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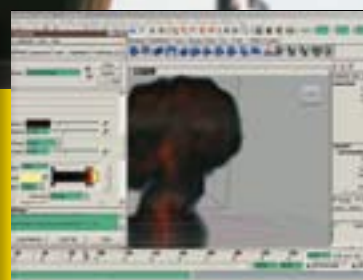
digital media world



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MPC R&D: GI JOE AND SKATING BABIES
BEAUTIFUL KATE - M O G I E: MORDY KOOTS**



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4 NEWS



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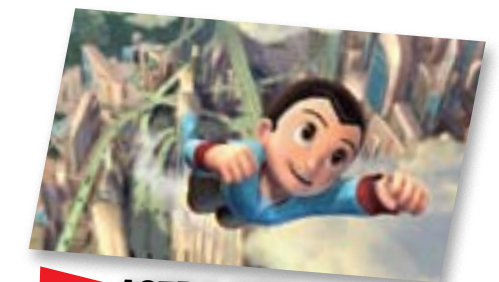
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EDITORIAL

A recent visit to FSM Film and TV Post company in Sydney has left no doubt that Australia is a rich country for digital content creators. A close look around their DI facility and colour grading suite reveals an operation that is ready for virtually any production that comes their way, recorded on film or digitally. You will find out about their process and pipelines in this issue when you read the feature inside on 'Beautiful Kate'. The movie was shot on film by a DOP with a traditional approach - capturing as much of his vision on set as possible. Nevertheless, a top quality up-to-date digital intermediate and detailed grade have played a major role in making this film stand out.

It isn't equipment alone that keeps a studio or an industry going forward. Expert people, collaboration, commitment and taking on new projects and completing them in new ways makes the difference. Looking beyond Australia, the Moving Picture Company's R&D team in London, Canadian Trent Opaloch shooting his first feature on the RED and Imagi in Hong Kong turning 'Astro Boy' into a story for a new generation are other people to watch tackling projects in ways they haven't been done before.

'Moon' is another movie in which the art of cinematography truly meets science. Cinesite's VFX Supervisor Simon Stanley-Clamp's skill with 3D tracking and design demonstrates that almost nothing is impossible. Seeing is believing

Adriene Hurst.

COMING NEXT ISSUE

ANIMATION

Director and Animator Shane Acker has turned his Academy Award winning short '9' into a feature film.

Sony Pictures Imageworks Rodrigo Ibanez developed the character modelling, rigging and animating pipeline for 'Cloudy with a Chance of Meatballs'.

VISUAL EFFECTS

The classic story of Dorian Gray lives on thanks to MPC's innovations in 3D environments and textures.

DIGITAL VIDEO

Australian DOP Chris Moon brings 'The Marriage of Figaro' up to date, shooting on Panasonic AG-HPX502EN cameras in HD.

DIGITAL GAMES

Ubisoft recently acquired studio Hybride Technologies to produce effects for Assassin's Creed II.

ASYLUM REDRAWNS PORSCHE FAMILY TREE



Asylum completed major VFX work for a new TV spot introducing the Porsche Panamera, the company's first four-seat sports car. Entitled 'Family Tree', it shows a fleet of over 50 classic Porsches speeding across an open plain. Shifting camera angles, from overhead to the driver's seat, capture the vehicles' momentum as the Panamera weaves its way through. Interspersed with the ground-level angles is an aerial view of the entire group etching tracks in the landscape to form the branches of the Porsche family tree.

Coordinating several vehicles in 57 separate shots, Asylum's VFX Supervisor Tim Davies and team carefully camera tracked each scene to generate enough accurate camera data to create a realistic landscape. The cars had to be matchmoved and rotoscoped in every shot so that the tracks in the surface and the dust could be procedurally generated from each vehicle. The tracks laid in the surface were crucial to building the family tree, allowing us to see where other cars had already been and, by curving the tracks away from the pack, suggesting the direction the cars moved to form new branches.

Previs was done to scale using satellite views of the set at El Toro Airbase in Southern California to coordinate the action on the tarmac. A CG desert plain with tracks and dust trails from the speeding cars had to be created for the 50 live-action cars to be tracked into. All environments, tracks, dust and previs dynamics were done in Houdini owing to its scalability and procedural capabilities. Asylum used Houdini's Digital Assets to modify the look of the terrain, tracks and dust in one shot, propagate the changes to all shots and handle pre-composites of elements prior to compositing.

Most of the shots needed cars added, or removed and replaced with CG cars. In some cases live-action cars were roto'd from other takes, stabilised and retracked into new plates. To create certain shots,



hi-res photos of each car were taken and relit before being animated, and CG cars were modelled and animated to replace unwanted cars or to populate shots. Every car in the commercial, whether it came from the original shoot or was added digitally, was modelled and matchmoved, so digital assets helped generate tire tracks and dust. Animation and matchmoving the cars were carried out in Maya.

Asylum's team incorporated sun, flares, shadows, dust and tracks into each scene to balance lighting irregularities caused by dawn-to-dusk shooting. The Paint and Roto department extracted several cars from their original backgrounds. The Paint team removed camera vehicle reflections, tracking markers and runway markings reflected in the cars or removed them from shadows. Matte paintings were created in Photoshop, with camera tracking done in Syntheyes and roto in Silhouette v3.4. Final compositing and integration was handled in Flame.

Asylum's CG Supervisor Zach Tucker said, "We built a system to animate cars that included procedural systems for car dynamics and tracks being laid on the surface, allowing us to visualise the number, year, make and model of cars needed in each shot. Finding the correct balance between live action and CG was tricky. The spot always had to be believable. Once all of the elements were created and refined, it was quite an undertaking to mould the imagery into a consistent, convincing place." Agency Cramer-Krasselt/Chicago and Director Jeff Zwart. www.asylumfx.com

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RESIN REVVS UP COMPLETELY CG EVO



the light creates further repetitive motion in the reflections, so when they couldn't reference a specific background they still achieved a sense of movement and speed.

MOCK STUDIO

The car and all other elements

were built in 3D with attention to making the car realistic. They setup a mock studio and tested the technical accuracy of the car model, shaders and lighting until the resulting renders were looking virtually photographic. All the 3D was created in Maya and the majority of compositing was in Nuke, where they also used some projections for parts of the 3D. Some components were also created in After Effects that were later integrated in Nuke.

"The mock studio was really a way of tweaking our car until we were happy with it," said Grant Lovering, Creative Director at Resin. "We worked on the principle of getting it right in a controlled environment before refining it in the world we had created. You can chase your tail on things that might be coming back from the environment. We found it a smart way to work and we ended up with some really sexy renders of the car that have a photographic quality to them. Ultimately, it's the client who has the most critical eye when it comes to a product, and they were blown away with the results of the vehicle."

3D ENVIRONMENT

Starting at sketch level, Resin referenced futuristic films like 'Bladerunner' and cities such as Tokyo and Shanghai where an almost cult following for this type of performance vehicle has emerged. They designed an environment with a combination of 3D and projected matte paintings that would put interesting light and reflection details into the car and make the ride more dynamic without high speeds.

Time of day and city lights give the car a dark background to pop out of. The roadway has a repeating archway element that helped make the car feel as though it's moving faster than it actually is, and

also flexible enough to give the animators complete control," Grant said.

Their rig was an integral part of the 3D scene in Maya, balancing automation and manual control, or 'override'. A mechanical element has a range of known behaviours, which a rig can be built to accommodate. But the animators also want the flexibility to fine tune the action. The rig helped keep the wheels locked to the road on the animation path, and simulate real vehicle dynamics.

CAMERA MOVES

All cameras originated in Maya and were passed around to Nuke and After Effects. "For a lot of the ad we kept the camera nice and low to the ground to capture the vehicle in an aggressive, dominant stance. We also moved the camera around the vehicle and around obstructions in the environment, which would have been physically impossible to do in live action," said Grant. Holding critical focus through such complex moves is a further benefit of working through CG. They deliberately added organic variation into the camera to avoid ending up with too consistent a result.

"We were given enormous freedom to really go at it our way," said Grant. "We constantly looked at ways to add a percent here and there and were quite tough on ourselves internally. We don't often have a chance like this to demonstrate what the studio is capable of, in terms of time or latitude, to explore and detail a project." www.resin.com.au/Proj_mitsu_lancer.shtml
www.resin.com.



MAD MAX HITS THE ROAD IN NSW

Premier Nathan Rees announced at the end of October that NSW had secured production of Mad Max film 'Fury Road'. The director is to be George Miller, and production will take place over the next two and a half years with a potential to create over 500 jobs.

He said that Kennedy Miller Mitchell will start pre-production immediately and filming is scheduled for 2010 and up to 30 weeks of filming will take place around Broken Hill. CarriageWorks commercial bays in Redfern will be used as a base for development work. Warner Bros has financed and will distribute the production.

The first Mad Max movie was filmed in Victoria in 1979, and later titles in the series were shot in western NSW. 'Fury Road' builds on other upcoming projects including 'Underbelly III', 'Happy Feet 2' and 'Guardians of Ga'hoole', currently in production in NSW. 'Tomorrow When the War Began' began filming at the end of September in the Hunter region, with Ambience Entertainment as producer and Australian distributor Paramount Pictures, as the directorial debut of Australian Stuart Beattie, screenwriter for 'Collateral', 'Australia' and 'Pirates of the Caribbean'.

Another romantic comedy 'Griff the Invisible' by debut feature film writer and director Leon Ford has started shooting in Sydney. Australian actor Ryan Kwanten plays Griff, office worker by day and superhero by night. The film's Producer is Nicole O'Donohue. It will be distributed by Transmission Films, distributors of 'Samson & Delilah', 'Balibo' and 'Charlie & Boots', and is expected to release nationally in late 2010.

On the down side, Warner Bros. Pictures has advised Screen NSW that 'Green Lantern' will no longer be filmed in Australia. The Studio indicated the decision was due to the current global economic situation, including fluctuations in currency valuation and overall costs. Warner Bros. Pictures has shot several films in Australia, including the 'Matrix' trilogy and 'Superman Returns', and say they look forward to filming here again in the future.

A Bollywood movie begins shooting in Sydney in November, creating jobs for cast and crew. The movie, a remake of the US feature 'Step Mom', features actors Kareen Kapoor and Kajal with Director Siddhartha Malhotra, produced by Dharma Productions. Dharma has hired TEMPLE in Sydney as the Australian production company.

In Victoria, 'Killing Time', a FremantleMedia Australia production for TV1, is a new crime drama of ten one-hour episodes, based on the story of disgraced lawyer Andrew Fraser. Production on 'Killing Time' is due to begin



filming in Melbourne in 2010 with production investment from Film Victoria. Ian David, writer for 'Blue Murder' and '3 Acts of Murder', heads the writing team which includes Mac Gudgeon of 'Last Ride' and Katherine Thompson from 'Satisfaction'.

AARDMAN PREMIERES TIMMY WITH AJA

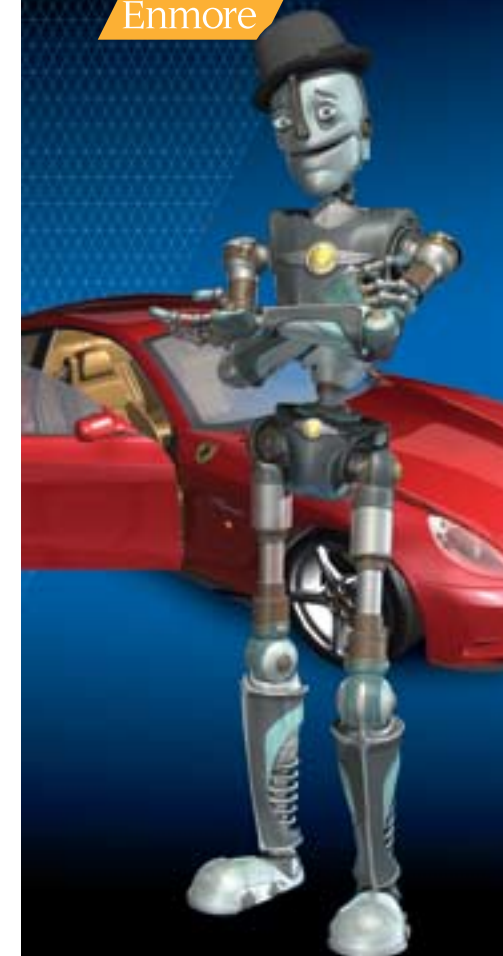


Aardman Animation's first major pre-school program, 'Timmy', is scheduled to premiere in late 2009 on Playhouse Disney channels worldwide. 'Shaun the Sheep', a 'Wallace and Gromit' spin-off, will also air in 2009 on CBBC, the children's arm of the BBC.

The company has now taken on 15 KONA video capture and playback cards. The KONA family is AJA's line of 10-bit uncompressed capture and playback cards for video and audio input and output on the Mac platform. The KONA 3 supports SD, HD, Dual Link 4:4:4 HD and 2K formats.

"We use the KONA cards for monitoring all broadcast projects," said Paul Reeves, Aardman's technical support engineer. "Once we decided to upgrade to Mac systems in 2006, we put a KONA card into each one, and they have never failed us." Aardman employs AJA's breakout boxes with all their KONA cards. "The breakout boxes make installation easier," Reeves said. "The driver software is simpler than other software I've seen for similar products."

Aardman also employs AJA mini-converters. "Since 2007, we've used them everywhere - in the studios, edit bays and our new theatre. They can do HD and SD distribution, SD to HD up-conversions, HD to SD down-conversions, SD audio embedders and SD audio de-embedders." www.adimex.com.au



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BETTER WEBSITES BY DESIGN



The Expression Blend interface maximises the workspace and includes features such as a dynamically filterable Properties panel to help users find what they're looking for.

Earlier this year, Microsoft announced the launch of Expression Studio 3 in Australia. Although most of Microsoft's products focus on technologists, Expression Studio was initially developed as a platform for designers to take a more active role in website design and development.

Traditionally, website designers mock up their work in Photoshop, Illustrator or Dreamweaver as static compositions, which they then pass to a developer. Because this process frequently prevents carrying out a full series of iterations, tests and refinements essential to the design process, Expression Studio is meant to extend the designer's influence on the project further into the build stage.

The developer works alongside the designer, using Microsoft's developer tools in Visual Studio, and their work can overlap to an extent. The designer can continue to change and control looks, rearrange elements on a page or even re-order elements between pages without affecting the developer's work, such as fetching data



SketchFlow helps designers, developers, information architects and account managers sketch, wireframe and prototype user experiences and interfaces.

from a database or submitting requests from a user. Likewise, because the developer doesn't have to wait for the designer to stop, refinements can continue during dialogue and they can work out compromises over database restrictions and other limits on functionality.

The goal is the creation of websites with better presentation and delivery of database resources, images, video or other assets, and integration with the Virtual Earth Platform. Expression Studio 3 comprises five components.

Expression Blend is used to create interactive user interfaces, enabling buttons at the proper stage of interaction, for example.

Expression Web creates compliant standards-based Web sites using HTML, CSS and other scripting languages.

Expressions Encoder prepares video assets in various formats for websites.

Expression Design creates graphics content that can be used directly within Studio's authoring applications Expression Web and Blend. It can export graphics and complete layouts as XAML, although it doesn't aim to replace Adobe CS4, which most designers use and feel at ease with. Expression Web is compatible with JPEG, GIF and PNG assets as well as Silverlight files and full HTML compositions from Expression Design.

The fifth component, new for version 3, is SketchFlow. Designers use SketchFlow for prototyping and iteration of their designs when they are ready to activate them as part of a website. They can build up a rough, sample website with SketchFlow to test interactivity and the user experience, without having to learn the mechanics of building the final system. They generally begin with a screen flow diagram and use this to map the progression of the user through the site from screen to screen.

As he or she works, the designer may use an annotation function to explain the screens to the client. The prototype site



The user interface in Expression Encoder gives designers, editors and producers the ability to generate rich media content, contained within Silverlight.

plans can be emailed to clients and project stakeholders for their annotations, which are added as separate layers, not actual changes to work. To make the process quicker and easier, designers can populate their plans using a sketchy style, but at the same time the objects they create will perform as actual controls – buttons, dropdown menus, sliders and others – to be rendered later.

This means that the clients and designers have a chance to completely design the functioning of the site before styles and colours are finalised. Screens can be linked to test navigation, passing of requests and handling events, for example, before finally linking controls to databases. Sample data can even be dragged and dropped into list boxes for testing. However, to keep ahead, the designer can start rendering and designing looks with his colleagues while the clients keep a parallel, 'sketchy' version to continue with adjustments.

While the designer and stakeholders use SketchFlow to build their prototype, it produces Silverlight code, the underlying framework on which Expression web pages are based. This means that although the designer retains the potential to make further decisions about functionality, the developer continues to deal with back end issues such as access to data assets and security. www.microsoft.com.au/expression



Microsoft Virtual Earth, combining accurate geospatial data and location-based applications, uses Silverlight as a platform for interactive web-based mapping. Virtual Earth also gives GIS customers a view across their organisation's spatial data.

Sony Captures Winter Olympians



Non Standard Media production crew sets up for interviews with Australian Biathlon athlete Alex Almoukov and cross-country skier Aimee Watson.

Sydney based production company Non Standard Media recently covered a Foxtel shoot supporting a special Olympic program titled 'Vancouver Dreams - Sea to Sky Games'.

Their job was to record interviews of each of Australia's prospective 2010 Winter Olympians. The footage would also being used to create bios on the athletes to use leading up to and during Foxtel's Olympic coverage. They needed cameras and equipment to capture various types of footage, from interiors to snow and sun conditions.

While in Canada for the original shoot, Head of Production Lindy Harman and her team had used the Sony HDWF900. Although they would be under tighter

budget constraints for the following shoot, they would still need equipment that could produce images of comparable quality.

The crew hired their equipment in Sydney from Videocraft. Lindy said, "The Sony PDW700 XDCAM HD was suggested to us because it could transfer data directly into the edit suite via the PDWU1 XDCAM drive at faster than real time speeds, and save ingest time in post production. We trialed it on a shoot at an ice skating rink and were also impressed with the HD picture quality." The Sony PDW700 is a purpose built ENG/EFP camera made for most lighting conditions and maintains performance moving from cold icy locations to heated interiors. It can be adapted for camera setups in different shooting environments.

They shot the athlete's interviews on location in Perisher at Blue Cow on a hill overlooking Perisher Valley and Guthega. "In and around Perisher, we also shot action footage of most snow Olympic sport disciplines including ski cross, snowboard cross, snowboard giant slalom, cross country ski and biathlon," Lindy said. "Our cameraman was out all day on skis with the camera following the athletes skiing, boarding over jumps and following the cross-country skiers around their respective courses. We actually had several cameras



The Sony PDW700 is made for most lighting conditions and moves from cold icy locations to warm interiors.

on this shoot, one for shooting interviews and general footage and the others shooting all the action shots."

The first day brought glaring sunlight and the second day had gale force winds, snow and freezing temperatures with very low light while they captured action shots of skiers, stand-up interviews and general views in and around Perisher. "Despite all of that the kit coped with the extremes, and was easy to pack and unpack," Lindy said. www.videocraft.com.au

Lückow Puts OConnor Fluid Head to Work on Antichrist



control system. "A third roll/dodge sensor sat on top of the OConnor head with hand bars in front," said Lückow. "That way Anthony could hug the OConnor and point anywhere, using his own body movement to give the shot a handheld feel. The OConnor's precise settings and the stability of the head helped match moves to the other handheld shots."

Lückow has also started using the 120EXe for heavy-duty effects work. For a recent datalogging shot,

Lückow said that he needed stability and high precision on the pivot points/nodal offsets. It was a heavy camera set-up because they were using an Angenieux 24-290mm zoom, and when he had the opportunity to use the 120EXe, he chose it as the main head to get precise data for the camera position.

On another occasion Lückow was charged with a green screen shot using Mo-Sys' 3D inserter with the 120EXe. "We had to change cameras when we shot high-speed frame rates and needed to put the camera in precise offsets, because the

nodal offset needed to be the same every time," he explained. "With the 120EXe, I could interchange the cameras and balance them, and then quickly frame up and get the correct offsets through the pipeline."

"Even when placing a heavy camera within tenths of millimeters and fractions of degrees of other heads, the 120EXe can maintain reasonable precision. The sensors are also precise and stable. The Mo-Sys' databus delivered the data to our 3Dinserter, which previsualised and logged the data." The OConnor 120EXe provides absolute output pan and tilt position information via a 19-pin Fischer connector. Mo-Sys provides a companion encoder box that allows high-res pan and tilt data of 1.8 million counts per revolution, suitable for film and HD formats.

The 120EXe features built-in encoders rather than bolt-on hardware. It can support a camera package up to 54kg through the head's 90° tilt range, and counterbalance up to 109kg through a tilt range of 60° degrees. The 120EXe is sold world-wide, exclusively through Mo-Sys: www.mo-sys.com www.vitecgroupp.it

YOUNG ANIMATION STUDIO TELLS AN ANCIENT STORY



Big Bad Boo has now undertaken its first entirely digital production, 26 eleven-minute episodes of 'One Thousand and One Nights'

From its origins as a virtual animation studio that farmed out production to outside companies, Big Bad Boo Studios has blossomed. At the Mip Junior show in Cannes in October, their new children's TV series '1001 Nights' ranked sixth among the top 30 most viewed properties ahead of 1200 other children's entries.

For its first animated program 'Mixed Nutz', a multi-cultural comedy about a group of kids who feel they don't fit in, preproduction was divided between studios in New York and Los Angeles, while animation was contracted to the Philippines. Then in 2007, halfway through production, co-founders Aly Jetha and Shabnam Rezaei decided to centralise.

INTO DIGITAL PRODUCTION

They opened Big Bad Boo as a dedicated production facility in Vancouver, started their own distribution company called OzNoz Productions and implemented an all-digital workflow integrating Photoshop CS4, 14 Wacom Cintiq 21UX interactive pen displays, Toon Boom Storyboard Pro and Toon Boom Harmony. Among the 70 staff members, 25 are animators and three are revisionists working through specific problems.



The most significant digital time savers were storyboarding and layout, where animators could eliminate paper boards and scanning.

The new pipeline saved the team considerable time, and they soon completed 'Mixed Nutz', currently showing on Shaw TV in Western Canada and due to air on PBS later this year. The most significant efficiencies were in storyboarding and layout, where they could eliminate paper boards and scanning. Big Bad Boo has now undertaken its first entirely digital production, 26 eleven-minute episodes of '1001 Nights', an animated comedy targeting the six to nine age group based on the ancient Persian tales of Shahrazad.

They use the Cintiq 21UX displays from asset creation and management to the final stages. Comparing the storyboard process of 'Mixed Nutz' to '1001 Nights', Shabnam Rezaei explained that artists previously needed to paste pieces of paper onto the storyboard panel indicating changes, or draw them in and rescan the board. Now, storyboard revisions are drawn directly onto a Cintiq screen in Photoshop CS4 and Toon Boom Storyboard Pro, where an animatic is created prior to animation in Toon Boom Harmony. "To prepare one or two scenes the old way, including scanning, would take an entire morning," said Layout Supervisor Chris Muzyka. "The process now takes about an hour."

The animators like the pens as well, which vary line weight as they vary the drawing pressure on the pen, and work well on the textures and line types used in the series. Also, the displays are large enough to show an entire board at once, which can make layout decisions, smooth transitions and animation timing easier than when using a smaller tablet or a mouse.

STORYBOARDS AND TRANSITIONS

Work on a series begins with the character designs, background and layout drawings in Adobe Illustrator and Photoshop. The jpg files are imported into Storyboard Pro for scene planning and composition. Using FCP, timing, pacing and transitions are worked out. The sequences are edited and brought back into Storyboard Pro. Meanwhile, the layouts are refined and the modelling gets underway on the characters. The backgrounds are given angles to suit the scenes, coloured and cleaned up. When the stager brings the assets – models, props and backgrounds – and layouts into Harmony where scene staging takes place, the work is broken up into episode scenes and the actual animation can begin.

Shabnam explained that they start a new episode every two weeks. As it moves down the pipeline, they start another. Therefore, it is hard to give an average length of production for a typical episode. "At any given time, we are working on multiple episodes in various stages," she said. "For the 26 episodes of '1001 Nights', the overall schedule is about 18 months."

HISTORICAL REFERENCES

"We use all kinds of references. Because we are depicting one of the greatest epics of all time, the books of 'One Thousand and One Nights', we have brought onboard Dr Paulo Horta, an expert from Simon Fraser University to help adapt the stories to suit a modern, young audience." For artwork, they use history, animation and architectural books, drawing guides and country guide books because each story takes place in a different country. To design the Persian palace where each story begins, they studied old Persian buildings and historic sites such as Persepolis in Iran. "We like to incorporate small details into the backgrounds such as the Persepolis flower, an important symbol from the Persian Empire."

Shabnam hasn't been tempted so far to venture into 3D animation. "We really like the 2D environment. Creatively, I feel there is something very simple and honest about it that keeps the audience focused on the characters and the stories. We are not trying to dazzle them with technology or camera angles. A good story can be told with stick figures."

Now that 'Mixed Nutz' is airing in North America, the studio is securing broadcasters for its international launch in January 2010. With '1001 Nights' in production and a new series 'Gone Bananas' in development, this studio will be busy for some time. www.bigbadboo.ca



50 Kaliber Films Gets Behind Web Video



50 Kaliber Films in Melbourne is a video production company producing brand commercials, television programming and corporate communications with a passion for web video.

50 Kaliber has found they need to be able to produce all types of video products - television commercials, wallpaper videos for shows and events, internal videos, external brand videos and creative, high quality video clips for the web. Clients include BHP Billiton, Mercedes-Benz, Ford Australia, Honda MPE, Mitsubishi, Suzuki, Telstra Super and Fonterra Brands, as well as smaller local companies. 50 Kaliber usually has about five or six jobs going at once, at various stages of completion, but emphasise the importance of taking their projects from start to finish.

COMPETITIVE ADVANTAGES

In the seven years since Dieter Kahsnitz and Lindsey Hughson founded 50 Kaliber Films in 2002, the company has grown into a fully equipped production house employing 15 people and freelancers hired for specific jobs. They supply a full production team in-house including a producer assigned to each job, camera operators and sound engineers, plus editors, 2D and 3D animators to carry out post production.

They also create three weekly podcasts of their in-house web show called 'The C Word', for people interested in cars and culture, which can be viewed at www.cword.tv. The company's Senior Editor Evan Butson said, "We see online media as the way of the future and it's also a

creative outlet for the crew. It helps us stay on the 'cutting edge' in our filming and creative work, and it allows us to test ideas and projects that our clients may not be ready for. We've developed quite a cult following with the C Word, and we're working to expand our audience across the globe."

Dieter is optimistic and excited about the medium of web video as a form of mass communication. It has the advantages of minimal distribution costs and a large degree of control over quality, he says, and audiences can watch online or download to watch in real time. Evan described the two signature styles they apply to their films, "Smooth, emotive and high quality for corporate clients, alongside a factual, entertaining style for documentaries. The new opening credits we recently completed for 'The C Word' reflect our style."

TECHNOLOGY PORTFOLIO

Since their workflow changes from job to job, they need to be fast and adaptable and have found a set-up that covers most situations and formats - for the time being. On the technology side, they use Apple Xserve, Final Cut Server, Mac Pro and iMac computers, Final Cut Studio, Adobe Creative Suite 4 - Master Collection and Red Giant Magic Bullet. The Panasonic HVX202 is their primary camera, supported by a Sony HVR-Z1P 1080i camcorder.

Evan outlined the hardware they purchased for a significant upgrade they made to the edit suites not long ago. "We use two Blackmagic Design Multibrige Pro editing systems as our primary ingest sources plus five Intensity cards for local monitoring. Multibrige Pro is useful where multiple I/Os are required," he said. "Also, because it is an external device and rack mountable, we didn't have to deal with interference inside the computer case or external cable dongles, and could integrate it with our existing patch bays fairly easily. The system works equally well with Final Cut Pro, Adobe Premiere Pro, After Effects and Encore, and lets us share media with other products, in OS X and Windows environments."



ABOVE: Scenes for a corporate project get edited on the timeline in Final Cut Pro.

WORKFLOW DEVELOPMENT

50 Kaliber's workflow has developed over time. They recently transitioned their primary edit suites over to a Fibre Channel SAN and continue to update their workflows. "Our media is now ingested through a capture workstation running a Multibrige Pro from a variety of sources - primarily HDV, DVCAM and DigiBeta. We're also switching to more and more tapeless media by way of the Panasonic P2 format, but we have to work on a job-by-job basis depending on our client's requirements and turnaround time," Evan said.

The proportion of projects recorded in HD format stands at roughly 10 per cent. They still record primarily in standard definition because most clients have yet to upgrade to HD playback systems. Once the media is ingested, it is entered into the Final Cut Server database, and then any editor on the SAN can access that material for editing. They all monitor to CRT screens via Intensity cards. All editing is done over the SAN and final jobs are either sent to the render queue for digital delivery or, for rush jobs, they can be pulled up on the capture workstation and played out in real time to tape by the Multibrige Pro. www.50kaliber.com



ABOVE: 50 Kaliber recently designed new opening credits for 'The C Word', their in-house web show.

FULL MOON



WORDS: ADRIENE HURST

Images - copyright Lunar Industries / Sony Pictures Classics

Usually, 'seamless' describes effects that are invisible to viewers and result in sequences showing familiar events. But for 'Moon', the VFX team at Cinesite have pushed the boundaries of that definition and created a beautifully accurate lunar environment as believable as the view outside your window. Visual Effects Supervisor Simon Stanley-Clamp discusses his process.

Sam Bell is a lonely astronaut. He has left his wife and daughter behind on Earth for three years to run a helium harvesting operation on the moon as an alternative energy source, for his employer Lunar Industries. Except for an unnervingly intelligent and articulate GERTY computer, he's going to live and work at the moon base completely on his own. Or so he expects, until he turns up at the site and finds a double of himself already there. The story that unfolds is a dark sci-fi tale dealing with cloning, identity and human vulnerability.

LIFT OFF

Cinesite first read through the script in November 2007. They recognised it had a great story and worked up a bid based on 167 shots at that stage, helping to conceptualise looks and planning the techniques they would use for the effects. The project required extensive research and a detailed, three dimensional set survey to make sure the team would be

able to rebuild the interior environment of the moon base digitally. The production also involved miniatures for some shots. Although Cinesite did not provide the miniatures, Simon supervised the miniature shoots as well as the visual effects on the main unit.

MOTION CONTROL SPROG

Construction of the set was underway at Shepperton Studios early on, which gave Simon and his team a chance to carry out a handful of shooting tests in January 2008 with The Visual Effects Company, who wanted to test the usability and repeatability of their system called SPROG, the proposed motion control hardware. These were shot on video to create quick turnaround test comps as a proof of concept for full production filming.

The portable SPROG rig, a computer controlled film camera, was used to record many of the key effects shots in the film depicting scenes showing Sam with his double. The

rig filmed the multiple passes Cinesite needed to create split screen composites used throughout the film and especially for the prolonged, intense dialogues in which the two men, who turn out to be a pair clones, gradually begin to trust each other and come to grips with their predicament.

EIGHT WEEK SHOOT

The eight week shoot began with principal photography in March 2008 at Shepperton, where Simon and Visual Effects Producer Angie Wills were on hand working with Director Duncan Jones, Producer Stuart Fenegan and Director of Photography Gary Shaw. Simultaneously, Cinesite's 3D artists began designing, modelling and texturing the movie's CG robot character GERTY, ready to add into scenes.

"Throughout the shoot I knocked up storyboards, for myself as much as anything, to keep on track of our daily requirements and did as many test comps from the telecine footage as possible to help the editorial team primarily with the clone shots," said Simon. He remarked on the skill that actor Sam Rockwell, who played Sam Bell, developed when performing these challenging scenes. "He studied his performance on a video i-pod and always got his eyelines spot on and knew when and where to move to avoid colliding with himself. Initially, and throughout the eight weeks of shooting, we had



A portable motion control rig called SPROG was used to record critical effects shots depicting scenes of Sam Bell with his cloned double.

a very small team on board and the budget didn't allow the luxury of producing any previs. Most of the money went into final shots."

Principle photography rolled straight into a week of green screen photography with a two week gap before the miniature shoot kicked off at the end of March for a further 10 days. "In early May 2008, we had an in-depth run through of the first cut with Duncan. At this point, the shot count had risen to close to 300 shots and at the end of May, a new budget was thrashed out. Post began in earnest in June with final delivery at the end of November 2008."

SHOT-SPECIFIC HDRI

In the third week of shooting the tracking department moved into the moon base for a weekend, to work up a very thorough survey of the set. They used a Leica total station and DSLR camera for reference stills and were also fortunate to have a lidar scan of the rec room, coms unit and hallway - the most used areas of the set - carried out as a favour to Cinesite by Ian Nichols at Lidar VFX.

The following weekend, they photographed HDRI high dynamic range imaging for the entire environment under the 'day' and 'night' settings. This survey formed the foundation for the lighting environment for the moon base set, which was Sam's world. Shot-specific HDRI photography was taken throughout the shoot, too.

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VISUAL FX

“For example, whenever the GERTY robot body or either of its industrial mechanised arms appears in shot, I photographed HDRI, capturing the exact lighting set-up for that shot,” Simon said. “DOP Gary Shaw would add specials or additional reflectors to the generic ‘moon base’ lighting scenario, so it’s especially important to get shot-specific HDRI for these scenes. Additionally, the main unit camera would film a chrome and grey ball pass under the same conditions, where I would walk the path of the robot. Kit used for HDRI capture was Agnos nodal head, 8mm fisheye and EOS 20D.”

The film was shot on Kodak Vision 200T 5274 and Vision3 500T 5219 stock, the negative was scanned on Northlight, composited in Shake and Nuke, and the DI was printed out to Kodak Vision 2383. The whole film underwent DI, so whatever treatment applied to the non-effects shots was matched on the effects shots.

BEST FRIENDS

The robot character GERTY had to be immediately believable because it was meant to serve as Sam Bell’s sole and constant companion at the isolated moon base. While the props for the body and arms of the robot were in a rudimentary state, they took measurements and reference stills to get started on 3D modelling for what would become the fully animated character. When final set dressing was

completed on the practical GERTY prop, a very extensive texture shoot was carried out. This data went into generation of the texture maps for the final 3D build. Stills of the dressed GERTY body and two arms were taken under flat lighting to form the basis of their texture maps and shaders for the 3D model. Stills were taken on a Cannon 1DS Mk3 with each still at a resolution of 6k. These were manipulated, stitched together in Photoshop and rendered in Renderman.

Simon explained the process of incorporating the model into the 3D set. “Our 3D GERTY traverses the moon base suspended on a rail embedded in the ceiling. This was dressed into the set and formed part of our 3D build. By lining the two up for any given shot featuring GERTY, you have the path it will travel. The 3D set ensures accurate line up and aids tracking, placement of lighting and true environmental reflection back into our 3D GERTY.”

LUNAR IMAGERY

A critical part of Cinesite’s input into ‘Moon’ was realising Director Duncan Jones’ vision of the lunarscapes by creating the environments as digital matte paintings. “Duncan’s key reference for all lunar imagery was Michael Light’s ‘Full Moon’, a collection of stills on and above the moon, the well-known images most of us have grown up with,” said Simon.

“The collection was always close to hand during the



ABOVE: An essential aspect of Cinesite’s work on ‘Moon’ was creating the lunar environments as digital matte paintings. Director Duncan Jones had various references in mind to help develop the looks. **BELOW RIGHT:** Cinesite’s 3D artists designed, modelled and textured the CG robot character GERTY, ready to track into the 3D set.

dressing of the lunar landscape model and throughout post production we kept one in the Producer’s office. Many of Duncan’s other references were already there in front of us, in the set, costumes, hair and make-up by the time plates were turned over - ‘Dark Star’, ‘2001’, ‘Outland’, ‘Silent Running’ - we worked these into the grading of the CG and the matte painting work. And Duncan loved lens flares, aberrations, any natural optical errors. A lot occurred on set but we added a whole load more in post! They were all real elements shot on film and comped back into the plates.”

POWERFUL COMPOSITING

Skilled compositing was essential to the looks and believability of ‘Moon’. “Shake is Cinesite’s principle compositing tool and as a ‘power user’, we have an almost unlimited number of licenses for the product. We have also recently introduced Nuke into the compositing department and were able to put it to good use on Moon for extending the practical lunar plates with our oversized digital matte paintings.”

In addition, intermediate compositing also kept Simon on track as he worked through production. “I run Shake on my laptop, which is good for video res composites on set. Telecine dailies can be imported via editorial or a firewire feed from the video assist workstation onset - so I’m able to make selects and temp shots up between takes or over lunch. This was done with the initial SPROG test and throughout shooting, for the scene with Sam 1 and 2 in the recreation room handling the craft knife, the ping pong match, ‘Walking on Sunshine’ clone shots and ‘Midnight Cowboy’ clone shots.”



CREDITS

VFX Supervisor: Simon Stanley Clamp
VFX Producer: Angie Wills, Paul Edwards
VFX Coordinator: Lee Chidwick
CG Sequence Supervisor: Simon Maddocks, Chas Cash
Senior Model & Texture Artist: Royston Willcocks, Shaun Scott
Character Animator: Marc Stevenson
Senior TD: Holger Voss
Senior Digital Matte Painter: Roger Gibbon, Sevedalino Khay
Lead Compositors: Dan Harrod, Dave Sewell, Alex Smith
Lidar scan: Ian Nichols at Lidar VFX



WORDS: ADRIENE HURST
Images courtesy of FSM

COLOUR AND LIGHT FOR 'BEAUTIFUL KATE'

One of Australia's most successful films this year, 'Beautiful Kate' was shot on Fujifilm stock and underwent a complete digital intermediate process at FSM Post Production facility in north Sydney.

The film was scanned on FSM's Northlight scanner, and colour graded on their Baselight nonlinear grading system at 2K film resolution.

LOOKS REFERENCE

Director of Photography Andrew Commis had a vision for 'Beautiful Kate' to bring to the screen. "I was striving to make the film's world feel authentic and at the same time imbue it with a crafted understated look. The heat is overbearing, nights are inky and foreboding and interiors darkened as light searches out details. The stocks I chose were going to be taken to the limits at both ends. I wasn't wanting to 'play safe' and fix it in a grade, I wanted it on the neg."

Fortunately, Director Rachel Ward was willing to let Commis follow up on his intentions, taking his references from the location - bright sunlight contrasting with dim interiors - and from the script, which sets the story in the heat of summer in South Australia. He collected old photos of the area for reference, and Ward also kept a scrapbook of pictures to guide the look of the film.

"I ran through the stocks I had in mind with an exterior and interior set up, plus tested a few others to see if I found any surprises," said Commis. "The tests were then scanned into the grading system at FSM, where the DI Colourist Billy Wychgel and I were able to pretty comprehensively analyse each stock."

TESTING STOCK

Before working at FSM, Billy Wychgel had gained film and photographic knowledge as the colourist on 'King Kong' and the last two 'Lord of the Rings' films. He went out on location with Andrew for the film tests, some done as stills, completed three or four months ahead of the shoot. Billy was careful not to overgrade the rushes, trying to reveal the variations and potential problems in the stock.

He and Andrew discussed the results and decided to go with different types of Fujifilm, which Andrew had admired in the past for its grain structure and complex colour palette. "I chose the Fujifilm Eterna 64T for exteriors, generally

overexposed a stop, 250D for set interiors - location interiors were a mixture of 64T and 250D - and 500T, a particular favourite, for my night work. At the end of the day, though, it's always instinct more than data and numbers," said Andrew.

Billy said that Andrew had wanted to be able to do a traditional style grade in which the complete story and all details have been captured on the negative. During the shoot, he made deliberate, creative use of light, shadow, contrast and exposure to express his ideas on set about how the film should look. In Billy's view, his efforts were very successful.

COLOUR BIBLE

At FSM's studio, Billy explained that after a film has been edited, he receives the footage from the editors with their EDL. He scans it on the Northlight into the Baselight grading system, which performs the conform to high resolution raw images on the hard drive in the grading suite. Ideally, the next step is a cut-down. This involves taking a shot or two from each scene and, with the Director and DOP, experimenting with looks to create a colour bible or overall plan of how the grade will progress from the beginning to the end of the movie, across interiors, exteriors and locations.

Andrew Commis was an active participant in the colour grade for 'Beautiful Kate', which was a bonus. Billy said that fairly often, the DOP and Director aren't available by the time the edit is finished and the grade can start, which can make it harder to decide which way to go on a grade. DOPs have to get paid for their time, or may have become involved in other projects. But Andrew wanted to contribute, and Billy was able to preserve and work with a lot of the detail and composition Andrew had captured in his footage.

Because Commis had deliberately overexposed some of the sequences shot outdoors in full sunlight, the contrast with the interiors had to be balanced. But some scenes needed surprisingly little intervention. A scene shot in a dance hall with very low lighting and coloured lights looked as though it might have needed work done on it later to bring out the details could, in fact, be virtually left alone.

DI TECHNOLOGY AT FSM

When FSM purchased their Northlight scanner some years ago, they were the first post house in Australia to buy one. The Northlight scanners, made in the UK, have gained a good reputation and are in use at some major studios around the world such as ILM, Framestore and Cinesite. They scan all film formats, 16 and Super16mm, all 35mm formats, 3 perf, 4 perf and VistaVision. The most recent version handles 4K workflow and digital cinema projection. At FSM, the film frames are scanned to Log DPX files. They remain in that format throughout the whole process, during grading and VFX, until the final rendering is completed to be sent for the filmout. The images are viewed via a Barco DP100 projector.

Another attraction for FSM was that the Northlight's manufacturer FilmLight produces the Baselight colour grading system with Truelight calibration software as well, which FSM has also purchased, giving consistency across their post production departments. Baselight is a non-linear grading system, which means that, after performing the conform according to the editor's EDL, all images are available to the colourist at once. Editors, as well as grading technicians, find the Baselight system relatively straightforward to use and understand.

As the main function of a DI is to gather and capture all imagery and assets for a production and normalise their aspect ratio, resolution and colour space, Baselight works with different input and output resolutions and formats, and with linear video and log image sequences. The systems have real-time connectivity for SD, HD and 2K via tape and SAN systems.

Decisions are captured in a database so that projects can be shared. Actions can be modified until the last possible moment, and the conforming system will permit changes to the edit.

FSM now have three Northlight scanners for their DI work and TVC production. Four other post production companies now run Northlights in Australia, three of these in Sydney and one in Adelaide.

BELOW: Dim interiors like this one were typical of the film's footage. The colourist can bring up the details in the darker areas if required. OPPOSITE: By contrast, shadows in the sun-washed exteriors needed toning down.

Despite the low, coloured lighting in the scene below, DP Andrew Commis managed to capture on film the look and almost all details as he wanted them, needing very little attention during the grade.





The countryside where 'Beautiful Kate' was filmed was an important feature in the story. The fact that the footage was shot in winter, while the story takes place in summer, demanded some adjustment to skies and daylight.



COLOUR CONTROL

Billy talked about the control that a colourist has in the grading suite through his ability to affect contrast, coolness and warmth, saturation, day and night and other characteristics on a shot-by-shot basis. By deepening shadows, the grader can obscure details that the photographer may have worked to include in his composition. By highlighting certain areas of the frame, the viewer's attention can be attracted to or away from an object that the director intended to emphasise, or drawn up to the foreground or away into the background of a shot.

Therefore, he prefers to work with a colour bible, compiled with input from the director when possible, to identify looks and set some limits. The colourist's starting point is almost always skin and hair tones, because viewers are sensitive to

these tones. Blonde hair can sometimes appear greenish on film, for example, which needs to be adjusted.

EFFECTS AND TITLES

FSM's post production work on 'Beautiful Kate' continued with seamless visual effects. For example, although the story takes place during the summer, the film was shot during the winter, which required changing the light and tones in some scenes, and adding some 3D moths for authenticity. One or two shots needed day-for-night effects to change a day shoot into an evening scene.

Some sky replacements were made, in particular a starry night sky behind a screen of tree branches. Towards the end of the film, the father of the family in the story dies in their home. The camera shifts over to the window in the bedroom and as it begins to drift up through it, the sky the viewer sees there was also replaced. Another dramatic sequence shows the pair of brothers fighting, although the two actors hadn't been filmed together through the entire scene as it appears in the film.

The movie's distinctive titles were also made at FSM. The design team took handwritten text from Rachel Ward's scrapbook, written by Bryan Brown, as their inspiration to develop the text for the titles using After Effects, Illustrator and Photoshop.



BELOW RIGHT: FSM's design team adapted the text for the movie's titles from handwritten notes in a scrapbook.

PANAVISION AUSTRALIA LOOKS TO THE NEXT 50 YEARS



connections to local filmmakers. They have provided access to the latest equipment, which can be supplied as needed. Local features and TV that have been made with the Genesis, for example, include 'Carla Cametti', 'Accidents Happen', 'Kings of Mykonos' and 'Daybreakers', to name just a few.

Nevertheless, regarding the distinctive looks and success of the 'Matrix' movies, 'Mission Impossible II', 'Moulin Rouge', 'Australia' and other major movies Panavision's equipment has been used for, Martin Cayzer said, "The DPs, Art Directors and Production Designers have been responsible for achieving the looks. Panavision's contribution to these productions has mainly been our custom lens packages - anamorphic (C Series

through to the latest G Series), Primo spherical range, Digital Primos and others. It is a collaborative, creative contribution."

Panavision's support for large international digital features such as the 'Narnia' films and 'Superman', local features and TV drama, documentaries and commercials is set to continue. They supply on-set systems for RED and Phantom cameras. "Digital capture is an evolutionary process," said Cayzer, "and we are in the enviable position of still having the largest film camera inventory and the latest digital inventory. Whether it's film or digital equipment, Panavision is still about the best possible service to the customer whether the project is a one day commercial or a six month feature."

Panavision is currently moving to modern purpose-designed premises next to Deluxe Australia in Lane Cove, giving their customers improved access to processing and post production facilities. The move also locates John Barry Group both north and south of Sydney Harbour.

Panavision will be opening its doors at their new location at Unit 1 706 Mowbray Road Lane Cove 2066 on Monday 16 November.

Panavision Australia has operated as a supplier to the film and television industry in Australia for over 30 years and played a vital role in its development and success.

Samuelson Film Service first opened in Australia as part of the Samuelson global operations to support local film makers and international productions shooting in Australia. After buying and merging with the John Barry Group in 1986, Samuelson Film Service also became the agent for Panavision and introduced Panavision equipment into Australia. In May 1997, Panavision purchased the Samuelson worldwide film group, forming Panavision Australia.

During these years, the company has extended its services into audio rental through the Audio Sound Centre, lighting rental with the formation of PANALUX, part of the world's largest lighting rental operation and digital camera rental by the acquisition of Broadcam in 2007.

Panavision has also kept pace with events and changes in Australia's filmmaking industry such as the ongoing transformation to digital acquisition and the move of post services from back end onto the set. "We were the first rental operation in the world to rent 24p cameras for the production of a feature, the Sony F900 to 'Star Wars: Episode II' in 2000, and the first to rent the Genesis, for 'Superman Returns' in 2005," said Managing Director Martin Cayzer. "We were the first to introduce the Phantom HD Gold HS camera and now have the largest range of digital equipment in Australia."

Apart from a large range of inventory, Panavision's technicians, engineers and marketing staff have contributed their experience, services and the company's global



WE COULD BE HEROES



'Mordy Koots' is a character driven comedy series made for digital broadcast. The 10 three-minute episodes combine realistic visual backgrounds and scenarios from Ubisoft's WW2 air force console games with live action performances shot on green screen.

The series' creators, Director Clayton Jacobson and Producer Jim Shomos based in Melbourne, have called their production technique 'movie over game integrated entertainment' or MOGIE, the process of filming live action performance and combining it with game play backgrounds.

GREEN SCREEN

While other projects feature animated characters within a game world, called machinima, a MOGIE sets real actors within the graphics of a game. The live action performances were shot against a green screen and composited with graphics from Ubisoft console games 'Heroes over Europe' and 'Blazing Angels'.

Clayton Jacobson described what happens on set with the camera crew. The performance footage is shot on Canon 5D



Director Clayton Jacobson doesn't find many barriers to scriptwriting in the MOGIE process. He needs to be aware of lighting and textures within the game to match performance footage.

cameras, which he says are fast and easy to use and cheap enough to warrant setting up three cameras for some scenes. In video mode, he finds the depth and quality they can record is almost film-like. The story is captured against green screen with minimal foreground props. The format of the Xbox background plates have no impact on how the foreground is recorded except that both run at 30 frames per second.

To make sure the action works with the available Ubisoft assets and props, a slightly different approach to storyboarding is required. "It's an interesting new world for me, because it can work both ways - I can record some background plates and match foreground action to it - or I can film foreground action any way I please and find the similar angle within the game later. The ease in which one can move in a 3D space on a game makes this relatively effortless. It's totally different to traditional effects work where everything needs to be very precise," Clayton said.

So far, he hasn't found many barriers to stories and scriptwriting with the MOGIE process. He needs to be aware of the lighting and textures of given scenes within the game in order to match performance footage but he pointed out that many games give you the ability to change time of day and lighting styles.

POST PRODUCTION

Once they have shot the foreground performances and elements, editing and compositing are the same as on any production. The camera's smart cards are downloaded onto hard drives and the footage is transcoded to ProRes 422 to edit in Final Cut Pro. To record background scenes from the games, the team plays 'Heroes Over Europe' and 'Blazing Angels' on an Xbox 360 with special code, provided by the



The MOGIE process involves shooting live action performances against a green screen and compositing them into graphics from Ubisoft console games. Backgrounds were recorded from an Xbox 360 coded to play scenes without text or HUDs, and to allow wider camera angles.

game publishers, allowing freedom of movement and camera angles within the game. The editors can also turn off the onscreen navigation text to render a more cinematic frame free of HUDs or text. The scenes are recorded in HD directly onto the hard drive on a MacPro and also edited in FCP.

The cut sequence is output into Shake and Adobe After Effects for compositing with the game footage and other graphics. "The two games we are using for background don't have many ground-based scenes, so we use stock stills with 3D modelling and computer generated interior hangers for those moments," Clayton said. Then the composite is brought back into FCP for final assembly and addition of the sound files, and final output to standard definition.

LIBERATING FILMMAKERS

"The beauty of this process is that unlike normal CGI, where everything needs to be carefully pre-planned and can't be changed without considerable cost and time delays, we can go back and record different footage from the game at any stage during the post-production period," said Clayton. "Matching the live footage to the various backgrounds is as much a matter of finding an onset look that compliments the gaming footage, as a matter of compositing backgrounds and foreground together, resulting in a happy balance. Also, 'Mordy Koots' is a spoof on the post-war films of Hollywood with a bit of 'Get Smart' thrown in for good measure, so there is a bit of work to be done in finding a look that fits that brief."

Clayton is excited to see what other filmmakers might do with this form of filmmaking. "We are making a comedy, but



any genre can be applied to this approach. My first text was made very effectively with a family video camera, an Xbox and a Final Cut Pro editing system. As games' on-screen graphics become more photo-real, I can see this style of filmmaking really taking off. It's an exciting and liberating time to be a filmmaker."

The series is available to download for free from 16 November. It stars Shane Jacobson from 'Kenny and 'Charlie & Boots' and follows the comical adventures and misadventures of Mordy Koots, an American WW2 air force pilot who fancies himself a hero. Each episode features guest appearances from film and TV stars. Launch events are scheduled for Sydney and Melbourne. www.mordykoots.com

WALKING WITH ALIENS

Trent Opaloch's first feature as DOP sent him to South Africa with nine RED ONE cameras and an army of Sony HDs to shoot 'District 9'. He talks about fitting into the RED workflow and working with Director Neill Blomkamp to develop a distinctive, handheld shooting style that matched the movie's daring script and harsh environment.

WORDS: ADRIENE HURST
Images courtesy of Sony Pictures Imageworks

Trent was slightly nervous about learning a new camera workflow just before starting on his first major feature, but excited and enthusiastic about it at the same time.

Trent Opaloch and Neill Blomkamp have collaborated for the last six or seven years on music videos, commercials and short films. Trent explained that they have developed a shorthand for working together that proved to be a great asset when tackling a large scale project like District 9.

"Neill can be very exacting in what he wants on certain things and then also very flexible and open to suggestion on others," said Trent. "Our process on 'District 9' was organic and, more than anything, was about making sure that what we were doing felt real and alive."

NEVER EASY

District 9 is not an easy film to watch. The settings are harsh, the subject matter is often brutal and the filming style

shifts rapidly from documentary to corporate video to wide open cinematic views. The footage reveals the characters under an unforgiving light, not as likeable people the audience can readily identify with. Although portions of the movie appear to have been recorded in a cold, random style better suited to a news broadcast than a movie, doing little more than capturing events, nothing was random about the choice of cameras.

The movie's main camera system was the RED ONE. The film crew had two cameras running most of the time and as many as nine on large stunts, and used three Sony EX-1 cameras for 'documentary' segments and corporate video-style shots made for the lead character's malevolent employer, MNU. "We had a Phantom for extreme high speed photography, a

couple of different Sony HD cameras in the Cineflex HD heli-mount for aerial footage, a FLIR for infrared and three small HF100s for things like surveillance cameras, in-vehicle dash cams and gun mounts. We tested a number of different systems and based our decisions on those test results," said Trent.

RED SUPPORT

"This was my first real experience shooting with the RED ONE system. I was a little nervous about learning a whole new camera and workflow just before my first big feature but very excited at the same time. We had Jonathan Smiles, the RED supervisor from the UK, working with our crew, and the team at Park Road Post nailing down our pipeline from Johannesburg to Wellington, NZ."

The crew was often shooting in hostile environments with punishing dust and wind and extreme temperature shifts throughout the day. Nevertheless, Trent and everyone involved were impressed with the camera's performance. "We did have some minor issues early on with viewfinders and onboard monitors," he said. "These were very early production versions, and the team at RED really put themselves out in their support. We baked curves into reference clips for each of the scenarios and sent those off with the footage to post. Overall, I was pleased with the experience.

SILVER LINING

Although the equipment posed a challenge for Trent, he was less daunted than might have been expected by 'District

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Leading a corporate video for his employer, 'District 9' protagonist Wikus van der Merwe interviews aliens inhabiting a shantytown. Trent recorded such scenes in a rougher, more haphazard style.

9's' story and script. "I was devastated like everyone else when the 'Halo' film collapsed," Trent said, regarding the stalled feature film project he and Blomkamp had been scheduled to work on together. "I'd been a huge fan of that world since the game's first release and was thrilled at the prospect of being involved in realising it as a feature.

"But to have an opportunity like 'District 9' come out of that and for Neill to have the creative control that he did, made the whole thing worthwhile and was really the best possible outcome from that situation. I think we all realised that we were in an extremely unique situation on 'District 9'. It's pretty hilarious to think of the whole thing starting off with Sharlto Copley, Neill and me driving around Soweto improvising scenarios in the back of a combi van."

DRAMA VS DOGO

At the start of the project, Trent and Neill tried to methodically plan how to record each shot to progress the story logically from beginning to end. "Our first approach was to push the film in two different directions so that the documentary stuff in the beginning felt rough and haphazard while the dramatic parts of the film were more refined and polished - more cinematic.

"The problem was that while this sounded good in theory, when we started shooting the dramatic portions of the film, they seemed like a completely different movie. At one point I was behind the camera feeling really terrible about what was happening and thinking that it just felt like a kind of lame 'Movie of the Week'. The funny thing is that Neill was back at the monitor thinking the exact same thing."

They got rid of the tracking base and dolly and shot the scene handheld. "It just instantly felt better, like the camera was immersed in the scene reacting with the actors rather than looking in through this 1.85 window. I'm quite happy with the transition throughout the movie because it seems to suck you in as a viewer. You start off with a single video camera, making a lame corporate video and end up in this extremely intense action film on a completely different scale before you realise what's going on."

GOING TO THE EDGE

Feeling almost like another character, albeit nameless and invisible, Trent described his MNU videography sequences as 'method-operating'. "You just sort of get into this character who is trying his best to make the best corporate video he can while the aliens are flinging crap at him. We did lots of filter

The Embassy VFX team coped with their first experience with RED footage for a feature film. Their main sequences required detailed compositing to combine this CG robotic armor with live action.

pops as the camera goes from a sunny exterior to a dark interior, snap zooms, focus mistakes, blown out highlights - everything that would normally be edited out of documentary footage. The dramatic portions of the film were photographed in a more traditional manner while still going for that live, reactive camera feel."

Thus, a number of shooting decisions ended up being made on set. "I think it's like most things where you go in with a plan and then adjust from there. Neill and Sharlto had a very free flowing process to arrive at the different story moments and it was very interesting and cool to watch that develop. My main responsibility was to be ready for whatever Sharlto was going to do and light the environments rather than what you'd normally do on a shot by shot basis. That's the only way you're going to have the flexibility to pull that type of filmmaking off."

WRAPPING UP

Trent estimates that about 90 per cent of the film is handheld. The crew used dollies, vehicle mounts, tripods and linear tracking bases at times, mostly for long lenses, but always held a loose, breathing frame to provide continuity across the scenes. "I think there is a time and place to use a camera in just about any way you can imagine, as long as it suits the subject matter. Aside from a few guilty pleasure moments like the gun cams and sweeping aerials, the camerawork in District 9 was about creating a head space for the viewer to buy everything they saw as being real."

Park Road Post Production finished the project including the Foley, ADR and sound mix in New Zealand. The team there has designed a proprietary RED workflow, and managed the footage from the grade to the deliverables, including a full digital intermediate. By the time the DI took place, Trent was back in Vancouver, not an ideal situation from his point of view, but also fairly typical. However, the main change he noticed after the DI was an overall lift in the blacks and brightness from what they had originally shot.

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A constant presence throughout the movie was the alien mother ship hanging in the sky over Johannesburg. These wide, steady cinematic views made a dramatic contrast to the up-close handheld shots.



PROS AND CONS

One of the effects companies working on this project was The Embassy in Vancouver. Their team had only worked with RED footage on commercials before. In terms of effects work, on the plus side were lack of grain in the footage and the speed with which they could generate plates. "The R3D RAW footage was great for getting 4K plates to work with – for zooming in, cropping the shots in more interesting ways or showing different aspects of a scene, without rescanning or losing quality," said Compositing Supervisor Stephen Pepper.

"A disadvantage was loss of dynamic range compared to film. You can only go a few stops under or over the recorded setting." Stephen thought he also noticed some compression artefacts in the footage but is not sure if this was simply an

issue with the particular camera used. "Rolling shutter effects created problems in several shots, but because the footage was handheld and full of movement anyway, we just learned to be more careful during compositing and tracking - to remove vehicles and other objects from the foreground, for example - usually making at least a 4-point or warp track." Their tracking was done with SynthEyes from Andersson Technologies.

EFFECTS PIPELINE

The Embassy's principle job was to key-frame animate, render and composite a massive piece of alien weaponry, a mechanized suit of armour controlled by its wearer, aiming for seamless integration into the film's climactic battle sequence. The sequence the team were working with was shot mainly with handheld RED cameras. They tracked and dropped the robot-like 'exo-suit' into the plates and used HDR lighting to match the hues on set. The CG in the scene was animated and rendered in Autodesk Softimage and composited using Shake.

The focus on action, involving a lot of interaction between the CG armour, the actors and the props made it a complex sequence to composite. "There were soldiers shooting, and each shot has composited bullet hits, dust on the ground for the suit's feet movement, and smoke added into the environment on top of the hero CG," said Winston Helgason, VFX artist and co-founder at The Embassy. He had gone over to supervise the sequence shoot in a Soweto shantytown.

They had previously worked with 35mm film for their feature film projects, which was reflected in their pipeline. They had been using Softimage XSI since getting to like it for 'Iron Man' and various commercials, and were able to continue using it for this movie. modo was added for modelling and rendering tools, with mental images mental ray. The surfacing and texture painting was done in Zbrush and modo, and compositing in Apple Shake, as mentioned.

Genarts Sapphire plug-ins were added for some effects. LensFlare was applied to enhance some of the muzzle flashes from alien weapons. EdgeFlash helped integrate CG robots into the background plates by creating a light spill of the separate elements to blend them together. Sapphire JpegDamage was applied to certain CG elements to match the digital compression on the plates, created by the Sony EX-1s, and Glints and Glows imitated sunlight flashing off the suit of armour.

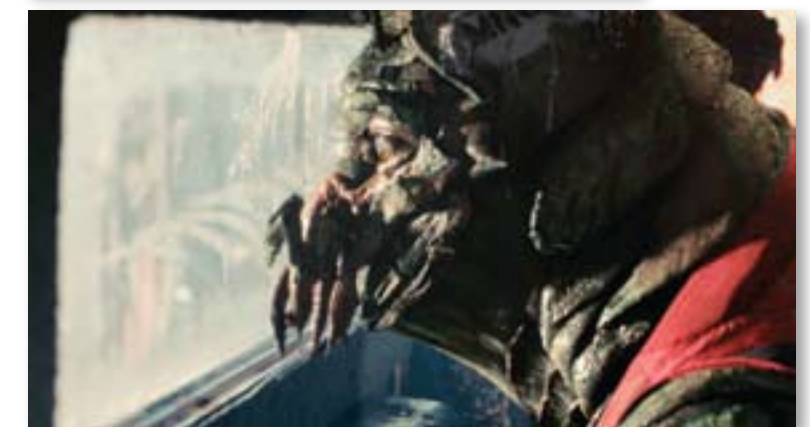
COLLABORATION

Incidentally, this project had a strong element of collaboration with WETA Digital and Image Engine, which The Embassy hadn't had to deal with to such an extent before. It worked out a bit better than they anticipated. They decided early in the project which team would final each shot, based on whose work was more significant in each one. In other words, The Embassy was able to follow through on their own work to completion. There were a few scheduling issues – WETA were over in NZ while Image Engine and The Embassy were neighbours in Vancouver - so they often worked at different times but the cooperation was a success.

Some of their work involved models that WETA had already created, while some of it involved ground-up modelling. They used modo for UV setup and organising some UVs they had been supplied. In the battle scene, smoke and dust were important features and were nearly all real elements, shot specifically for the movie on RED or borrowed from The Embassy's shot library. The shantytown shoot location was extremely dusty, and the few instances of CG smoke or dust were created, again, with XSI. modo was used to set up shaders and occlusion maps that helped simulate gritty, dust effects on parts of the exo-suit. They built some simple shaders and test-rendered it before moving it over to XSI.

One reason that the Embassy particularly enjoyed getting involved on this movie was the chance to work again with Neill Blomkamp, who had contributed to The Embassy in its early days. As a VFX person himself, he had few problems defining and explaining what he wanted from the team and how he thought a scene or effect should look and work. 🎬

Following the protagonist through his desperate days as a fugitive, Trent took advantage of the production's handheld cameras to capture sequences with an edgy shooting style and a lot of movement.



MPC: FROM BABIES TO BOOT CAMP

WORDS: ADRIENE HURST

The Moving Picture Company post production studio in London has recently created some astonishing digital visual effects and animation for ‘GI Joe: Rise of the Cobra’ and a multi-national ad campaign for Evian, ‘Skating Babies’. Backing up their efforts is a research and development team devoted to proprietary software and CG innovation.

The studio provided key sequences for Stephen Sommers’ ‘GI Joe: Rise of the Cobra.’ Working with overall Supervisor Boyd Shermis and VFX supervisor Greg McMurry, VFX Supervisor Greg Butler led the team at MPC to complete 176 shots that included green screen replacements to window shots overlooking CG environments and underwater battles and a seven minute, completely CG underwater action sequence. The project ran from August 2008 to July 2009. The MPC crew totalled just over 100 artists, with most on board in January to finalise asset builds and ramp up shot production.

GI JOE: DESIGN INTENSIVE

“Half of MPC’s ‘GI Joe’ work and by far the most complicated was the underwater, full CG sequence. We had 70 to 80 shots with very little real, live action plates in them, just a couple of inserts,” said Greg Butler. “Whenever your work approaches full CG, the number of things you need to develop concept for and design is endless. Although I had supervised a handful of full CG shots on previous films, this was my first experience with such a high number of shots that were entirely created in the computer.”

When MPC started on GI Joe, shooting was just wrapping up. The Art Department was nearly closed. As MPC started production, the Department handed over whatever they had designed, such as a few early designs for the Sharks and Mantis

fighter craft. For the MARS Cobra base and its underwater environment, all they had was a mood and general style. A lot of its detail still had to be worked out - the actual number of structures, the scope, and the rocks it was based in – and formed their most design-and-build intensive task. The main base was a series of roundish pods laid out in the front, and towers and other structures emerging from that.

After reviewing the previs turned over to them, Greg and the team realised that they would need a 3D build of the whole structure. The action was going to take place all around the base at various distances and deep within it. “I decided to go for a full 3D build at a resolution that would hold up for a majority of the shots we anticipated. According to the show schedule, by the time we had most of our animation approved, and therefore most cameras locked, the build would have to be ready for rendering. If we could have delayed the build process a few months, we could have gotten away with some sections of the build at a much lower resolution,” he said.

ASSET DEVELOPMENT

“A few shots that got very close to the base had additional projected matte painting work done to increase the resolution. The rocky terrain surrounding the base structures was modelled, but the shading and texturing was done using a

series of matte painted projections. All the work was done in our standard asset and environment pipeline, which is Maya and Renderman based.”

They spent three to four months in the asset department on designing, modelling, texturing, look development and lighting tests. “One of the toughest challenges on GI Joe was getting all of the assets designed and built to a high level of detail early enough so that we still had enough time left to light, render and comp the shots. We also had a huge number of FX simulations to run, since every underwater shot required multiple FX elements and these could only be produced once the animation was approved.”

UNDERWATER ENVIRONMENT

A major creative and R&D hurdle was establishing a believable underwater environment – specifically, what would happen to light, visibility, and to objects floating around to give a sense of volume? They started investigating as much real, scientific reference material as possible on light travelling through water and how the colour and value of light fall off or degrade as distance increases from a light source. They had to consider a number of factors.

For example, if the light source is above the water, as it shines down into the water it rapidly loses red values and intensity. By the time an amount of water lies between you and the source, very little light may be left. At the same time, for the camera watching, any light shining down on an object will lose colour and value as it bounces off the object and comes toward the camera. Combining these factors gave them

a complex shading algorithm that would determine - given the distance of the light to the object in one direction, and to the camera in another direction - what would be left in terms of colour and value.

EPIC BATTLES

“Director Stephen Sommers really wanted epic battles in this movie. He wanted to see 20 to 30 Sharks attacking a force of 30 to 40 Mantis craft, with explosions accompanying them and the base included in-frame,” said Greg. ‘Star Wars’ and ‘Thunderball’ were both key references for the climactic underwater battle sequence. The problem lay in incorporating what worked about both films into the same battle.

“‘Thunderball’ has great shots of scuba divers in hand to hand combat with constant streams of air bubbles reminding the audience of the role that water itself plays in the building sense of threat and violence. The ‘Star Wars’ films are an archetype of epic battles between large numbers of futuristic craft intercut with close-ups actors to keep the audience emotionally connected. These two ideas don’t go together easily due to the difference in scales and the lack of visibility in real-life underwater photography.

“For example, we had some shots of 60 foot long Sharks attacking the Cobra base, as seen from a camera placed a mile away. Just being able to see the ships attacking was a very big cheat of underwater lighting and visibility. Given that the clearest water anywhere only gives about 0.5km of good visibility, realistic underwater lighting wasn’t going to be an option.”

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ABOVE: During the 1980s, the original Hasbro toy series included Shark and Mantis fighter craft, which influenced MPC's designs.

BELOW: For the fluid dynamics involved in creating the water surfaces seen in the interior docking bay shots, the team used Scanline's Flowline software.

NEW TOOLS

So, their R&D effort into the fall-off of light in water had to be redirected. Instead of rendering with all those constraints in place and facing the difficulty of controlling visibility, they stripped the procedure back, and used that lighting component during compositing, letting the compositors pull elements back into the depth of water. "So, in the end, that work really just gave us a scientifically-based tool to treat the level of visibility completely artistically.

"A couple of other new tools the R&D team created were a curl noise field that effects artists could use to affect particles and objects without the higher cost of a full fluid dynamics simulation, an adaptive method for fast rendering of volumetric shadows, which we presented at SIGGRAPH 2009, and a RenderMan shader to attenuate a light's colour and intensity within a virtual water volume."

UNDERWATER EXPLOSIONS

Another issue for the team was the need to produce some dazzling 'eye candy'. The battles gave them the opportunity to work on explosions underwater, where immense pressure creates a classic explosion-implosion followed by a slight drift. All the film references they looked at showed practical-based, real explosions in tanks, all at a smaller scale than the event they were depicting was meant to be. However, shooting even a miniature explosion underwater is very dangerous, and the

cost and resources required to stage explosions across 100 shots necessitated CG from the start.

"For fluid dynamics work, we tended to use three methods. For underwater explosions and water surfaces, seen in a handful of interior 'docking bay' shots, we used Scanline's Flowline software. For large air releases we used Maya's fluid solver. For most other cases, such as bubble trails, we drove particles with various fields in Maya. Flowline worked very well for underwater explosions. It has a fast simulation engine that could be manipulated to give a sense of external forces pushing against the explosion. It was also able to simulate a good transition from fire to smoke."

They did some initial tests with Flowline, telling the software to cause a mass of water to explode out and then 'fake' gravity, not going up or down but just moving in a kind of vacuum. Some of their early tests were very successful. They developed those and combined custom Flowline explosions – when they had a specific contact such as the side of the sub blowing out and needed to create the collision across the surface as a critical moment - with general battle scene explosions, for which they built a series of pre-rendered explosions from different angles that the compositors could drop in as required and track through. They were able to put many high-cost simulations into several shots just through a simple card approach.

ANIMATING THE SUBS

The main underwater craft built for the film was the 'GI Joe' sub, a 900-foot classically styled submarine with a launching bay at the back for 48 Sharks, the smaller fighter craft engaged in most of the battle shots. On the MARS side, the villains, the sleek, modern, stretched-out Yacht and the Mantis attack craft all represented significant design work. MPC did have some starting designs for all but the 'Joe' sub. During the 1980s, the original Hasbro toy series included Shark and Mantis fighter craft, which influenced MPC's designs.

Animation Lead Julio del Rio Hernandez worked on animating the subs to look fast and dynamic, but have a certain mass and weight at the same time. They are very large vehicles and couldn't look like toys or small cars. As they began to seek references, the animators soon realised that aircraft engaged in jet fights and dog fights made more appropriate refs, because their movements better resembled the way their subs needed to move.

SHOT LIBRARY

Their most challenging shot, one in which 25 smaller Shark fighter subs deployed from the main sub, presented a series of timing and compositing problems. First, as the main sub moved forward through space, the rig where the Sharks were gathered was rotating. Then the Sharks had to deploy into a very small space, following a pattern. The lead of the subs needed to be at a certain point at a certain time in the camera, so that the animators could blend the CG subs with the live action plate. Right after that moment, they had to blend again into the CG sub and reveal the huge Cobra base in the background.

The team built up an extensive library of flying cycles and fighting cycles, which they could use to complete several shots. For example, sequences taking place in the interior of the base that needed to show battles going on outside through the windows could be shot with green screen windows, and the library shots dropped in.

EVIAN'S SKATING BABIES

'Skating Babies', a multi-national TV and online campaign for Evian, combined choreographed, roller-skating babies with music of The Sugar Hill Gang's 'Rapper's Delight'. After Director Michael Gracey FROM Shots.net initially described the project, MPC decided they would have to recreate a 3D baby in post-production, animated either with motion-capture or with the in-house animation skills at MPC. The team created CG baby bodies in Maya and carried out live action head replacement and compositing.

As a test, they filmed a baby on green screen performing the actions Gracey had specified – first bouncing down and doing the splits, and bouncing back up again. Next, they filmed a professional skater doing essentially the same moves, but performing while watching the film of the baby and trying to emulate the baby's arm and leg movements.

TEST SHOT

These actions gave the VFX Supervisor Dean Robinson some actions with which to connect the two images and form an amalgamation replicating the actions of both. The resulting wireframe baby's body was tracked into their background shot, textured and lit. The live-action head was tracked in, and the figure was graded and given shadows. This test shot was shown to the agency and eventually won the job for MPC.



ABOVE: In order make the babies move like experts, MPC's animators spent a whole day at a motion capture studio filming skaters and collecting as many different actions as they could. This footage was then applied to the rigs.

CREATING SUPER TOOLS

For many projects, MPC's VFX team integrate 'off the shelf' tools into their pipeline. But in a field that is constantly changing, projects arise when they need to achieve specific goals. They now have a group of software developers and computer graphics specialists who have developed several in house proprietary tools.

ALICE, Artificial Life Crowd Engineering, is a tool-set designed for positioning and choreographing crowds, from a handful of characters to a disciplined army or swarming aliens. First developed for the crowds in Wolfgang Petersen's 'Troy', ALICE was further developed for 'The Chronicles of Narnia: Prince Caspian', where it was used to populate wide shots and backgrounds with creatures, placing and animating characters up into the foreground. Motion capture, keyframe animation and physics simulation can be used interchangeably as inputs, while it also allows individual ALICE agents to receive attention to fine detail.

PAPI, the 'Physics API' based on Havok, helps in scenes involving falling, colliding and constrained rigid bodies. Initially a scripting tool developed for 'Troy' and 'Kingdom of Heaven', a user interface has since been added to make simulations faster, while complex scenarios including breaking and shattering objects can be controlled by setting up 'events'.

Furtility is a surface dressing tool, primarily for creating photorealistic fur and hair for CG characters, but also feathers and grass. Combined with MPC's in house hair simulation software, artists have better control over fur movement and interactions including stiffness, weight and external and environmental effects such as wind, rain and movement. It created woolly mammoths for '10,000 BC' and characters in 'Narnia: Prince Caspian'.

ISIS comprises software for digital set reconstruction. A series of 2D still photos of a building can be built into a full 3D model. The results can be seen in set extensions for 'Sweeney Todd'. www.moving-picture.com

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During previs, Dean and the VFX team started with storyboards showing all the shots that would be required. They carefully considered the number and kind of camera moves and the number of babies they would need. They laid out the shots with the 3D team, and carried out a basic 3D previs for each shot to get an idea of the speed, what kind of animation would work and the framing. Dean said that just by looking at the boards alone, you can never tell how a shot will look with the camera moves until you lay it out.

MOTION CAPTURE

As well, to be able to properly shoot the empty backplates and lighting references at the correct angles they needed to know exactly what was going to happen in the shots they were planning to capture. Therefore, an accurate previs was essential. At the shoot, carried out at a park in Melbourne, they also took reference for some large scale digital matte paintings to enhance the background and re-create the city environment. Meanwhile, 134 babies' heads were also filmed on green screen.

The job would mostly involve hand-animated scenes but a certain amount of motion capture would also be required, especially for the babies in the background. At Centroid at Pinewood Studios, they spent a whole day filming skaters and collecting as many different actions as they could. The motion capture footage was then applied to the rigs and used to animate the babies.

MATCHING MOVES

The next stage was adding in the babies' heads they had collected, using them as cutouts



with the mo-cap skeletons. They tried to make their animations fit and work realistically with the heads, and match movements paying special attention to interaction between the shoulders, neck and head. Once the full CG babies were created, the compositing team led by Ludo Fealy replaced their heads with the live action versions. Creating the babies in full made sure the newly positioned heads would follow the shoulder movement naturally. This also helped during the lighting stage, as shadows of the heads could be easily projected.

Realism was a constant challenge. People know instinctively how babies should look. Skin in particular was hard to recreate. They had many reference photos for the babies' shapes but skin was more elusive. Eventually they used subsurface scattering, creating several layers. Displacement maps from ZBrush were used to create the lumps and bumps over the babies' bodies that gave each one a distinctive shape.

ABOVE: At the shoot in Melbourne, the team took reference for large-scale digital matte paintings to re-create the city park environment. **BELOW:** Realistic babies' skin was a challenge. Subsurface scattering was used, creating several layers.



Supervising Technical Director Desmond Chan was responsible for developing effects, characters and environments in 'Astro Boy', Imagi's second feature film. Thanks to him and his team, 'Astro Boy' has returned, ready to conquer new fans in the 21st century.

The Imagi team has devoted two full years to this project, which Desmond joined in its earliest stage, during story development and design. handled the project's technical problems and served as project manager, monitoring scheduling and budget. Much of his team's research and development focused on the two main characters, Astro Boy himself and a huge, fantastical, brand new character called Peacekeeper, and the two main environments, Metro City and Scorpio.

The movie comprises about 1,700 shots. Imagi worked on concept designs, some of them drawn by hand, and storyboarding in Photoshop. About 400 people have worked on it in total, most of them located at Imagi's main Hong Kong studio, plus some at their smaller Los Angeles location.

MODERN REALITY BITES

The studio runs a Maya-based pipeline, which includes a growing number of proprietary tools also based on Maya, with mental ray for rendering. The R&D team involves 20 to 30 people. Tools development began in earnest on the company's first feature film 'Teenage Mutant Ninja Turtles', but Astro Boy required its own research. As soon as they read the script they were aware of how much they would have to achieve in terms of effects, character design and tools development. One reason the team likes working with Maya is that it lends itself to tool development.

Imagi used the original 'Astro Boy' artwork as their principle reference and tried to maintain as much of its looks and spirit as they could. Nevertheless, they inevitably had to make certain changes to suit the 3D environment and 21st century viewers, and take advantage of the modern tool set. The new designs were shown to the estate representing the creator Tezuka Osamu, to confirm that they hadn't deviated substantially from the original concept.

The most noticeable change for 'Astro Boy' fans will be his age. He has grown up from a little three or four-year-old to a young boy of 10 or 11. Consequently, he had to be depicted wearing a few different outfits during the movie, not just his trademark flying suit and red boots. Desmond said, "The shift to 3D animation also necessitated the addition of teeth to all the characters. In the original 2D drawings, teeth were distracting but on a movie screen, characters without teeth are not convincing."

Astro Boy's flying technique has become more sophisticated as well, evident in elegant, balletic flight sequences. Some of the flying actions have actually been inspired by swimming references, instead of flight. Sophistication has also been added to elements such as the rockets in his arms, which now involve carefully designed inner parts.

PEACEKEEPER

Another major change to the story is Peacekeeper, an entirely new kind of character. The Peacekeeper is colossal in size and complexity, comprising several independently moving parts. The robot character absorbs objects such as buildings and machinery, and incorporates them as parts of its body.



ABOVE & BELOW: Astro Boy is no longer the original little boy character with no more than short pants and red boots to fly around in. He is 10 or 11 years old with several outfits, a full set of teeth and a graceful flying style.



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ANIMATION



ABOVE & BELOW: Most of the story takes place in Metro City, based on simple polygons given asymmetrical shapes to add interest to the cityscape. Different patterns were applied for detail.

A REAL LIVE BOY

Director David Bowers was an animator for many years, most recently from Aardman and Dreamworks projects such as 'Wallace and Gromit: Curse of the Were-Rabbit', and directed 'Flushed Away'. He says one of his first movie-character infatuations was Pinocchio, who also has issues about being a real boy. Aware of the risk of giving 'Astro Boy' a slick, pop style, what David wanted most was to combine action and adventure with comedy and genuine emotions, and also felt compelled to respect the character's historic value and meaning for its original fans.

"I want it to serve as an introduction to 'Astro Boy' for western audiences while remaining faithful to the lore for Asian audiences," said David. Because Astro Boy remains a treasured identity in Japan, he worked closely with the estate of Tezuka Osamu, the pioneering master of manga who created Astro Boy in 1952, to ensure he got everything right.



Each part was designed separately, and a full set of controls was built for each using Maya. New tools were developed specifically to design this character, generate its textures and to differentiate its absorption ability from deformation. "The absorption effect used is a proprietary tool to generate texture sequences and apply it as a PRman displacement shader. We have five different texture layers, which are used to create deformation and colour blending," Desmond said.

Every character was subjected to spin tests, to make sure of its appearance from every angle, and motion tests to help the animators get used to the character and his or her expressive facial controls.

POLYGON ENVIRONMENTS

Most of the 'Astro Boy' story takes place in Metro City, Imagi's main set. The concept design was based on simple polygons, but these were given asymmetrical shapes to make the cityscape visually more interesting. Two types of patterns were applied over the city and other environments – a larger, defined style, and a finer, more subtle type for special areas. The other major setting for the action, a giant robot junk yard called Scorpio, illustrates a method Imagi developed to add patterns.

Scorpio is full of pieces of machinery, piled up and strewn over the ground. Maya was used to generate their individual shapes in the foreground as 'object instances', while in the background, a particle procedure was developed to generate the pieces more rapidly as 'particle instances'. The particle instance procedure results in smaller files that are easier to preview and handle. To make the instance files, they started with original hi-res geometry of an object to create a basic unit that could be duplicated for the whole environment, then broke them down into instance files for rendering and then composited them together.

Overall, the environments were kept deliberately simple, composed of basic polygons, in order to highlight the animation and make it easier for the animators to do their work.

TREE AND CLOUD SYSTEMS

Special effects developed for 'Astro Boy' included a tree system tool developed with Maya, based on a simple leaf design that generates distinctive looking trees. Its user interface is virtually the same as Maya Paint effects but it allows objects to have multiple labels and gives better shape control. It supports a procedural shader for different resolutions and surfaces, and supports Renderman to speed up rendering.



Another effect for cloud motion was based on Maya fluids, but uses Imagi's design for interactive motion between characters and clouds, and characters passing through clouds. The resulting procedure should be started when the environment is still rough and simple, Desmond explained. "The artist completes the character animation first, then adds the cloud effect and then completes the environment. We tested various looks and shapes for clouds. One difficulty is that Maya requires a container for fluids to have shapes. The developers wrote a tool to use simple geometry to represent container and gave them enough control to shape the clouds."

Desmond described some of Imagi's future projects. An animated feature called 'Gatchaman', based on the anime franchise, is expected in 2011 and has a more realistic look than 'Astro Boy'. Imagi has just released a trailer for another feature project, 'T28', whose human characters also look quite realistic with finer detail. No games have been planned so far. Most of their activity is located in Hong Kong, staffed by local people, while the smaller LA studio has a team from many origins. www.imagi.com.hk



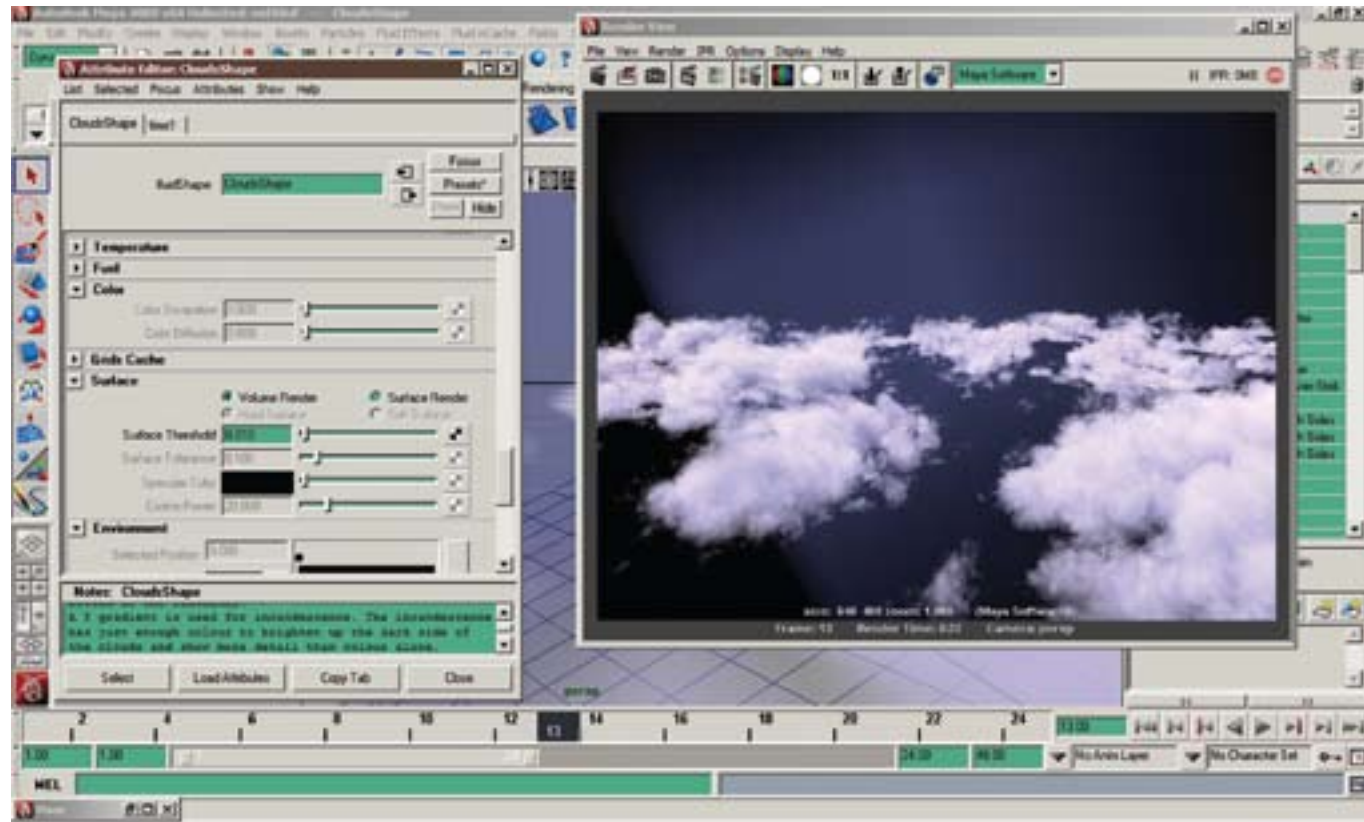
ABOVE: Imagi is planning future feature projects such as 'T28', shown in these concept sketches, in which characters and environments have a more realistic look.



MAIN PHOTO, TOP: Imagi developed their own tools to design and texture the new robot character, Peacekeeper. LEFT: Astro Boy has not only grown older; elements such as the rockets in his arms have also become more sophisticated.

MAYA FLUIDS: CLOUDS AND GASES

REVIEW BY: ALLAN MCKAY, AMCKAY@ALLANMCKAY.COM



A key issue with Maya Fluids, as with any fluid solver, is that its complexity can make running simulations very slow. Long rendering times may slow down experimenting with effects.

This article continues our review of commercially available options for creating fluid effects. This month, Allan McKay investigates Maya's Navier-Stokes Fluids solver, which ships with Maya Unlimited and stands out as a capable and production tested system for simulating smoke, explosions, fire, clouds and various other more gaseous atmospherics.

In terms of its interface, Maya Fluids has literally over a thousand features, which make it a bit daunting at first, especially for those not familiar with fluids terminology, but the more you use it and become familiar with its workflow and terms, the more sense it will make. One of the key issues, as with any fluid solver, is that due to its complexity, running simulations can be very slow. Clicking buttons and playing around to see results can quickly become painful.

2D CONTAINERS

A great feature to resolve this issue is Maya Fluid's optional 2D containers. Rather than a straight 3D container, a 2D solver is one voxel deep, making it almost real-time. This means you can test out ideas and get a feel for the settings in 2D with much quicker feedback. Switching it over to 3D, the transition isn't entirely accurate between the two, but it does make for a solid, useful feature.

To explain more about how this all works, the core concept behind Maya Fluids, just like most fluids solvers, is that you have a finite amount of room to work in. Your workspace is called a container and this container, in which you build your emitter and set your attributes, controls the effect you're creating inside of it. All of the standard features are there, such as emitting from objects and from maps, voxel/grid resolution to control how much detail and calculation time is put into your simulation, and features such as Fuel, Temperature and dozens of gradients to control how everything interacts and renders.

Even for more experienced users, the interface and number of controls can sometimes be a bit tedious. While it is great to have all the extra control, it can sometimes get in the way. However, Maya's Fluids real power comes from its flexibility and control. As with most areas of Maya, getting under the hood and building clever expressions and expanding on its basics concepts is what really makes Maya stand out over many other packages. By building custom emitter attributes

and building the RayMarcher shader around your own rules, you can get very specific looks that may be exactly what you are after.

OCEAN FLUIDS

One core feature of Maya Fluids that is completely outside the standard gaseous category is Maya's Ocean Fluids. This is part of the Fluids feature, but entirely in its own element. It works a similar way, using a container and similar interface but it revolves more around octaves and a totally different type of solver for building ocean surfaces. The Ocean shader is also quite flexible and useful, with foam generation and various other features. Although it is beginning to be outdated by some of today's ocean technology - most of the really interesting software studios are using now is primarily developed in-house - Maya Fluids is still a very flexible tool and heavily used for production.

On the down side are slow simulation and rendering times, which make it difficult to experiment with your effects because you have to wait a long time to see results, as already mentioned. But the RayMarcher shader for rendering volumetrics is a huge step up on its previous software shader solution to volumetrics, and especially on Digital Nature Tools, which in 2002 and earlier was the standard solution for rendering clouds and volumetric smoke if you didn't have access to PRMan for a better solution. Once you build your fluid simulation you can use it as an instanced shader for your particles, meaning you can attach fluid shaders to particles for even more flexibility, which is useful in some cases, but rendering is still slow compared to most other packages out there. Tweaking rendering settings is a must if you want to get production quality and any decent render times.

ANIMATING PARTICLES

Some key features that are used quite a lot include utilizing the solvers vector information to drive particles - imagine creating your fluid simulation and then allowing particles to be animated by your fluids. This can be really useful to get more intuitive motion from your particles and its interaction with objects. It's also useful and common to create a fluid simulation, drive your particles through it, and then run a fluid simulation over that. This way you're able to get the best of both worlds - fluids driven by particles that initially have more fluid motion.

You also have the option of outputting your fluids as geometry, useful in rare cases. As with most of Maya, it's better to have all the options and not need them, than to need something and not have it. There are examples floating around youTube, and even with Maya, of using fluids to act

as water, but these are mostly unsuccessful and you're far better off turning to a proper liquid based fluid solver like Real Flow or Glu3d for realistic results.

DRAW-AND-DROP PRESETS

To help get a better understanding of how Fluids work and how to change the looks drastically to match what you're after, Maya comes with loads of presets located inside Maya's Visor. This is a great feature rather than example scenes, as you can literally drag and drop them into your scene and play with them. It also means that if you need fire or clouds for a scene, you can gain access to them right away and begin to change them however you like. This will be useful for a lot of broadcast and TVC people who don't necessarily have time to build effects from scratch.

Maya also has fluids nCache, a segmented off manager for swapping out and controlling fluids caches more easily. Obviously you'll be caching your simulations fairly regularly, as otherwise a lot of time will go to waste simulating.

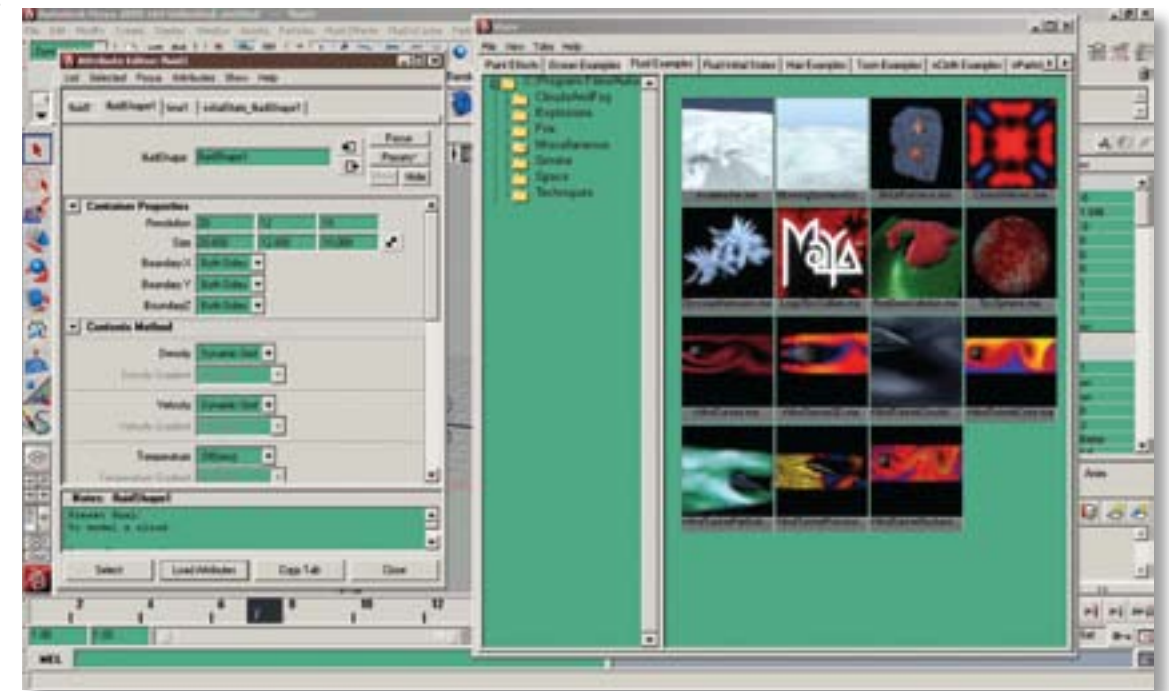
Incidentally, you might recognise Maya fluids applied elsewhere. If you're using an Apple iphone and do a search for Autodesk Fluid, you will come across a very optimised version of the same solver used in real time. This app is completely interactive and allows you to use your fingers to draw fluids and then tilt your phone, rolling the container so the fluids fall downward along whatever angle the phone is tilted.

To summarize, Maya Fluids is still quite a capable package - although not available unless you're sporting Maya Unlimited, as with a few of the more extravagant features of Maya. This still holds up really well considering the six years it has been around. Just be aware of its simulation and rendering times, and slightly overwhelming interface. After that, you should be good as gold!

References & Resources:

Autodesk - www.autodesk.com

HighEnd3D - www.highend3d.com



The software comes with lots of presets located inside Maya's Visor instead of example scenes, which you can drag and drop into your scene to play with.

Vegas Pro 9 in Boxx

Boxx Technologies has entered a partnership with Sony Creative Software to provide workstation platforms to Vegas Pro 9 users. They will include technical support for video and audio editing workflows, aiming to extend more flexible configurations and high-performance storage, memory and CPU options.

Vegas Pro 9 software supports 64-bit workflows and provides native compatibility with motion media file formats, including AVCHD, XDCAM, XDCAM EX, and RED. It also accommodates various project types including 24p, HD, 2K, and 4K, with precise video editing, compositing and FX tools. Audio sweetening and post toolsets support 24 bit/192 kHz audio and 5.1 surround mixing. Movies may be burned directly from the timeline to Blu-ray Disc.

Boxx platforms available for Vegas Pro 9 include 3DBoxx 4850 Extreme, an Intel Core i7-based workstation, 3DBoxx 8500 with 16 virtual cores suitable for video editing, VFX compositing, and DI workflows, and the GoBoxx mobile workstation supporting multiple, simultaneous streams of compressed or uncompressed motion media for online finishing of video editing and motion graphics projects.

Boxx Solutions has also announced that Boxx workstations will be available with the new Microsoft Windows 7 operating system. Featuring multiple improvements suggested by actual users, Windows 7 directly benefits digital artists who rely on professional applications.



Windows 7 is compatible with a number of existing 2D/3D and motion graphics design applications and hardware, and supports the performance features found in Boxx workstations. Memory management coordinates with multitasking capabilities and system interactivity when working with large scenes, projects and data sets, and thread management supports work with multiple, simultaneous scenes and files. File search and launch functionality allow users to locate and open files and projects across local network and 3DBoxx storage locations, and new functionality for storage may help maintain health and performance of SSD hard drives.

Windows 7 will be available with all Boxx workstations, including the 3DBoxx 4850 Extreme, 3DBoxx 8500 and GoBoxx. www.bboxtech.com

Lensbaby Swaps into Fisheye and Soft Focus



Lensbaby is a lens company based in the USA manufacturing the Lensbaby Optic Swap Systems that works on almost all versions of SLR cameras that have interchangeable lenses. Their website lists makes and models with which the Lensbaby will work, including Canon, Nikon, Sony and others, though it will not work on point-and-shoot cameras.

The systems now feature six interchangeable optics that can be swapped in and out of the three versions, the Muse, the Composer and the Control Freak. Each optic creates a different type of creative image. The Double Glass, Single Glass and Plastic Optics have a curved field of focus that allows the photographer to control depth of field in a unique way by creating a Sweet Spot of sharp focus, surrounded by blue. The other 3 optic options, Fisheye, Soft Focus, and Pinhole/Zone plate all feature a flat field of focus and create distinctive looks.

The Fisheye Optic is a new option used with the Composer swap system with a wide 12mm focal length capturing a fisheye view from infinity down to 2.5cm away. The black edge typical for standard fisheye lenses will be visible, but the Lensbaby Fisheye Optic has a lens flare effect that causes the edge areas that would ordinarily be black to glow with colour

whenever there are bright light sources in the image. This lens flare effect is particularly apparent when shooting with a full-frame camera.

The Fisheye Optic features a system of interchangeable aperture disks, with possible aperture settings ranging from f/4 to f/22. At f/4 the edges of the images will be soft. Stopping down to smaller apertures will increase edge sharpness. At f/22 the entire image will be quite sharp.

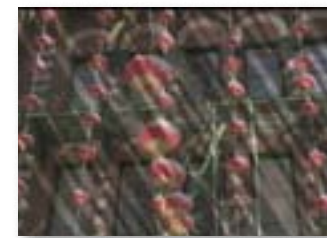
The Fisheye Optic has a flatter field of focus than previous Lensbaby Optics and images created are sharp throughout the image at darker apertures. At brighter apertures there is some softening at the edges but not the Sweet Spot of sharp focus and dramatic blur that are trademarks of the Double Glass, Single Glass and Plastic Optics. Instead of bending the lens, photographers can point their Lensbaby straight ahead to achieve a classic fisheye look.

The Soft Focus Optic turns the Lensbaby SLR lens into a soft focus lens for images that are overall soft and diffuse. It creates images that are overall soft and diffuse > suited for portrait, landscape, urban, and botanical photography

Degree of softness can be controlled by changing the special apertures, or stacking them with regular Lensbaby aperture disks to suit the subject and its interpretation. With the soft focus multi-hole apertures, bright, out-of-focus points of light take on the hole pattern's shape, creating looks in-camera and not only emulated in a digital imaging program. This hole pattern creates a sharp underlying image with a soft overlay particularly noticeable on a low-contrast background.

A range of apertures from f/2 to f/22 using a magnetic disk aperture system modifies the soft focus effects, and also allows a wide range of lighting conditions and variations in shutter speed for subject motion effects such as frozen motion or blurred action. www.lensbaby.com.au www.maxwell.com.au

STOREK STUDIO NVEIL FOR FXFACTORY



Noise Industries and development partner Storek Studio have released an update to the nVeil video plug-in for the FxFactory platform. nVeil creates distinctive kaleidoscopic visual effects by filtering source imagery through

vector graphic veils. nVeil's library contains custom-designed veils and keyframeable parameters and may be customised. FxFactory powered plug-ins can extend the visual effects capabilities of Adobe After Effects CS3 / CS4, and Apple Final Cut Studio, Motion and Final Cut Express applications.

Storek Studio's engineers have used the FxFactory engine to develop an application creating stylised video effects. The new nVeil features are a workflow in which users can browse through and choose from over 60 built-in veils directly from the plug-in interface and anti-aliasing capabilities for higher-quality rendering. Transitions have been added to create veils across two clips, and additional presets allow users to view results more rapidly. Scaling, user interface and projection modes have also been upgraded.

nVeil is available from the Noise Industries www.noiseindustries.com and nVeil www.nveil.com websites. Previous nVeil users can upgrade for free to the new FxFactory based version of nVeil.

mental images Releases iray Renderer

mental images has just introduced iray, a GPU accelerated, commercially supported renderer solution for 3D graphics application developers. iray technology which uses NVIDIA GPUs to deliver faster results to designers, engineers and consumers producing photorealistic imagery.

Through the iray application designers simulate their project using materials and lighting that relate directly to their physical counterparts. According to mental images, it is scalable, interactive and physically accurate.

iray progressively refines an image to increase the level of detail through a combination of interactive pre-visualisation and final frame rendering, using only a limited range of intuitive settings.

iray rendering technology will be included with the mental ray 3.8 rendering software starting in late November 2009 at no extra cost to existing customers and OEMs under maintenance. A future iray Integrator Edition will allow independent software vendors to include iray technology within their own products. Future integration with the NVIDIA SceniX scene management engine is expected to make iray accessible to SceniX-based applications. www.mentalimages.com/iray. www.nvidia.com.



Maxwell Render Lights Up New Release

Next Limit Technologies has issued version 2 of Maxwell Render. A physically correct, unbiased rendering engine, it can simulate light as it behaves in the real world and capture light interactions between elements in a scene.

It combines a rendering engine, plug-ins, a Material Editor and a Studio scene editor with a full 3D environment. The plug-ins connect Maxwell Render to workflows with 3D and CAD applications to produce photorealistic imagery and lighting for architecture, interior design, product design and film and TV production. Artists can use it to create materials, set lights and cameras and render scenes in a hyper realistic manner, and test how lighting or a new product will look. A new modo plug-in has been added to version 2.

The Maxwell Material Editor has real-life parameters to define materials and create sub-surface scattering effects - now with a faster-rendering Thin SSS mode to handle single-sided geometry, thin layers and light-emitting materials. The new stacked materials make it easier to create complex materials. Displacement is a texture-driven tool to create real geometric detail on objects while rendering. Maxwell Studio allows users to manipulate objects, lights, materials and camera and environment settings in alternative workflows for applications without a Maxwell plug-in. It accepts OBJ, STL, LWO, PLY, XC2, DXF, 3DS, FBX, Collada and MXS formats.

More new features are the customisable user interface, more robust networking and better adaptation for pipeline integration through the command line. A new scripting language is in place for automated rendering tasks.

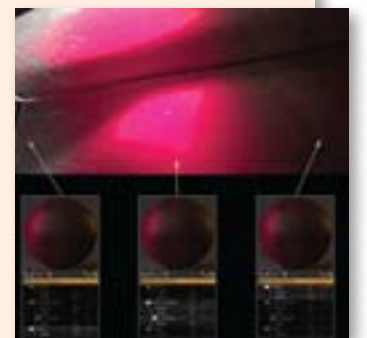
Maxwell Render is based on real-world units and settings for the camera and lights, and is an option for VFX production

with variable lighting for ads and films. Its network system controls pipelines to distribute a render job over several machines. It can access all processors available and can connect Windows, Mac and Linux systems. Render the same image on all computers, or render one frame of an animation on each.

The Physical Sky system uses real-life and physically correct parameters to control the look of the sky and the subsequent lighting in the scene. Users can create pre-sets of sky settings to load or share, and the current sky may be saved as an HDR map.

Using the Multilight feature you can adjust the light intensities and colours, another v2 improvement, in real time without re-rendering images. The camera model simulates a real camera with f-stop, focal length and shutter speed, automatically simulating depth of field, natural 3d motion blur and other effects, and makes it straightforward to match the lighting levels of a real photo with a render. Support for Instances renders thousands of high-polygon objects in a scene using the same amount of memory required for only one object.

A Maxwell Render license includes an online library of over 3500 free materials, skies, illumination pre-sets, tutorials and community support. www.maxwellrender.com



Toon Boom Animates New Harmony

Toon Boom Animation has released an upgraded version of Harmony, their team-based software for animation production, which combines animation tools with professional consultancy services. It was specifically designed for long-term episodic and feature-length projects. Users can create traditional, paperless and cut-out animation, integrated into a network-based pipeline. Several animators may work simultaneously on the same scene, accessing updated media from Harmony's asset library.

Toon Boom says the latest version, called New Harmony, has a more robust core animation engine that will handle multiple high definition projects, OpenGL anti-aliasing and

more effects. Full 3D rotation of camera and elements include real-time playback. Content creation improvements are an enhanced Brush Tool, WYSIWYG preview and availability of several gradients or textures at once. The new animation tools include symbols and an animated read module. To speed up networking and collaboration in the workflow, a detachable Stage client for off-site work has been added, with integration for Toon Boom's Manager application for production tracking. It now has a contextual user interface with redesigned icons, and smaller views and toolbars for more working space.

As a turn-key product, New Harmony includes consultancy services in implementation, custom training, production assistance and custom development. Consultancy services can form a major element of the Toon Boom pipeline, aiming to deliver projects of all sizes within budget and on time.

www.toonboom.com



WD TV Live Media Player Adds HD Network Capability



WD's new TV Live HD media player features network capability and full-HD 1080p resolution. It plays HD videos stored on USB and network drives and Internet content from web sites on HD television screens, without a computer. Users can stream or transfer movies from PC or Mac computers or a network-attached storage device such as WD ShareSpace network drives to their HD TVs. They can also stream rich

content from YouTube, Flickr, Pandora and Live365 Internet radio.

The HD onscreen menu combines all of the users' available media in one interface. For people with large libraries of digital videos, photos and music on their computers, the player can provide more seamless access to personal and Internet media. It connects directly to a HD TV and plays most file formats stored on a connected USB drive without transcoding, processing media to enable playback in full-HD 1080p resolution. WD TV Live media player also will play movies and photos stored on other ordinary USB devices such as digital camcorders and digital cameras.

Navigate with the included remote control and animated navigation menus. Navigation options include thumbnail and list views, media library and search Transfer files by copying, moving or deleting files stored on a USB drive, a network drive, camcorder, or a camera to the attached USB drive using on-screen menus, and add more USB drives for more space. There are two USB ports for media playback from multiple USB drives, and you can file copying between USB devices. RRP: AU\$199, NZ\$299, www.westerndigital.com

Pixar Adds to RenderMan Pro Server

Pixar Animation Studios has introduced version 15.0 of its RenderMan Pro Server software with several upgrades, including unlimited threading per machine, volume primitives, important additions to the RenderMan Shading Language RSL, support for Disney's upcoming open-source Ptex per-face painted textures, imager shaders, an API for subdivision surfaces and others.

Ptex has been used in Disney's BOLT and the short, Glago's Guest. Ptex stores a separate texture per quad face of the subdivision control mesh, with a per-face adjacency map, in a single texture file per surface. It uses the adjacency data to perform filtering of multi-resolution textures across surfaces, and scales to models of arbitrary mesh complexity and texture detail.

RenderMan Pro Server 15.0 also delivers performance increases for production scene rendering, relating to ray tracing, ambient occlusion, improved thread scalability and optimized memory management. Unlimited threading is intended to enable artists to take better advantage of their rendering hardware, allowing each license of RenderMan to use any number of threads on multi-core platforms. RenderMan Pro Server 15.0 is among the first products to introduce unlimited threading, and will be followed by the next versions of RenderMan Studio and RenderMan for Maya.

RenderMan Pro Server 15.0 is compatible with Mac OS X, Linux 32-bit and 64-bit, Windows XP 32-bit, Windows Vista 32-bit and 64-bit, and Windows Vista 64-bit HPC Server. Separate upgrade pricing from RenderMan Pro Server 14.0 to 15.0 is also available. Evaluation copies of RenderMan Pro Server 15.0 are available. www.pixar.com



e-on Vue 8 Sculpts and Renders in 3D

e-on software's Vue 8 products are now available. The Vue Terrain Editor in the Infinite software is improved with 3D sculpting features for carving and moulding terrain features and shapes. Paint overhangs, caves, and reliefs with a 3D brush containing several types of brush behaviours giving the ability to sculpt, inflate, extrude, free form, invert and smooth.

When sculpting features on finite and infinite procedural terrains, Vue now automatically generates infinitely detailed expanses of terrain, where you can tune or rework localised areas. Sculpt in roads, paths, and caverns while preserving local procedural details. Sculpting refines the terrain mesh based on the localised application of the 3D sculpting brush, automatically adding polygons only where needed and optimizing mesh density.

As you paint at different levels of detail, the subdivision technology selects the appropriate LOD. Paint with brushes representing millions of polygons in real-time. The terrain editor now supports sculpting in context of the entire scene, to edit and shape terrains around scene elements.

Displacement can now be manipulated independently of the bump channel. Displacement depth and scale is now accessible directly from the material editor and can use any procedural or texture map function as input. Cloned displacement combines the bump noise into a composite noise to drive the bump and displacement output together. Displacement can be adjusted to move in a user defined direction - horizontal, vertical, along the normal, or other combination. The displacement magnitude is adjustable in all three X, Y, and Z dimensions.

Vue 8 introduces Spectral 3 atmospheres for more realistic clouds and atmospheres Spectral 3 improves the quality of internal, external and projected cloud shadows, and of godrays. The new Recursive Strata Terrain fractals optimise the creation of stratified terrain features. The fractals are adjustable and



can be applied with Vue noise functions for different looks.

Rigged and pre-animated mesh objects can now be re-posed and animated directly inside of Vue. Create custom poses and movements directly inside of Vue with meshes converted to Vue's Rigged Mesh format, and import rigged and animated meshes using Collada or use the MaxToVue exporter plug-in to export directly from 3ds Max.

A new shader-based OpenGL engine in xStream takes advantage of higher-end graphics cards for better visual quality such as normal mapped display of EcoSystem instances, specular highlighting and camera mapping previews. Renders can now be displayed in the background to visualise scenery objects in context. Dynamic EcoSystems can be seen in previews by setting the number of instances to display near the camera. You may display to screen while rendering to disk or save an image at user defined intervals.

Directly access Vue features using icons within the host application interface - Max, Lightwave, Maya, Softimage and Cinema 4D. Most Vue dialogs are now non-modal which allows access to the host application even with the Vue dialogs open. Vue 8 xStream is compatible with the V-Ray renderer, inside of 3ds Max and Maya. xStream for Max and Maya handles cross-shadowing, reflections, refractions and global illumination with V-Ray and mental ray. www.e-onsoftware.com

Sony Extends XDCAM EX Line-Up

Sony has announced new additions to its XDCAM EX range with a shoulder-mount PMW-350 camcorder and a hand-held PMW-EX1R. These new models combine the HD imaging of XDCAM EX with new features including a standard definition DVCAM recording option, the first time this has been available to XDCAM EX users.

The PMW-350 uses three 2/3-inch Exmor CMOS sensors with 1920x1080 resolution for full HD imaging. Sensitivity is F12. The camcorder includes DVCAM recording via the CBK-DV01 option and is studio-configurable, with timecode in/out, genlock in, and HD-SDI and HDMI out.

Its shoulder-mount design has a low centre of gravity and light weight for more stability, but maintains the usual Sony operational layout. Power consumption has been kept to 15W, offering longer operation on a single battery.

The camcorder will be available in two versions, the PMW-350L body-only model and PMW-350K with a Fujinon lens. The lens has auto and manual focus with a 16x zoom and a 2/3-inch bayonet mount, independent focus, zoom and iris rings, auto focus mode, manual focus assist and a focal length of 8 to 128mm, equivalent to 31.5 to 503mm on a 35mm lens.

The PMW-EX1R model is the successor to the PMW-EX1, Sony's first memory-based camcorder launched in 2007. The PMW-EX1R adds DVCAM recording, an HDMI output, a higher-resolution viewfinder, and auto iris.

Sony has improved the hand grip on the PMW-EX1R and

access to switches, and added one-click Slow and Quick and easy-to-access switches. Smooth handle zoom transition, an image inversion option and up to 15 second picture cache recording are some other listed enhancements.

Sony is launching two new media options with the new camcorders. The first is the SxS-1 memory card with a higher 32GB capacity and high-speed data transfer of 800Mbps, adding to the existing SxS PRO memory media. Sony says it provides an average lifetime of five years daily use, with life indication displayed in the viewfinder of the new camcorders.

The second new product is the MEAD-MS01 adaptor for use with Sony's Memory Stick Pro HG Duo HX Series media. Available in capacities from 4GB upwards, this media can be used as either an emergency card for production or as a cheaper option for entry-level videographers.

Sony's current XDCAM EX models, the PMW-EX1 and PMW-EX3 camcorders and PMW-EX30 record deck, can also be made compatible with the new SxS-1 and MEAD-MS01 with Memory Stick, through a software upgrade to be available in early 2010.

The software supplied with the new camcorders, Clip Browser, is being updated to version 2.6, which supports new recording formats, 1440x1080 (HQ) and DV-AVI, and four channels of audio. Clip Browser now automatically detects and corrects flash bands occurring in frames, and a manual mode allows users to select frames to correct. www.sony.com

Nikon D3S Gains Speed and Sensitivity



Nikon has introduced a new FX-format digital camera, the D3S. It delivers ISO 200 to ISO 12,800 as standard for enough latitude to suit most lighting situations. ISO sensitivity can be expanded from Lo 1, ISO 100 equivalent up to Hi 3, ISO 102,400 equivalent, accommodating very low-lit conditions, such as indoors and at night or where faster shutter speeds or more

depth-of-field is required, still revealing colours and details.

The D3S's image sensor is based on the one found in Nikon's D3 camera. Its 12.1-megapixel FX-format sensor has been redesigned to maintain pixel count and pitch for greater latitude in high ISO performance with a higher signal-to-noise ratio and a wider dynamic range for still images and movies.

According to Nikon, the D-Movie mode records HD (1,280 x 720 pixels) Motion-JPEG movies at 24 fps. By controlling the aperture, the sensor renders low-noise images with bokeh effects, using various NIKKOR lenses. High-Sensitivity Movie mode allows shooting at up to ISO equivalent of 102,400 in places too dark to see clearly. D-Movie footage can be trimmed in-camera by selecting starting and ending points. Movie frames may also be saved as JPEGs for printing and web publishing. The D3S has an internal mono-aural microphone and an external stereo microphone input.

EXPEED in-camera image processing uses 14-bit A/D conversion and a 16-bit image-processing pipeline, which aims for a comprehensive tonal range and minimised tone jumps. The D3S can correct colour fringes caused by chromatic aberrations that sometimes appear at the edges between subject elements. Aberrations are corrected, regardless of the lens type.

Nikon's Active D-Lighting is designed to automatically

regulate the dynamic range of high-contrast scenes, pulling out shadow and preserving highlights while maintaining contrast. You may choose from six settings, or bracket your shots. To control the look and feel of images, the D3S comes with four pre-installed Picture Control profiles, which can be fine-tuned for sharpness, saturation and other parameters and saved as new custom profiles for particular jobs or conditions.

Start-up time is approximately 0.12 seconds and release time lag is 0.04 seconds, the same as the D3, but the D3S's buffer memory is twice as large as in the D3. The D3S has a continuous shooting rate of 9 fps, with a stepping motor to help to steady the delivery of fast continuous shooting speeds at a wider range of aperture settings. Using the DX crop, photographers can also add a 1.5x picture angle and a faster frame rate of 11 fps.

A 1,005-pixel RGB sensor reads brightness and colour information for AF, AE, i-TTL flash control and auto white balance to overcome quick or erratic subject movement and complex lighting conditions. The D3S's large prism for FX-format, which gives a larger, brighter viewfinder image, and focusing screen are designed for more intuitive manual or autofocus.

The two card slots can be assigned different tasks. Record two full CF cards of data sequentially for large amounts, record the same data onto two cards as backup, record RAW and JPEG simultaneously onto separate cards, and transfer data from one card to another. The slot can also be used for data-heavy D-Movie recording.

www.nikon.com.au



A new AF system features 45-point area AF with 39 cross-type points and sensitivity to f/2.8. Using the registration function, AF points can be readily changed when the camera's orientation is changed. The AI servo AF has also improved tracking for slow-moving subjects during macro photography.

The high 10 fps speed is due to the Dual DiGIC 4 image processing built into the EOS 1D Mark IV. It also features Live View shooting with Auto Focus and a Face Detection mode. Preview images in real time on a 3-inch LCD screen with 920,000 dots for composition. Housed in a water and dust-resistant magnesium alloy body with EOS integrated cleaning system, it will be available from December. www.canon.com.au



Canon's latest digital SLR camera, the EOS 1D Mark IV records both stills and full HD movies shooting at 10 fps, up to 120 shots in a single burst.

The new model supersedes the EOS 1D Mark III, and has been developed as a high-sensitivity action camera for low-light situations with a 16.1 megapixel Canon APS-H CMOS sensor and standard ISO range of 100-12800, expandable to 50-102400. Precise, low-noise images can be achieved at the lower ISO speeds, and used to produce large, detailed images in a studio environment.

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— **Elliot Graham**, editor, *Milk*

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