the NE-ONE Model-10, with 10 concurrent network links and built-in Network Scenario Builder, would meet all of Garland's requirements and be a wise investment.

"We now have a solution that lets us test and demonstrate our technology in our lab — when we want to — and repeat the scenarios with the Network Scenario Builder."
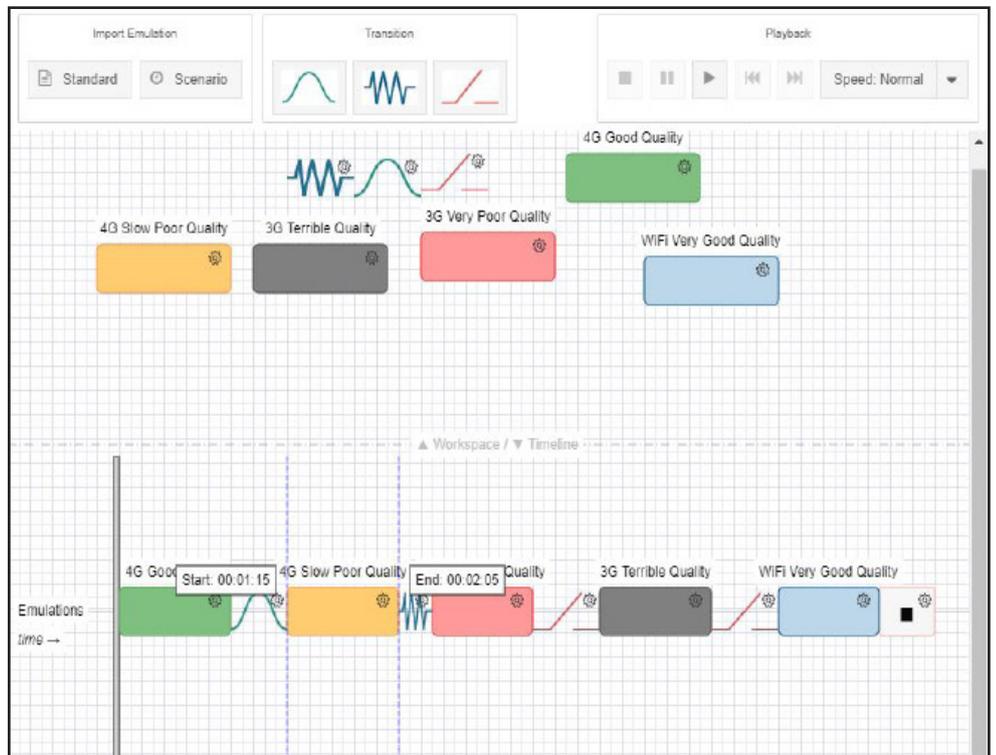
NETWORK SCENARIO BUILDER STREAMLINES TESTING

For Garland, the NE-ONE's Network Scenario Builder proved to be a stand-out feature. Its user-friendly interface with extensive and reliable testing capabilities, allowed Garland to improve their testing efficiency.

"We could quickly replicate and emulate network environments that are similar to those in which we would operate: satellite, cellular, or just general public Internet. That was a powerful plus," says David. "In the world of broadcast, having the ability to stay in the lab to test and having numerous pre-set conditions available without having to adjust a lot of settings, makes my team's lives a lot easier."

The NE-ONE's ability to record the transport stream and graphically illustrate the stream's statistics were also valuable benefits.

"It was helpful to be able to use diagrams to show our clients the effect, rather than only using numbers. Showing how an iPhone might play a multiple bitrate stream when the bandwidth starts dropping, or how someone moving from WiFi to streaming data, then travelling in their car may impact footage quality, was hard to demonstrate for clients previously. It was helpful that the NE-ONE Network Emulator could create these conditions, along with the Network Scenario Builder being able to visually represent every condition the broadcast footage was experiencing clearly."

Being able to recreate different network types and chain them together using the Network Scenario Builder allowed for easy and efficient testing

PREPARE FOR EVERYTHING WITH THE NE-ONE

Garland quickly got the hang of the Model-10's easy-to-use interface, and set about applying the versatility of the Emulator's pre-set network conditions to good use.

"We typically have two or three scenarios we'll use," says David. "One is a varying Internet connection. Because the Internet is changing 24/7 on a varying basis, we need to make sure we can react to these changes. So, we typically leave that running for a long time. We then monitor the video side, checking that video quality is what it should be within the parameters of the error-correction settings we choose."

The NE-ONE has become an integral part of the Garland test environment, 'thrashing things to breaking point'

"Another test involves absolutely thrashing the error-correction mechanisms to the breaking point. For example, this lets us tell our customers the exact percentage of packet loss their broadcast can effectively handle before they will begin to see errors."

David also discussed the final test the Garland team were likely to perform, appropriately named the 'what happens if I do this?' test. Given the large amount of different pre-set network conditions supplied with the NE-ONE Emulator, Garland can constantly play out different hypothetical scenarios that their clients may face, such as using satellite uplinks or uploading via SIM cards whilst on the move. This can be done within laboratory conditions and allows them to discover the exact outcome of these events. Then, Garland can either optimise against them, or give their potential clients a concrete understanding of the safety margins of the technology Garland is providing. This gives Garland a better understanding of the technology's tolerances, whilst also boosting their clients' confidence in that technology.

EASE-OF-USE

The NE-ONE Network Emulator Model-10's ability to constantly produce immediate, consistently reliable results was a feature Garland found valuable. Remarking on how the NE-ONE has improved their day-to-day operations in the lab, David explains, "We no longer have to ship products around the world to test. Also, because the Internet is inherently unreliable, it's great to be able to perform the tests immediately and repeat the scenarios reliably. It speeds up our testing and assures our customers that our technology is doing what they need it to do."

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