Success Story

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–Mick Vincent,
Director of Digital Imaging at VTR

VTR Ltd. Breaks the Speed Barrier for Film Transfer

SGI® Gigabyte System Network and Grass Valley Spirit DataCine® Systems Deliver Unparalleled Performance

VTR Ltd. in London, U.K., is the first commercial post facility in the world to make the dream of near real-time 2K film transfer a reality. VTR has leapfrogged the standard HIPPI rate of 4 frames per second (fps) for film transfers, color-correction, and output to film and is reporting sustained speeds of 22 or even 23 fps. The source of this supersonic film transfer speed is the Gigabyte System Network (GSN) interface for input/output to VTR's Grass Valley Spirit DataCine® and a Specter Virtual DataCine with Phantom® TransferEngine, all routed through SGI® Origin® 2000 high-performance servers. Mick Vincent, director of digital imaging at VTR, puts it succinctly: "With GSN, what used to take two weeks now takes 12 hours."

VTR has become the first beta site for the new Grass Valley Spirit 4K DataCine® system from Thomson, which, upon general delivery later this year, will come equipped with GSN as the standard interface. Utilizing the GSN interface, Spirit 4K, working in 2K resolution, will provide full 24 fps real-time film transfer and output. In 4K mode, the system will output more than 7fps. GSN is an ANSI standard that has been used in the supercomputing and defense industries for a number of years. GSN is the new high-speed network infrastructure for post, especially for interfacing high-performance devices for film mastering. Thomson and SGI provide GSN networking infrastructure products and systems. In addition to the SGI GSN products, Video Propulsion supplies PCI and PCIX GSN network interface adapters and switches to Thomson and SGI Professional Services. GSN is the only network standard today that performs real-time 2K data transfers for film and other data. All currently installed Spirit systems worldwide can be upgraded with the GSN data output. Additionally, GSN on Spirit 4K DataCine systems will allow transfer and output in 4K and 2K or your choice of I/O combinations.

The GSN interface finally allows the Spirit and Specter systems to achieve the potential speed and efficiency its engineers originally envisioned. As Rainer Knebel, marketing manager of post production, Thomson Broadcast & Media Solutions, explains: "When we developed Spirit in 1996, the whole concept was to have a transfer engine in a super high-speed environment, allowing for high-speed transfer to the Specter, or to a hard drive, to improve workflow and to improve efficiency. The limiting factor up until now has always been the interface, because we were always limited to the level of the HIPPI, even though the Spirit and Specter machines could run much faster. What we dreamed about when the Specter was first developed has now become reality with the implementation of SGI GSN. We can now move farther up the chain from 2K to 4K, improving overall efficiency, and not have people sitting around with their thumbs together waiting for the transfer to occur. Our engineers—and people in facilities all over the world—were dreaming of the capability of getting speeds at close to real time, especially at 2K. GSN is the culmination of that dream."

VTR, Ltd. Reinvents Film Transfer

Situated since 1985 in the heart of London's Soho district, VTR Ltd. is one of Europe's top post-production companies and has a reputation for innovative and high-quality telecine and digital effects for the advertising, music, and a now-blossoming feature film business. Other companies in the VTR plc group specialize in associated areas, such as CGI, feature film effects, and broadcast work.

The VTR plc group once included The Film Factory, which did feature film special effects. But as Vincent explains, "A few years ago, we shut down The Film Factory, because the equipment was very slow. We reinvented the group, with Thomson and SGI state-of-the-art equipment. Our main intent was to do film transfers and grading for commercials for television and cinema, but now, because of the quality and speeds we can achieve, we seem to have found ourselves doing features as well."

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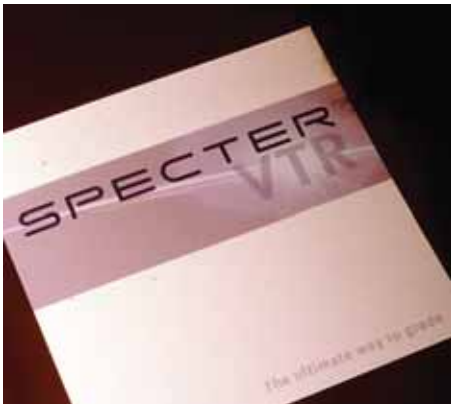

VTR began its digital transformation with one Spirit suite (the first in the U.K.). "The suite, Vincent reports, "took a while to get going because everybody paid more to use the room. But once it had been accepted as the standard, suddenly everybody wanted to use that suite. Then you get a second Spirit to keep up with demand, and then you have to have a third, to cater to clients' needs for flexibility. The next step was a fourth suite, featuring the Specter Virtual DataCine with the Phantom TransferEngine. I knew that GSN was around the corner, so when we made plans to design our virtual grading suite or suites we had the concept of GSN as well."

VTR is having déjà vu all over again with its Specter suite, especially since GSN has been up and running. "As with the Spirit, first you generate the demand, and once they get hooked on it, you've got to be able to let them use the machine, which means you need more than one," Vincent continues. "You sell it to your commercial clients and they fall in love with the idea, and then you sell it to a feature film and they book it for a month. Then the commercial client can't get back in because it's already booked. In fact," Vincent adds with a laugh, "they're almost queuing up at the door for feature film work. I can see where we're going to need another virtual room before long."

VTR uses two SGI Origin 2000 computers—one is built into the Specter system and one as an external server-which means that as soon as the colorist finishes the grading process, the feature can be laid off to another disk, which can then start outputting back to film and deliverables. Meanwhile, during output, the colorist can then start the next feature or commercial, running multiple jobs working in parallel, improving efficiency and return on capital investment.

Film and video deliverables are all from the same grade at VTR. "We have a way of doing the grade in one suite, from one source material, so I don't have to do a separate video grade and then a film grade," Vincent explains. "Not only is the Specter suite with GSN fast for grading, but you get a better job, you don't handle the negative anywhere near as much as you do normally. The whole process has come together really quite nicely. I think this shows the way a lot of people will be grading in the not-faraway future."

Let the EDL Do the Work

Another major improved workflow benefit is the ability to input an edit decision list (EDL). According to Vincent, the Specter system has an excellent file management system and the Phantom TransferEngine takes control of the software and transfers automatically.

"We scan using EDLs now, which means that instead of typing in a number and performing an edit and the telecine going off and just recording one scene, we can now load an EDL and tell the machine to take everything off that roll of film that it needs. In addition to speed efficiencies, this removes the human error side of things. If the EDL is correct, then the conform is correct. Scanning works the same. You can tell it to take handles on there as well, so you've now got a very fast system for getting to the parts of the negative that you need and then, once you get there, you're pretty much scanning in real time.

"I think back to two, maybe three years ago, when we were first doing data. You'd have to manually type in every command. You could do possibly 10 shots an hour, if you were lucky," continues Vincent. "The last movie I just finished with GSN had 1,800 shots, and there were about 3.5 or 4 terabytes of material that we scanned. It was done in 12 hours instead of two weeks. GSN has meant a huge acceleration in scanning, which has meant that we can turn jobs around very quickly."

"Until GSN came along, everything you did with video was real time—apart from video compositing and the like," Vincent concludes. "Then one day you're telling your clients that you're now going to the next generation of quality with a DataCine, but it's going to take four times longer or six times longer to transfer in, and they lose interest. GSN means we're now doing data just about as quickly as we used to do video, but of course at much higher resolution—good enough for film. While you don't necessarily sell GSN to your clients, they do know that when they go somewhere else that doesn't have GSN, they suddenly slow down. They literally can walk in here today with their film and by tomorrow night the feature film would be conformed. And if they went anywhere else, it would take them, probably, towards the end of next week to do the same thing. And I think that's the thing that sold GSN to us: stability, speed, and efficiency."

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Director of Digital Imaging at VTR

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