

Designing *successfully*

Since emerging from Ferranti International in 1994, Ferranti Technologies, a privately owned, specialist contract designer and manufacturer, has established a reputation for engineering expertise, quality and commitment in the defence, aerospace and rail sectors.

The company's electronics design team has analogue, digital and power design capabilities and its designs are accredited to a number of aerospace and defence Critical Standards, including DO254 and DO-178B. "We specialise in power and control systems for harsh or difficult environments, typically for demanding defence and aerospace applications," said Ben Griffin, hardware engineering manager.

As part of its continuous improvement activity, Ferranti Technologies has replaced a range of simulation, schematic and data storage software applications

PCB design software speeds time to market. By Phil Mayo.

with Altium Designer.

The company, which has a 25 strong design team, believes the switch has helped to make its processes both more efficient and more robust. Griffin noted: "For the first time, designers have direct, real time cost information for each component as it is added to the design.

"We reviewed a number of design packages, including some that were highly functional and very complex. For us, the key was to find a tool that would improve productivity across the company. It is not just about good design in isolation – it's about producing a complete unit efficiently, reliably and profitably."

The tool, used within Ferranti Technologies' strict Gated Project

Management Process, interfaces directly with its component purchasing and stock control systems.

Griffin said: "In the past, design engineers would create the design then pass information to other parts of the company for component procurement, full project costing and manufacture. The Altium process starts with functional design and simulation, then moves all the way to board layout."

The design team can now select the components from a common database, which means they no longer have to create new parts for each design. Griffin noted: "The BoM contains information regarding lead time and cost, enabling us to keep track of our budget as we go along, instead of having to wait for the information to come back from the purchasing team after the board has been designed."

All board components are now specified at design stage, right down to



the varnish. Previously, specification of these 'sundries' would be left to the drawing office.

Ferranti has transferred all its component data – including its BRISCH number system – to a single access database, which interfaces directly with Altium and its MIS. In this way, price information and stock levels can be updated centrally and are available immediately across the company.

"We are already saving money as a result of using Altium," says Griffin. "We used to include a component validation stage in our process to double check the information on the drawings against the database. This step is now redundant and we have been able to free up manpower for other tasks."

Sounds good

Audio specialist Linn Products has also used Altium Designer with great success, reducing pcb design time by half and enabling it to bring its products to market more quickly.

Linn, which manufactures hand built audio and cinema systems, relies upon designing and delivering leading edge

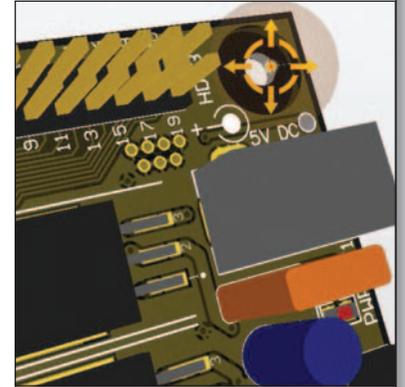
THE BIG PICTURE

PCB designers have been working in 3d for years – it's just that 3d visualising was happening in engineer's heads, **writes Rob Evans.**

The ability to view and manipulate a board design in a real time 3d environment opens up a range of practical and workflow advantages that support more informed and more intuitive design decisions. In real terms, this means the capability to 'fly' around and inside the board in real time.

Having a realistic view allows you to inspect the board accurately prior to manufacture. This makes it easier to detect design faults and to make decisions regarding overlays and coating finishes.

As the board design is being developed, you can view the board's internal layer stack up directly and make more accurate judgments when placing blind or buried vias. Zooming



and rotating around the external view also helps to make more informed placement decisions.

Altium has included 3d visualisation in Altium Designer 6.8. Taking advantage of DirectX, PCB Visualization allows you to customise and configure the design view for both 2d and 3d displays – all in high detail.

Author profile:

Rob Evans is Altium's technical editor.

"For us, the key was to find a tool that would improve productivity across the company."

Ben Griffin, Ferranti Technologies

products. It has a platform strategy approach to developing its business and reviews key areas of technology that will take the company forward.

Each new product takes anything from three to six months to design. PCB design was typically three to six weeks development, with most of this time spent inputting data. "Previously, designers had to draw each schematic from scratch," said Ian Wilson, electronic design team leader.

The company was looking to source a pcb design tool and development package that would enable it to deliver products to market more quickly. As well as reducing

lead times, Linn wanted a package that would integrate easily with its existing database.

Linn chose Altium Designer and,



according to Wilson: "The result was not just a replacement to our existing system, but also a platform upon which we could build new methodologies."

The company says pcb design time has been cut by half, bringing a corresponding reduction in the product development cycle.

The software has also improved Linn's customer supply relationships. Board designs can be shared more readily with silicon suppliers, allowing them to check designs against stock and library models at an earlier stage.

Like Ferranti, Linn benefited from Altium Designer's ability to create a BoM from the product library alongside the board layout. "This is a quicker and more efficient process," says Wilson. ■

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