CAD project cruises with Itanium

COMPUTING SA EXCLUSIVE

Epaq Cart[1] Solutions, a Pretoria-based computer-aided design (CAD) company, says that it recently gave the Itanium architecture a performance shot in the arm, by proving that it can create, manipulate and deliver one of the world's largest CAD models.

Epaq - a relatively small Pretoria operation that focuses on highly tech nical design projects - is a reseller of PTC's Pro/Engineer CAD software and its Windchill PLM applications. The company was contracted last year by Spacemaker, a US-based car park specialist, to design a fully-automated, 11-storey, 470-bay parking garage. The project looked relatively simple.

However, it turned out to require the creation of a CAD model only exceeded in complexity by those used in some NASA research projects.

"The model had over 500 000 components," explains Anton Greeff, one of the senior designers at Epaq, and lead engineer on the parking garage project.

"We were using Intel 32-bit machines at the project's inception, and there was a limit on the memory they could take (2GB for a P3 machine). The model itself used almost 4GB to open and up to 6GB when working with it. A single machine could not handle it, so we had to split the model into 22 sub-assemblies and divide it between six designers' machines," he adds.

Collaborating in this way was hardly ideal. It took time, and Epaq could not see the garage model in its entirety. The choice was therefore made to search for an alternative technology.

"Itanium (the architecture co-developed by HP and Intel) was the only real choice," explains Susan Dey, the workstation specialist at Intrinsic Technology - the HP systems integrator that became involved in the later phases of the project.

With the first iteration of the hardware and software, the model took almost 28 hours to open - an improvement on not being able to open it at all. Technological advances in the months that followed brought this time down to 11 hours.

"We recently installed an Itanium 2 workstation with production releases of the operating system and Pro/Engineer Wildfire for 64-bit Windows, and the model opened in just one hour," continues Greeff.

"We can now spin the entire model on screen in real time. And we can perform top-level interference checking and collaborative fly-through design reviews at a level of detail previously unthinkable for a desktop workstation," he says.

That Itanium was chosen for this application reflects its ability to step into the fray where 32-bit hardware and applications, taper off, the com pany claims.

"We are seeing a lot of companies hitting a wall when running highly technical applications on 32-bit platforms... it can only offer you a certain amount of ultra-high end performance," explains Rory Green, the personal sys terns group (PSG J product manager at HP SA, notingihat 1A-32 is not specifi cally designed for this purpose.

"The Itanium 64-bit architecture is completely different, and cannot really be compared to ks32-bit predecessor... it takes Windows and Linux into the space traditionally occupied by Rise driven Unix machines, and makes it a viable platform for top-level technical computing," *he* concludes.