StreamZ Improves Webcast Quality and Operational Ease for the Exploratorium

by Ronald Aveling, Senior Multimedia Specialist

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The Exploratorium, located inside the Palace of Fine Arts in San Francisco, California, is a museum dedicated to science, art, and human perception. As Senior Multimedia Specialist in the Moving Images department, I am responsible for overseeing the technical operation of our Webcasts. We produce approximately 50 Webcasts annually, many of which are also presented to live studio audiences. Archived Webcasts on the Exploratorium's Web site each typically receive close to 200 hits per month.

Every year, we also produce major Webcasts from remote regions around the globe. Events we have covered include solar eclipses, the transit of Venus, and summer/winter equinox events from Ancient Observatories such as Chichén Itzá in Mexico. This past March, we produced a Webcast of a total solar eclipse live from Side, Turkey. The archive of this Webcast can be viewed at http://www.exploratorium.edu/eclipse/2006/index.html. Our remote eclipse Webcasts receive over 100,000 hits during the live stream, and our Exploratorium Web site receives 1.2 million unique visits every month. As one of the pioneering leaders in informal online learning, the Exploratorium has established partnerships for sharing our Webcast content with a range of science museums and cultural centers, and we are committed to finding new ways for sharing our work with a wider global audience.

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the museum of science, art and human perception

capture

encode

stream

In late 2005, we decided to replace the encoding and streaming system driving our Webcasts. We were seeking marked improvements to the visual quality of our Webcasts, improved software usability, and the capacity to encode content for use in video podcasting in the future. Digital Rapids' StreamZ has lived up to our requirements.

Our Digital Rapids StreamZ (model 1500xs) server is currently used primarily for streaming our Webcast series. From our live editing and mixing station, program video and audio are sent directly to the StreamZ server. Within the Stream software, we calibrate the gamma of our incoming video feed for viewing on computer monitors, and we employ dynamic range compression to our audio signal to guard against unexpected peaks. Streams are output in Real and Windows Media formats, while uncompressed AVI is used for temporary archiving. In the near future, we will also be using StreamZ to encode archived content into H.264 for video podcasts.

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The motion-adaptive de-interlacing and 3D motion-adaptive noise reduction of the Digital Rapids hardware have made significant improvements to the quality of our video, and the simple interface elements in the software make operation enjoyable and intuitive. The use of Watch Folders for post-live encoding has assisted in streamlining our archiving process, and will bring similar benefit to our video podcast encoding. And Digital Rapids themselves have been easy to work with, demonstrating a genuinely positive willingness to assist, articulate technical communications, and a progressive approach that aligns well with the Exploratorium's needs.

The User: *The Exploratorium, San Francisco, California*
The Challenge: *improving the visual quality of Webcasts and encoding for video podcasting*
The Solution: *StreamZ*

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