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- **Slumdog Millionaire Shot With Innovative Si-2K Digital Cinema Camera**
  Silicon Imaging Press Release

(Albany, NY – January 31, 2009) Slumdog Millionaire, which already swept 4 Golden Globes awards earlier this month continues its own rags-to-riches story with a total of 10 Academy Award nominations including Best Picture, Best Director for Danny Boyle and Best Cinematography for Anthony Dod Mantle. In the crowd pleasing fantasy, Danny Boyle tells a love story about a teenager who rises from the slums of Mumbai to win the Indian version of the television game show Who Wants to Be a Millionaire? Many of the fast-paced chase scenes and game show set were shot with the SI-2K Digital Cinema Camera, developed by Silicon Imaging of Niskayuna, New York.
"The film uses dazzling cinematography, breathless editing, driving music and headlong momentum to explode with narrative force, stirring in a romance at the same time" states Roger Ebert, for the Chicago Sun-Times.

The challenge of shooting of one of the densest and fasting moving cities in the world fell upon Director of Photography Anthony Dod Mantle, who most recently shot Last King of Scotland and had previously worked with Boyle on both 28 Days Later and Millions. The plan was to shoot in the heart of the city's infamous but rarely explored slums, capturing their energy and urgency on-the-fly, with an unforced realism.
"Danny Boyle and I had made four films together prior to this and we have developed a method and a trust", stated Anthony Dod Mantle. We both have strong opinions about our work and about cinema in general and we always want to try to push ideas to the fullest."

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TEWKSBURY, Mass., March 5, 2009 — Avid Technology, Inc. (NASDAQ: AVID) today announced that Avid® DS now offers native support for the RED R3D file format, delivering customers increased efficiencies in the editorial and finishing process of RED-originated projects.

With native support for RED, Avid customers will benefit from:

- A speedier ingest of RED footage;
- The ability to apply RLX color intent data to the footage in the Avid system; and
- Capabilities to preset project and sequence settings for RED projects at 2k, 3k, and 4k resolutions.

In addition to handling native R3D footage, Avid DS customers will now be able to create HD RGB 4:4:4 proxies from high-resolution RED source material, which will provide real-time program monitoring and result in faster system response time - enabling artists to stay focused on the creative editorial aspects of a project.

Avid will also offer native RED support for the offline editing process via MetaFuze®, a tool that automates the conversion of formats such as RED and DPX to Avid DNxHD® media for HD offline workflows in Avid Media Composer® and HD finishing in Symphony™ systems. As a result, customers are able to take advantage of the Avid Advanced Conform workflow for RED and seamlessly move their projects from offline to online.

“We are very excited about the new Avid and RED integration,” said Ted Schilowitz of RED Digital Cinema. “The ability to use the MetaFuze tool to turn RED files into true native MXF files at the various offline and online resolutions is a very powerful step that will enable a more streamlined workflow for the many RED projects around the world that are cutting on Avid. The DS integration of RED files for online color grading and finishing is another important development on making offline to online very cost-effective. Fewer workflow steps and tape layoffs for finishing with RED files is the most effective and efficient way to deliver projects.”

Kirk Arnold, EVP and GM of Customer Operations at Avid said, “We strive to make the technology seamless for customers to allow them to keep focused on unleashing the creative talents that continue to entertain millions. We also understand that our customers want freedom and flexibility to work with whichever format they choose, and our effort to offer native RED support is the latest example of how we continue to evolve our solutions and meet customers’ needs.”

Native support for R3D files is available in Avid DS. version 10.1.1. For customers looking to upgrade, visit the Avid download center.

Danny Boyle was adamant that he did not want to take large, cumbersome 35mm cameras into the slums. He wanted to use smaller, more flexible, digital cameras to enable them to shoot quickly with minimal disturbance to the natural flow and communities.

“We started off using classical kinds of film cameras and I didn’t like it.” Boyle explains. “I wanted to feel really involved in the city. I didn’t want to be looking at it, examining it. I wanted to be thrown right into the chaos as much as possible.”

"I had to find a camera set up that would be ergonomic enough for me to throw myself around the slums chasing the children whilst, at the same time, withhold as much detail in the shadows and highlights” says Anthony Dod Mantle. Our producer, Chris Colson, had hoped for Danny and Anthony to repeat the efforts on Mini-DV”. This was all well and good, except for the monumental difference between shooting multi camera fiction on sets where I could light, sometimes quite heavily. We needed a digital camera with enough latitude to hold highlights and something very small so we could enter the children’s world at their level. “Slumdog Millionaire” needed a completely different tactical approach.”

They found the right combination in the innovative IT-centric Silicon Imaging SI-2K Digital Cinema camera. It delivered over 11 stops of dynamic range, flexible connectivity and film-like digital content, which could be easily intercut with traditional film footage.

Unlike modern HD cameras, which develop and compress colorized imagery inside the camera, the Silicon Imaging SI-2K streams 2K (2048x1152) data as uncompressed raw “digital negatives” over a standard gigabit Ethernet connection. An Intel Core 2 Duo processor-based computer embedded in the camera or tethered to a laptop up to 100 feet away, processes the digital negatives, where they are non-destructively developed and colorized for preview using the cinematographer's desired "look" for the scene.

The digital negatives and "look" metadata are simultaneously recorded to hard drive or solid state disk where up to 4-hours of continuous footage are captured on a single 160GB notebook drive; this is the equivalent of 14-reels of 35mm film which has an associated cost exceeding $25,000 for materials and processing. The recorded files, can be immediately played with the target color look at full resolution, without the need for film scanning, tape ingest, format conversions or off-line proxies.

A customized camera support and recording package had to be built to meet the unique form factor demands of the Slumdog shoot. . They enlisted Pille Film, of Wiesbaden Germany, to create a custom solution which included a gyro stabilizer for the base of the SI-2K Mini. Instead of using the traditional film-style camera body, they elected to use Apple Mac book Pro notebook, running Windows XP, for the recorders, and built them into ruggedized backpacks, to be worn inconspicuously. Stefan Ciupek, the show’s technical supervisor and additional camera operator, coordinated the design and modifications of the camera system with Wolfgang Damm of Pille, whose team worked around the clock to get the 2K Mini rigs built.

Pille assembled four units for the production, and by testing them in a sauna, determined that the laptops would have to be packed in dry ice so they wouldn’t fail in India’s intense heat. Once shooting began, the dry ice had to be reloaded hourly; the production required up to 45 pounds of dry ice daily.

"I've done some odd things, but this was the oddest," Mantle says. "It was unknown territory and unknown technology, which was exciting. Attaching a gyro to the base of the handheld unit enabled me to move the camera in a very unusual way, somewhere between handheld and immaculate Steadicam," says the cinematographer. I could make fast movements, throw the camera a certain way, swipe it up and sideways, and make a brake just before the gyro kicked in so it came to an abrupt stop. Boyle loved the results."

"It's not like jiggery-pokery handheld," says director Boyle. "When you work handheld with a film camera, it's always connected to the body mass, but Anthony separated the camera from his body weight, so his body weight could be on the left and the camera on the right. It was extraordinary what he could accomplish. He's the greatest operator I've ever seen."

"The SI-2K's handled the highlights amazingly well." stated Mantle. "I have since shot on the Red camera and found I had to be more wary of clipping the highlights in Scandinavia than I had to be with the SI2K in scorching India. Its weight factor obviously allowed me to operate more intuitively and emotionally instantaneously than I can with the normal weight of even a modern celluloid camera."

The filmmakers originally planned to shoot specific scenes digitally and the rest on 3-perf Super 35mm, but Boyle was so pleased with the SI-2K performance that he gradually decided to shoot more and more with it. The SI-2K digital cameras also allowed me to shoot more content than I would have done, for a similar budget, on pure film stock.

"During the final grading of Slumdog Millionaire both Danny and myself used words such as magnificent, regarding some of the SI-2K scenes." Stated Dod Mantle. Along the way I shot up to 5 different film stocks which were interwoven into the digitally captured material at the grade in London with the MPC team with the colorist Jean Clement. The conditions were tough for any camera including the heat, dust and rapid camera movement. I am deeply happy and excited about the final sheen this film will have and I think the SI-2K helped to bring out the vibrancy and the immediacy to what was always an amazing script."

"This was not a conventional piece of cinematography, not one where I was able to start a shot and complete it and orchestrate it," he says. "I had to work my pants off shooting in the slums, with the unforeseeable rampant running. We shot crowd scenes, like the chase through Juhu slum at the beginning of the film, using the people who happened to be passing by on the street for added realism. The hyperkinetic chase sequence involving the young Jamal and Salim at the beginning of the film was filmed incrementally, built up, like a montage over a period of time.

Anthony Dod Mantle, who received an oscar nomination for Best Cinematography, has already won honors for his color-infused photography on this film, including the Golden Frog from the Poland's CamerImage Festival; the most prestigious international award for cinematographers.

"I'm ecstatic! Thank you to the Academy from the cast and crew here in Mumbai where the film was made and where it's being premiered tonight. It feels like you've given us a billion nominations!" director Danny Boyle said in reaction to the nominations.

"Slumdog Millionaire was the first Hollywood, or even Bollywood, style production to leverage all of the core technologies and unique benefits of shooting with the SI-2K camera," states Ari Presler president and founder of Silicon Imaging. "It is a great honor to have played a role in the shooting of "Slumdog Millionaire" and for the Academy nominations which included Best Picture and Best Cinematography"

"I had an unforgettable time shooting with the SI-2K in India," says Dod Mantle. " I am very, very grateful for the support I have been given by the Silicon Imaging and Pille Film team, making the film unfold in such a beautiful way."