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## Optikos Q embeds 3DCreate in its market leading CNC verification tool

### CUSTOMER CHALLENGE:

- Embed Simulation in CNC machine tool verification system
- View CNC program virtually in real time
- Collision detection and highlighting

### BENEFITS ACHIEVED:

- Reduce risks and broken work pieces
- Certainty of right-first-time results
- Timesaving and direct proving procedure

Optikos Q, an innovative Swedish company, has exploited the powerful 3D visualisation capabilities of Visual Components' 3DCreate and embedded the software module in its advanced CNC machine tool verification system, In Line Production (ILP). Before a cutting tool removes any metal ILP lets the operator view the proposed CNC program virtually in realtime and fully prove it on the actual machine tool to be used, thus reducing risks and increasing the certainty of right-first-time results.

### ILP (In Line Production)

A world class initiative, ILP was designed and developed by Optikos Q in collaboration with Siemens Automation and Drives in Germany. It runs on the popular Siemens 840D controller fitted to many CNC machine tools. The operator enters the CNC program to be tested into the controller incorporating ILP, which is mounted on the actual machine to be used, located on the shop floor. The program is run and on the controller's display screen the operator can see and check the accurate 3D simulation of the complete sequence of machining operations.

### Virtual collision detection

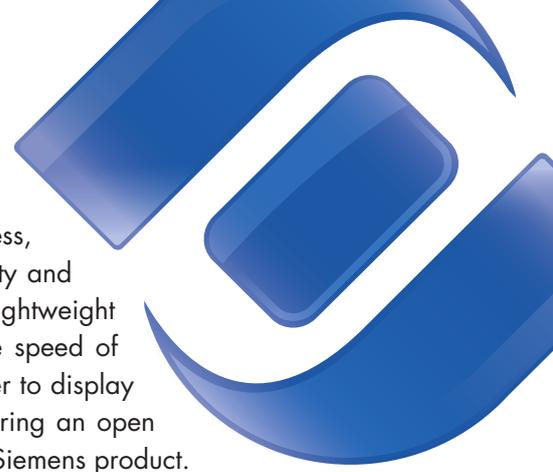
Any anomalies or virtual collisions between the cutting tool and workpiece or holding fixtures are highlighted by ILP for immediate correction. Once the CNC program is proven to work perfectly, the controller may be switched to

actual cutting mode, allowing machining operations to take place straightaway. With ILP the operator knows the program will be safe to run before cutting any metal, no expensive material or existing part will be wasted, and costly tools and fixtures will not be damaged. The alternative would be to check the program offline, in the design or engineering production office, a time-consuming and indirect procedure.



## Visual Components embedded

Rather than develop their own visualisation software, an otherwise costly process, Optikos Q chose Visual Components 3DCreate. Besides its immediate availability and affordable price it was also especially suitable for several reasons including its lightweight design, which does not place great demands on the controller's processor. The speed of operation and refresh rate of 3DCreate are also very important attributes in order to display complete sequences and not miss crucial details, such as collision events. Featuring an open architecture Optikos Q said the 3DCreate module was easy to embed within the Siemens product. In addition to many invaluable functions, the Visual Components software also contains a component library so that specific models of machines, tools, parts and fixtures may be constructed by ILP customers and re-used as required. It accepts CAD data from CATIA, SolidWorks, Unigraphics, and other popular systems.



### Customer:

Optikos Q

### Location:

Sollentuna, Sweden

### Expertise:

- ILP 3D graphical interface for risk-free CNC programming
- Advanced software and calibration tools

### Internet:

<http://www.optikosq.com>

<http://www.exechon.com>



"Manuals, tutorials and other assistance are provided by Visual Components showing you how to embed their products into your own application. They show you the basic steps and if the function doesn't exist you can develop your own. There are no limitations on what you can do. Thanks to its design you don't have to focus on how to implement 3DCreate, you can focus on the functions you want it to do," said **Fredrik Palmquist, CEO of Optikos Q.**