# Sound of the underground

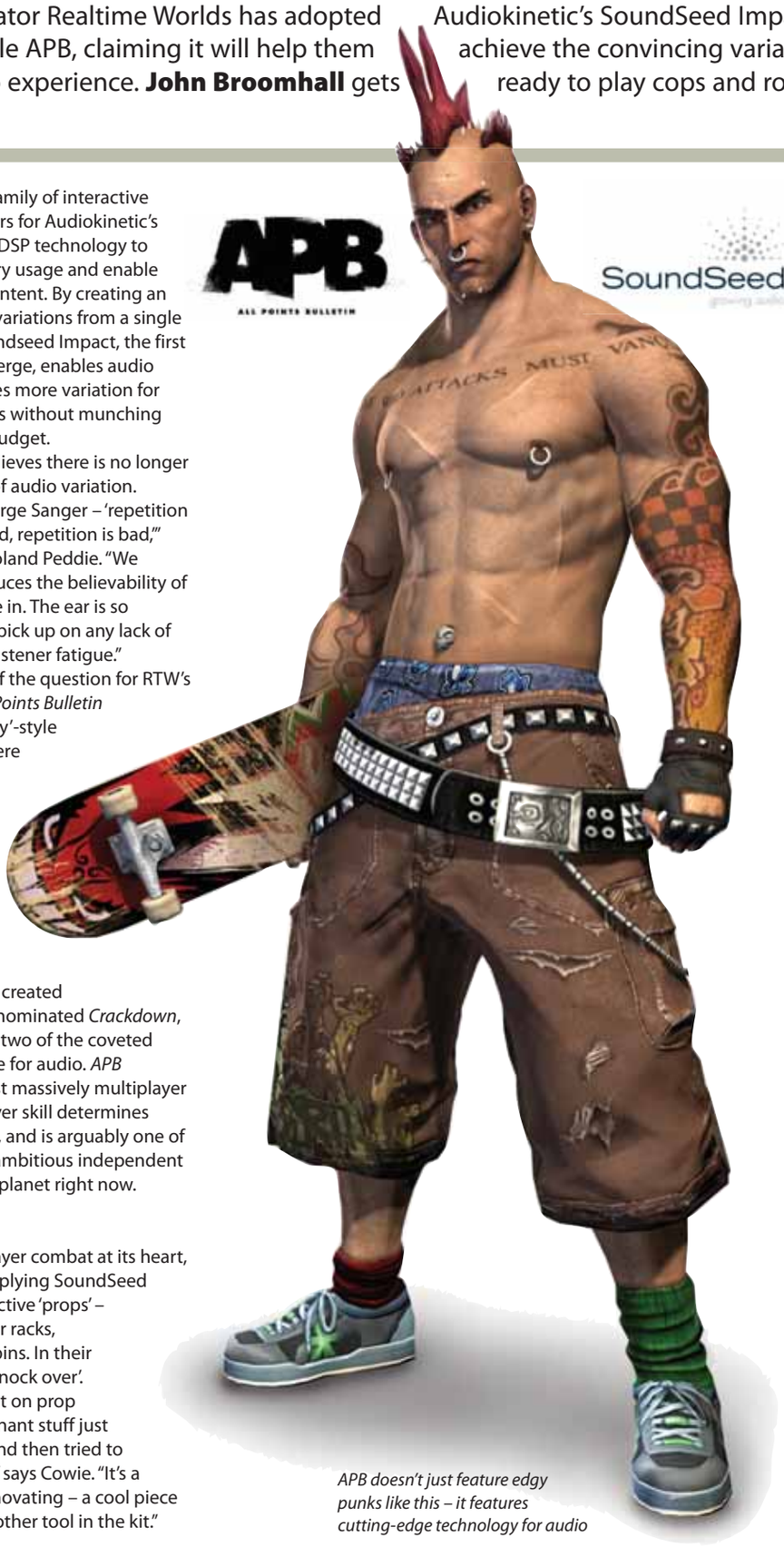
Crackdown creator Realtime Worlds has adopted Audiokinetic's SoundSeed Impact for its hotly-tipped forthcoming title APB, claiming it will help them achieve the convincing variation required for a high-end audio experience. **John Broomhall** gets ready to play cops and robbers…

SoundSeed is a family of interactive sound generators for Audiokinetic's Wwise that use DSP technology to greatly reduce memory usage and enable rich dynamic audio content. By creating an unlimited number of variations from a single 'footprint' sound, Soundseed Impact, the first family member to emerge, enables audio developers to get miles more variation for resonant sound effects without munching memory or blowing budget.

Realtime Worlds believes there is no longer any excuse for a lack of audio variation.

"To paraphrase George Sanger – 'repetition is bad, repetition is bad, repetition is bad,'" explains audio lead Roland Peddie. "We believe repetition reduces the believability of the game world you're in. The ear is so sophisticated – it can pick up on any lack of variation and induce listener fatigue."

All of which is out of the question for RTW's exciting new title, *All Points Bulletin* (*APB*), a 'control the city'-style community game where players can either take the role of the criminals or of those bringing them to justice. Founded by development legend David Jones, Realtime Worlds' talented team created the five-times BAFTA-nominated *Crackdown*, which went on to win two of the coveted masks – including one for audio. *APB* promises to be the first massively multiplayer online title where player skill determines character progression, and is arguably one of the largest and most ambitious independent game projects on the planet right now.




*APB doesn't just feature edgy punks like this – it features cutting-edge technology for audio*

## PLANTING SEED

With player-versus-player combat at its heart, the audio team are applying SoundSeed to a plethora of interactive 'props' – dumpsters, newspaper racks, telegraph poles, dustbins. In their words, 'stuff you can knock over'.

"We initially tested it on prop impacts; metallic resonant stuff just like they suggested, and then tried to stretch it a bit further," says Cowie. "It's a great thing they're innovating – a cool piece of technology and another tool in the kit."

Given that audio production was well underway when the team started evaluating SoundSeed Impact, a good deal of the prop recording work had already been done.

So why use SoundSeed? Cowie explains that it was a pre-emptive move for the dreaded optimisation sweep: "The approach we've taken so far has been – let's just get assets into the game. The amount of memory we've been using hasn't been the main priority, but it will become so. SoundSeed will enable us to retain a lot of variation that might otherwise have been lost in the optimisation phase."

"But there's more to it than that – using Wwise has changed the approach that we'd have previously used anyhow. Now we have 'blends' containing soft, medium and hard impacts, controlled by a collision intensity real-time parameter control (RTPC). SoundSeed will really max out the variation making the audio even better. It could also reduce the amount of pre-baked variations needed in each of those collision intensities."

> ***"Using Wwise has changed the approach that we'd have previously used. SoundSeed will really make the audio much better."***

With Realtime Worlds already building in sound variation the traditional way, Cowie agrees that by adding SoundSeed to Wwise's existing methods of randomisation a far higher degree of variation can be achieved.

Clearly, not every game audio developer finds themselves in this rarefied atmosphere, and for those who don't, Peddle still believes that the tech can deliver a reduced memory footprint and significant time savings. "An audio developer relying more on library material without the budget to record as many variations as they like could save a load of time and money and memory – and still maintain good quality. It could have a significant impact."

When contemplating a future project where SoundSeed is built into the equation from the outset, Peddie and Cowie reckon it

would have a distinct influence on their methodology.

"Take a metal pole – you can hit it maybe four or five times and it all sounds similar, but you end up using six variations anyway," explains Cowie. "That's a case where you'd say let's just use SoundSeed which can actually get more variation. Then there's items that when you hit them, they break – you only have one shot at recording that, so SoundSeed would be really useful."

Peddie agrees: "I think you might approach a few things a little differently – like if you know you're recording something with a lot of resonance, you might not bother about trying to get variations – SoundSeed would do it for you."

"Actually knowing it's there would always have an effect on anything you know it might deal with," says Cowie. "As a first port of call we'd maybe try using SoundSeed for a sound type. Does it work? Does it come up to the standard we'd expect? If yes, then go with it. If not, then maybe record more variations."

Given the pressing need of audio variety in today's triple-A games, whether you're on a limited audio budget or blessed with an open cheque book, Audiokinetic believes that SoundSeed can yield tangible benefits to all developers including that all-important memory reduction.

Meanwhile, the SoundSeed Impact Modeller application enables sound designers to experiment with the creative potential of mixing and matching different parametric models and residual files, a prospect that the Realtime Worlds team finds interesting.

"It's something I'd like to try," enthuses Peddie. "Maybe mixing the residual sound of a gunshot with a sword impact – you could create some interesting stuff. People are always looking for new ways to create original sounds so any new tools that can possibly do that are always welcome."

## SOUNDSEED SPROUTS

Cowie and Peddie are enthusiastic about Realtime Worlds' overall choice of Wwise middleware for *APB* and the level of support they receive from the Audiokinetic team.

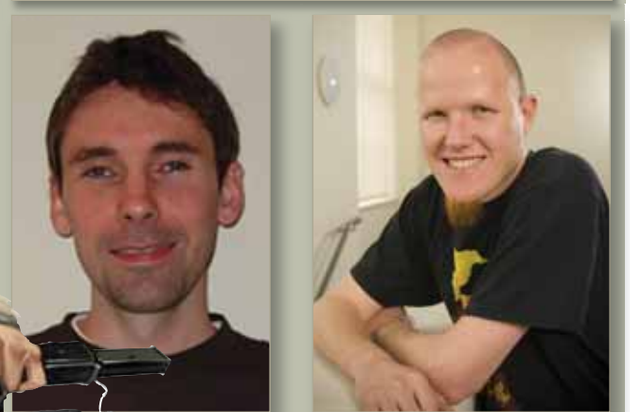
"For me the choice was mainly about the amount of control and scope for creativity it gives sound designers, minimising the support required from in-house software engineers. It's well designed and implemented. Interface-wise, everything's laid out really clearly and technically integrating it was quick and easy. I think it's great," says Peddie.

Cowie concurs and cites improved workflow:

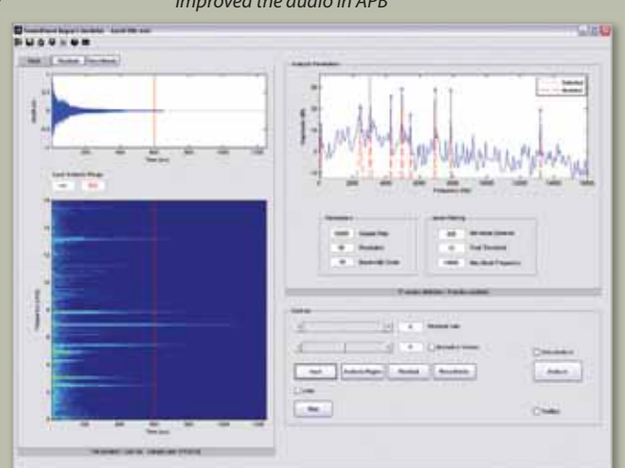
"You end up with a closer result to your overall aim – the creative side of things flows a bit more. Being able to control the RTPCs is great – we can go do our thing and spend however much time we need tweaking and testing in real-time. It makes a huge amount of difference and it saves a huge amount of time. The profiler was a completely new thing to me – it's something I use pretty much on a daily basis to cut the amount of time spent tracking down what's actually happening. With so many sounds coming back from the game, it's very useful to capture all the information, stop and scroll back through all the data. And it's robust."

Just talking to the Realtime Worlds guys briefly gives the clear impression that they believe synthetically generating and extending sounds to be a part of game audio's future – and something they're now equipped to embrace.

**www.audiokinetic.com**
**www.realtimeworlds.com**

*Cowie (left) and Peddie (right) agree that implementing Audiokinetic's Soundseed has improved the audio in APB*



*Realtime Worlds' audio team say Soundseed's workflow and effects functions make it a worthwhile addition for the production of APB*