

## NASTA 2010 500 WORD TECHNICAL REPORT - DEMON TV

### MACHINIMA

Over the summer of 2009 Demon TV investigated various methods of making some unique and interesting Ident videos – one of which was the use of Machinima.

Machinima is recognised as the use of a real-time 3D graphics engine to produce video content – these engines are typically found powering computer games, upon which most Machinima is based and produced. To most people, the boundaries of Machinima extend to teenagers moving Halo characters around on a screen, recording it and then dubbing some voice acting of dubious quality over the top of the footage! What we managed to achieve was more expansive and, crucially, easier to control and develop a workflow for.

We started off investigating a couple of different engines: there was CryEngine 2, which powers Crysis, a popular shooting game. For a real-time graphics engine, it looks pretty phenomenal, and the editor was OK – fairly intuitive but a tad quirky at times. Recording footage involved capturing each frame (at 1080p) as a lossless bitmap, then using a compositing program such as After Effects to run the frames back at the desired frame rate and transcode them to an editable codec.

By far the most successful venture was involving the Unreal Engine – it's used in many, many games, most notably the Gears of War series and Batman: Arkham Asylum – and the majority of research and development was carried out using the editor provided with Unreal Tournament 3. Compared to CryEngine 2, Unreal Engine was far more intuitive and easier to import content into, and allowed for some visually unique Ident pieces.

Recently, however, the developer behind the engine, Epic Games, has released and is actively supporting the Unreal Development Kit, which is a fully featured version of the engine, bang up to date and completely free for non-commercial use. Capturing video out of the Unreal Engine is slightly more flexible as it is less demanding on computer hardware, and a capture program such as Fraps can be used to record a real-time video stream which can then be transcoded for editing. It does also allow for recording the video frame-by-frame but the method used to achieve this is somewhat slapdash and nowhere near as intuitive as CryEngine's capturing.

All in all, using these graphics engines to produce our Idents among other animations has been exciting and hugely technical as it requires a thorough understanding of all the techniques used primarily by graphics artists and game developers. It allows us to achieve a pretty unique look as it doesn't have the pre-rendered, often ray traced look that most 3D animation boasts – the compromise to make the graphics run in real time at an acceptable frame rate forces us to be more inventive with how we build, light and animate the scenes, but it's a good challenge and one that produces some interesting results, some of which can be seen from our Ident and Animation entries this year.