.moneen. Live At The Mod Club Becomes Canada's First Student Production To Shoot A Digitally Shot 3D Production With Distribution To 3D High Definition Blu-ray

From: Office of Program Director, Operations and Technology, Rogers Communications Centre

Feb 1, 2010 – As part of their 4th year practicum project in Ryerson University's School of Radio and Television Arts, the Epik Productions Practicum Group have become the first students in Canada to generate a digitally shot 3D production and to distribute it on a 3D Blu-ray disc. For the students producing the production ".moneen. Live At The Mod Club" the production was the real deal. Their work included just about all of the aspects involved in a modern 3D production. It included shooting a song at a live concert in 3D, followed by a complete post production workflow cycle that included posting the production in 3D, mixing in surround sound and then burning the final high definition 3D product to Blu-ray media for display and distribution.

To provide the live concert look, the students --Jon Shelson, Corey Peck, Ross Hayes Citrullo and Krystal DiMarca-- employed traditional shooting methodologies to capture the band in a Club setting. They shot the Band using a parallel rig from *The 3D Camera Company* that was fitted with two Silicon Imaging camera bodies. Two camera "offset" 3D rigs are required to generate the 3D media. The students shot the 3D song a number of times during dress rehearsals to gather the close up shots. They then shot it once again during the actual live show. To provide the look they wanted the students quickly discovered that 3D was a different medium. They had to shoot very close to the action and stay with wide shots in order to provide adequate 3D depth for the final product.

But not all elements of the production process were different. The edit started in a manner that was traditional. They employed Apple's Final Cut Pro editing software to visually cut together the 3D materials. The process involved using the "left eye" media only and proceeded along a normal 2D creative editing cycle. It started to differ once the edit was complete. The group had to made use of new software tools produced by Cineform called Neo3D and FirstLight. Working in conjunction with Apple's Final Cut Pro the software combined the left and right eye files into a single stereo 3D file. When it came to working with the combined 3D media, the group found that they again required the Neo3D software to further correct some 3D convergence issues that occurred in some of the original footage. Convergence sets how deep a 3D shot looks and is one of a bevy of new issues that the students discovered that are introduced in a 3D production environment.

The students started the project working with a trial version of the Cineform Neo3D software to figure the "ins and outs" of the 3D workflow. However they quickly found the computer hardware that they were using was not up to par. In order to obtain the GPU power required for the convergence aspect of their project and export the final 3D Blu-ray media, the students made use of a newly minted Cineform 3D suite located in the Digital Cinema And Advanced Visualization Lab at Ryerson's Rogers Communications Centre. They converted the original Silicon Imaging video files to 2K Cineform Quicktime files at a frame size of 2048x1152 at 23.98frames per second.

The students found the process relating to NEO3D to be relatively simple. They attributed this to Cineform's metadata approach over the more traditional render based approach. Cineform works mainly with metadata as opposed to rendering a whole new video file with each adjustment. When adjusting left or right eye files the students found they could immediately watch the corrected stereo file in real time without the time consuming process of waiting for rendered versions.

The project --shot in both 3D and high definition-- employs anaglyph imagery to provide the stereoscopic 3D effect. This means the 3D output can be displayed over a multitude of distribution mediums and displays. Final output includes 3D display on computer monitors, television sets (HD or standard definition) and in movie theatres. By using the anaglyph method there are no issues in distribution either. The content can be distributed via any medium including the Internet, satellite, cable, over the air, by flash media or by optical mediums such as Blu-ray.

From the editing perspective one difference the students found was that in 3D they could hold shots longer before cutting to another. The extra time provided viewers with the opportunity to see the details inherent in the 3D space. Audio also provided new challenges. When recording live the students used a lot of room microphones and locations to sonically identify the space for the viewer. This turned out to be important and that "extra depth" was later incorporated into the surround sound mix.

The students also discovered that in order for the final sound mix to be spatially correct it was essential that an anaglyph 3D version be made available for the final mix. They found that the emphasis in each shot is different in 3D than it is in 2D. One example was the drums. In the 3D version the drums appeared to be very deep on stage and the audio mix had to reflect the depth. To compensate the students developed a surround sound panning technique that incorporated a virtual stage acoustic space. Using the 3D shot selection as their guide they adjusted the sound mix accordingly. Without the 3D version available during the final surround mixing sessions the students are convinced the final mix would have sounded "awkward" to the viewer.

Surprisingly the student group actually found the main issues with the project to be around Blu-Ray authoring. They used Cineform's FirstLight software to create the anaglyph 3D file and then Apple's Compressor for the MPEG-2 files required by Blu-ray. To author the project they employed Adobe Encore for authoring the Blu-ray disc. Despite having access to numerous Blu-ray burners in Ryerson's media labs, they found that they had to spend about 40 hours creating the disc image that they eventually burned. The group noted that Adobe Encore errors and bugs were at the heart of the problems they ran into. The bugs are well known and documented in numerous places. To their credit the students pressed forward using the technology and software given that it was the only viable option they had to complete the project.

The students can be reached at **www.epikproductions.ca** or e-mailed at **3d@epikproductions.ca**. The making of .moneen. 3D video can be found at **http://bit.ly/aTkKc4**

More information on the School Of Radio and Television Arts can be found at **http://ryerson.ca/undergraduate/admission/programs/rt.html**

More information on the Rogers Communications Centre can be found at **http://www.rcc.ryerson.ca/technology/index.htm**