

# CAD FULFILLS SPEED TO MARKET NEED

Kathlyn Swantko takes a look at versatile CAD solutions for an ever demanding knitwear market

Expanded versatility and improved interactive capabilities characterize the next generation CAD systems available to meet the quick response demanded by a growing global market. CAD companies are also taking advantage of the faster communication available via the Internet to reduce production time and fulfill the "speed to market" mandate. Today's CAD systems offer a variety of tools and solutions, not only for design, but also for solving a variety of production and management problems.

Interactive CAD systems also speed up the design development process, which is particularly important for fast turns. Corey Schwartz, director of business solutions for Pointcarré USA stated, "In order to compete in the market today, with the market being so much more global, the need for instantaneous information sharing has become a necessity. The software reduces the cost of

sampling. So, you don't have to make up actual knit-downs. You have virtual samples. The use of virtual sampling cuts down on sampling time and also cuts expenses."

## Background on CAD

CAD systems for textile design were first introduced to the textile industry in 1991 with the Image 3000 System developed by Stork, the Netherlands. During the '90s, a large number of companies jumped on the bandwagon, introducing CAD proprietary software and hardware systems designed to meet the broad needs of a changing industry.

Although there are fewer companies providing proprietary software today, CAD software continues to be quite expensive, but now comes with enhanced technical support and training, industry expertise, and in some instances production interfaces. Some software also includes management

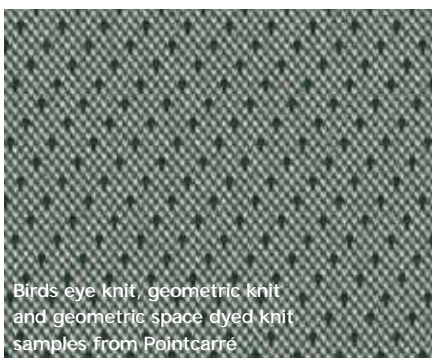
capability across a variety of solutions.

CAD packages reduce the time-consuming and expensive artistic design steps of doing color reductions, color separations, creating colorways, pattern repeats, engineering stripes and jacquards, 3D model renderings, fabric draping, and driving actual production equipment. Additional knit software has also been developed to quickly create and modify a knit design according to gauge.

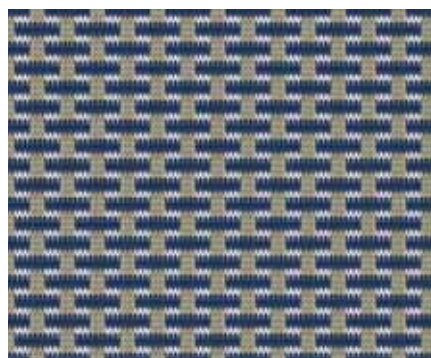
Adobe PhotoShop and Illustrator, which are available in both Macintosh and PC platforms, continue to be widely used, and are the most popular commercial design system used by small companies and independent designers, mainly because of its low cost. The use of plug-ins are also available to provide additional industry specific functions to supplement the basic PhotoShop software.

A large number of textile schools, independent designers, and small companies continue to use Adobe PrintShop and Illustrator. Ann Benion, director of textile design for FIDM Los Angeles, stated, "There are great proprietary software programs in the market. But on a budget, you can't beat PhotoShop and Illustrator."

Proprietary systems used to imply that designs could only be created and developed on one particular system. However, the changing needs of the industry, along with globalization, has demanded more flexibility within CAD systems. And, today's versions have the ability to communicate in a variety of ways, and to interface with a variety of systems. Proprietary software has also become more user friendly, more cost effective, and now includes other interfaces, such as the ability to incorporate multiple solutions, including seamless communication and machine interfaces all the way through the final production process. This has made CAD systems very attractive and versatile for



Birds eye knit, geometric knit and geometric space dyed knit samples from Pointcarré





These two CAD samples from Pointcarré show a brushed knit (right) with a flat sample of the same design

large companies.

To get the latest information on the capabilities of proprietary CAD systems, KnitAmericas talked with two major US-based players in CAD solutions for knitted fabric and knitwear production to learn how they are improving their solutions for bringing knitted garments to market. Readers may also want to check out the latest SDS-One system from Shima Seiki and the M1 pattern preparation system from Stoll. These two innovative systems are developed by v-bed knitting machine builders but specifically for their own equipment.

### Design tools from Pointcarré

According to Steve Greenberg, managing director of Pointcarré USA, Pointcarré has been developing textile CAD software for 20 years. Originating in France, the software was first distributed in the U.S. by Monarch Design Systems. Five years ago, Pointcarré bought Monarch Design Systems, and formed Pointcarré USA.

The company develops software that incorporates a wide variety of tools and features with open-ended use, allowing for a broad range of creativity involving the preparation of artwork for any type of textile end-use. The design tools have been specifically tailored for the textile designer.

Greenberg explained, "We develop software for all ranges of print design, allowing the designer to change colorways, do color reductions, design in repeat, etc. Our knit software allows the designer to

draw on screen on virtual graph paper for creating symbolic output for creating the knit design at the right scale and repeat. It gives the designer the ability to digitize designs for work in the proper gauge, and for simulating a stitch to see what it's going to look like when the garment is knitted up. The simulation tool facilitates communication with customers and vendors."

The knit design created in Pointcarré can be saved in several industry standard file formats and read by different machine types: TIFF, PICT, BMP, and TGA. The software also comes with a service package, including on-site training, regular software updates, and online help and technical support.

Although US sales have softened with the reductions occurring in the US textile industry, Greenberg noted that over the last year and a half there has been a growing interest in the software. He said, "People have been asking if we had CAD software that interfaced with machinery. So, we've started developing more interfaces for knitting machines. We've also started doing more business in Central and South America. We now have representation in Mexico City to cover that market."

Greenberg reports that more sock companies have gotten involved with CAD design. In addition, the sweater divisions of companies like Polo Ralph Lauren, and Tommy Hilfiger have expressed interest. He explained, "People want to do more visualizing. That's a big trend right now. Our software is so good at simulating how the finished product will actually look."

Speed to market is also an important advantage that the software provides. "The sock companies don't want to wait weeks anymore to go through the process of manufacturing their sock samples," Greenberg noted. "They can use our software, do the colorways, and knit the socks up. It will look just like the finished knitted sock will look. Then, they can go to production right away. They can even sell off of the simulations."

### Apparel automation with Tukatech

A recognized leader in apparel automation, Tukatech, Inc., a Los Angeles based CAD/CAM provider, develops complete software systems for the entire textile/apparel supply chain. Their line of automated systems include TUKAstudio for fabric and garment design; TUKAcad for pattern design, grading, and marketing; the TUKAjet family of high speed ink jet plotters; and the TUKAcut family of single ply and high ply cutters.

In addition, the company includes European technology for automatic spreading and TUKAtrack for unit production systems and electronic tracking in sewing, warehousing, distribution, and manufacturing; and TUKAplan, a collaborative management tool showing the most current information available from one centralized database.

Tukatek's emphasis is on providing a broad



Steven Wolfson, VP TUKAforms (left), and Paul Clarke, VP operations (right) showing the new soft TUKAforms for fitting swimwear, bras, and shapewear

package of solutions for the sewn goods industry to help streamline the product development cycle from design development to distribution.

According to Ram Sareen, founder and head coach of the Tukatech team, Tukatech systems are very reliable, require very low maintenance, and are very economical. He claims that the initial and average five-year usage cost is 30% to 45% less than other comparable systems available in the world.

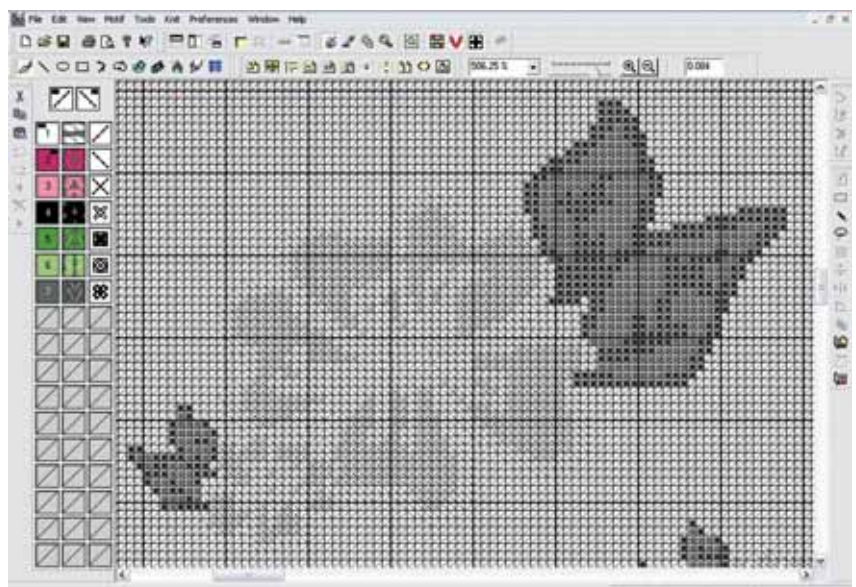
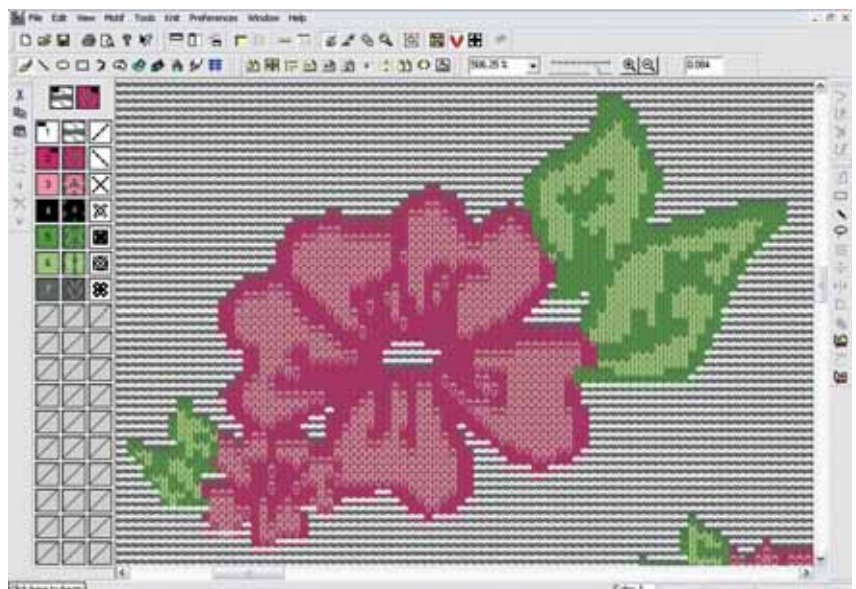
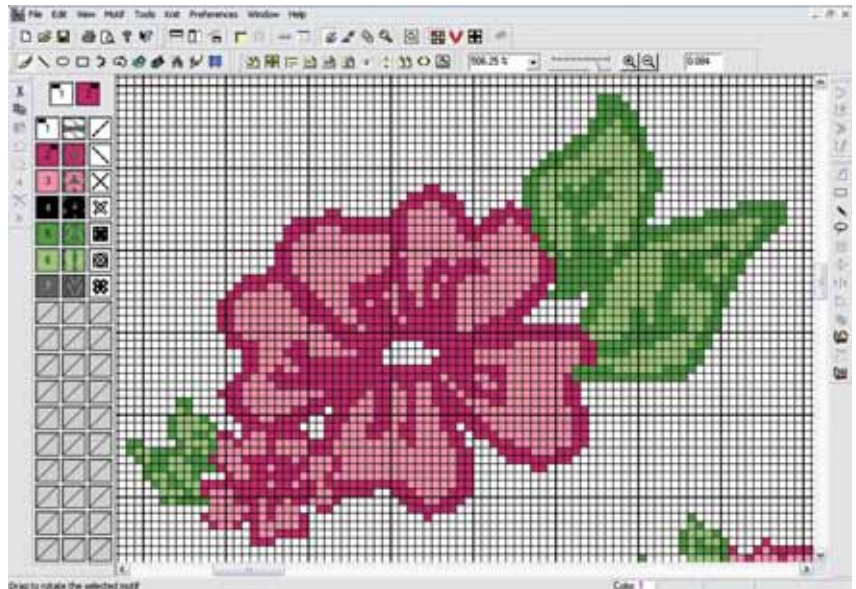
The company also assembles, installs, trains, and supports these systems. In addition to its world headquarters in Los Angeles, Tukatech has offices in New Delhi, Seoul, Milano, Toronto, Banalore, Jaiper, Istanbul and Sri Lanka, all with demonstration and training facilities.

TUKAplan applications include pattern development, fabric development, grading, marker making, 3D, PDM, PLM, MRP, and ERP solutions, sourcing, accounting, and manufacturing controls. In addition, TUKAweb.com, added in March of 2004, offers sample making service to complete the process of product development through outsourcing. According to Sareen, through TUKAweb and TUKAcenter, all companies have the ability to use CAD systems regardless of their size, even if they are using a different CAD system. And, it also addresses the needs of the 83% of apparel manufactures that have no CAD systems.

"The expansion of TUKAweb has been explosive!" explained Sareen. "We are getting dozens of members per day and dozens of new inquiries from new prospects. The unique concept of TUKAweb, with the help of 29 TUKAcenters located worldwide, we have the ability to transfer, plot, and deliver data from any CAD system to any CAD system. This used to take 5 days, but now can be done in 2 hours, saving the users as much as 90% of the cost."

About six months ago, TukaTech also established a relationship with FedEx Kinko's, which provides a back-office service catering to small or large independent companies. This service, open 24 -7, also provides a convenience for people who are traveling and are away from their offices. Sareen stated, "What we've done is to take advantage of the equipment and the infra-structure of FedEx Kinko's to get advantages for our users. Since the most expensive component in the CAD system is the plotter, this is ideal for large companies that don't want to own equipment, as well as small and independent companies, which can't afford to buy expensive pattern-making systems. There are 1,248 Kinko's in 10 countries worldwide, who have plotters. People can work from their home, or

**The three images from Tukatech show different modes (from top): pattern draft, simulation, and with symbols for the same pattern**





CAD packages reduce the time-consuming and expensive steps of color reductions, color separations, creating colorways, pattern repeats, engineering stripes and jacquards. Pointcarré images from left to right: Heather plaid with space dyed yarn; Stripe rib knit ; and stripe with grindle and space dyed yarn

while traveling. So, Kinko's plays a major roll in our total equation."

Tukatech added fabric design to its TUKAplan umbrella in June 2002 when it acquired the Fashion Studio software developed by NEDGRAPHICS for designing fabrics, prints, colorways, and storyboards. Sareen stated, "We needed Fashion Studio to further develop, enhance, and integrate with our pattern making software, so we could offer the most innovative package."

### Recent developments

Going forward, Pointcarré plans to continue to add new versions of its CAD software on an annual basis, as it has for the past 17 years. The company's most recent CAD update adds features for doing layers and transparencies.

Greenberg stated, "This software will give the designer the ability to knit and merge images together on different layers? the ability to work with one image, but on multiple layers. What that means is that I could be coloring the image on one layer, and designing a different image on another layer, or seeing the image knit on another layer. So, you can work on several images in different modes."

The most recent development from Tukatech for cutting costs and creating a better quality fit in finished garments is the addition of TUKAforms, fit forms for design, fit verification, and quality assurance. Sareen explained, "Not every designer can afford to pay for customization. They sometimes can't even afford the hourly charge of these fit models. However, with TUKAforms, they

have an opportunity to own the body of that fit model at a very low price."

Another new product is TUKAforms Softbody, for fitting products like lingerie, swimsuits, and under garments. Along with the Softbreasted TUKAforms, which possess life-like flesh, TUKAforms have overwhelmed many large manufacturers and designers. Companies like Bebe, North Face, Calvin Klein, Rampage, SAKS, Nordstrom, Triumph International, Club Monaco, and many other retailers and suppliers around the world, are shortening their design cycle and improving their fit through the use of TUKAforms."

A patented process developed by Steven Wolfson, vice president of TUKAforms and the scientist behind the invention, involves a morphologically correct, exact and repeatable fit form, based on a company's fit model measurements. A model's body is scanned on Tukatech's state-of-the-art 3-D full body laser scanner, and the digital data is used to machine a prototype fit form. Clients can place samples on the sculpted prototype to verify fit. The approved sculpted prototype is then used to create the mold, which is used in the manufacturing process to insure perfect replication of the company's approved fit from the creation of the first form to the last. All of the forms used by a company's suppliers from Hong Kong to Paris are therefore uniform, because TUKAforms are created by using one mold per shape.

TUKAforms is part of Tukatech's commitment to providing a complete set of solutions for its customer base. Paul Clarke, vice president of operations for Tukatech,

said, "The bottom line is that we want to create tools for our apparel company customers to give them a better quality fit in their garments. And frankly, as companies go more and more off-shore for production, how do they ship their fit models? Victoria Secret has spent fortunes sending its fit models all over the world for fit sessions."

Wolfson added, "But, this is better than a fit model, because a fit model will change her measurements everyday with water weight gains, etc. And, our TUKAforms are more dependable. They are perfect—they always show up for work!"

### Future for CAD

"The textile industry is one of the last industries to get involved with [computer] technology," noted Cory Schwartz of Pointcarré, "I have found that it's just a fear that people in the textile business need to overcome. Using CAD systems is like having a better pencil, or a better paint brush. Instead of being an enemy, computer technology is really a friend. It's an advanced tool that's going to help them do their job better, and get a better product out of it!"

As CAD companies anticipate the direction the textile industry is going, they are looking for ways to be more innovative and responsive to their customers' needs. The world is becoming smaller, and the market is definitely getting larger and more demanding. CAD software companies show the willingness to respond to these changes by stepping outside the box, looking at the big picture, and using innovation to provide their customers with the best possible solutions for competing in a global economy.