LazyTown Lays Down Staying in Data From Viper to Color Grading

By Debra Kaufman / December 1, 2004

It's a long way between Boulder, Colorado, and Reykjavik, Iceland, but the distance is even greater between a traditional television workflow and a futuristic, data-centric all-digital pipeline. Mark and Dana Read have traversed both divides with *LazyTown*, a children's TV program running on both Nick Jr. and CBS.

Magnus Scheving's LazyTown Entertainment joined forces with the Read s' Hypercube, a Boulder company specializing in virtual environments, late last year to create a show blending live action, puppets and CG backgrounds. Within seven days, Scheving and Mark Read had conceived a state-of-the-art studio in Reykjavik. In November 2003, the Read s, their children and two cats moved from Boulder to Iceland, accompanied by a UPS airplane with 55 crates. "There was no studio," says Mark Read. "Just a big structure with no walls, no bathrooms and no electricity." The Read's were joined by two Hypercube employees: database and systems engineer Mike Dye and virtual-world specialist Bill Dore. The four started work on a human and machine pipeline and, 40 days later, LazyTown began shooting. (Mark Read is now the show's technical director and co-executive producer, along with co-founder Scheving, LazyTown president/co-founder Ragnheidur Pà©rsdà³r Melsted, and producer Raymond P. Le Gàºe).

The Hypercube pipeline is a transportable HDTV 24p system for studio and location production, says Read. "The pipeline has evolved from a standard-definition pipeline over many years," he explains. "Certain aspects were later tailored to movie-making in collaboration with Douglas Trumbull and then scaled down and modified to meet the needs of the LazyTown production. We're merging film, video and computers all into one pipeline." That's accomplished by a GPS reference clock on top of the studio, which locks the facility to real time. "Our time code on our master sync generator for the whole facility is exactly the same as the time on all our computers, which is exactly the same as the time code rolling on the slate," notes Read.

From the beginning, Scheving wanted to use HD 1080 24p cameras to fill immediate needs for SD versions as well as to future-proof the show for HD broadcast. At the head of the pipeline is the Thomson Viper FilmStream camera with DigiPrime and Canon zoom lenses. The output from the Viper goes directly into an Ultimatte HD system (this is where Read's background in virtual

cinematography comes in handy). Read credits composer Richard Welnowski as the studio's "secret weapon" in keying the RGB signal from the Viper with the CG backgrounds.

The CG backgrounds are created by 12 artists using Alias Maya, Kaydara's Online and Apple's Shake. Kaydara's Online is virtual set software that runs on Windows XP; Read says he has a "hot-wired" version that allows him to operate in HD.

Recording the RGB material is a challenge. "A lot of recorders will record HDTV," says Read, "but only a few record 4:4:4." He's got all of them: the DVS CineControl, Drastic Technologies' WVW series digital disk recorder, and the Baytech CineRAM, which is the most portable of the group. Editing is done on an Avid Adrenaline system; online and color-correction is done with the Iridas SpeedGrade. The SAN provides 80 TB of online storage and the show doesn't touch videotape until the last moment, when the playlist records the DPX files to a Sony SRW-5000 RGB VTR.

"We use a very unique color-correction scheme that is enabled by the fact that we maintain the alpha channel along with the image as an RGBA signal as well as a file and not just RGB," explains Read. "We effectively have two color-correctors, both live and in post- one color-corrector for foreground and one for background, so we retain control over the image from a compositing perspective."

And it works. In the year it's been functioning, Read says the facility has shot 10-hour days six days a week without having to stop due to a pipeline issue. "Think about how often you have to deal with technical issues in any other environment," says Read. "I'm excited at the opportunity we've had in
∨ show for children shot in 24p, and the interest we've garnered."

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