



Case Study: Target3D - a start-up passionate about motion capture

Who is Target3D?

[Target3D](#) is an incubated and affiliated company that is making good use of DETC's office and demo space to cement its emergence in the developing businesses of motion capture and object tracking in 3D space.



Working out of DETC's office space at Stratford, the start-up offers consultancy expertise in 3D technologies and is the sole UK distributor of [OptiTrack](#) optical tracking solutions. Plus, as resident 3D motion capture experts, the team are on hand to support other DETC affiliates for all things related to 'tracking and emerging 3D technologies'.

As we sat down to discuss its genesis and plans, the company's co-founders Allan Rankin and Ashley Keeler were busy taking calls and were twice called away to demonstrate to clients its motion tracking setup down the hall.

"We were established in May last year and began trading in July, utilising DETC's space from August, so we're less than a year old and doing very well for it", said company co-founder Allan Rankin with a clear sense of pride.

“We operate in what we describe as the four primary verticals of motion capture: Virtual Reality, Robotics, Biomechanics and Animation”, said Ashley Keeler.

“Focusing on various 3D technologies, we specialise in facilitating supply of motion capture technologies for companies”. “We advise on products to buy, such as types of headsets or workflows for visualising CAD data, and provide other consultancy services. Basically, we’re a one-stop-shop; analysing product needs for clients and then providing a marketplace.”

“A passion developed over 15 years of combined experience in the digital sector”

Allan left his role at EyeKandy, and took up the gauntlet of becoming Target3D’s new CEO, partnering up with Ashley Keeler who became Target3D’s Chief Technical Officer. They now lead a team of James Marks and Eugene Phillips (both Technical Engineers) and Steve Gaukrodger (Senior Programming Developer).

“Ashley and I both sold OptiTrack solutions for many years. Me in the UK and Ashley in Australia.” recalled Allan.

“Looking back, we both felt like it was the right time to start out on our own.”

“We’re proud to be able to offer a dynamic service to industry as we both have a passion for motion capture and for following our interests.”

Optitrack motion capture at DETC

Target3D's optical tracking hardware and software is currently set up in the DETC's VR lab and uses twelve of Optitrack's Prime motion capture cameras, including Prime 13, 41 and 17W cameras. The latter of these boasts an impressive 1.7 million pixels of resolution, capable of running at 360 frames per second with a large 70 degree field of view.

[Optitrack](#)'s system provides low latency, wide area VR tracking for CAVEs and head-mounted displays, where a 'cave' is an immersive virtual reality environment using projectors directed to the walls of a room-sized cube.

It also offers motion capture for virtual reality, movement science and for film, games and education, while, in terms of industrial applications, potential uses include precise tracking for industrial robotics.

Having full optical and motion tracking capabilities on site has allowed DETC access to cutting edge R&D technologies which in turn has led to a number of new and innovative solutions for problems faced by automotive OEM's.



Mass Person VR starting to become a differentiator

Target3D reports business as healthy and demanding, with plenty of activities lined up. However, a technology consultancy must be vigilant as other technologies may well offer potential for significant growth potential.

“We see a major emerging sector as being large-scale multi-participant VR and mixed reality environments”, claimed Allan, “such as for around four to twenty participants in simultaneously shared spaces. This could be for VR gaming or simultaneous VR training, and experiential productions.”

“Mass person gaming is still being explored but is starting to become a differentiator, including multi-sensory aspects such as haptics for simulating touch of physical objects.”

Opportunities in automotive

“How Target3D fits in with DETC, and the automotive sector, is we can help enable OEMs set up a lab for viewing content in VR, navigate round that content and collaborate. We can help fast-track the prototype stages of a design”, said Allan.

The suggestion is that engineers working on a new car model or production line process can problem solve before physical prototypes are manufactured and still iterate the final product long after initial designs are visualised.

By using collaborative VR software, all parties can then contribute to changes in real-time. Any design review can take place with all personnel involved, even where they are in different physical locations, even different continents.

“Finally”, added Ashley, “we can also track human motion to see the human stresses and strains of a production build, looking at the ergonomic impact of design alterations from scientific biomechanical feedback.”

Example YouTube videos:

<https://www.youtube.com/watch?v=a32sHf7HxUM>

<https://www.youtube.com/watch?v=NZktkqVOe-0>

<https://www.youtube.com/watch?v=resX13kHAjc&t=20s>

<https://www.youtube.com/watch?v=GPLxvKZVu9w>

<https://www.youtube.com/watch?v=2f0W61N9NS4>

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