

SIMAC—marking time or going under?

Taking place earlier than last year, SIMAC 2007 avoided Easter and the Italian national holidays but clashed with Fimec in Brazil. For the first time, SIMAC and Tanning Tech ran together, with roughly 120 exhibitors in Tanning Tech and 250 in SIMAC, plus the trade press and a number of associated displays and events.

In many areas of production, the current levels of technology and sophistication are in excess of average market needs and there are numerous suppliers in each sector. Thus potential sales are less likely to justify high development costs and machinery manufacturers are seeking to capitalise on previous developments rather than looking for brand new solutions.

Rapid prototyping

Bombelli demonstrated an 'entry level' desktop rapid prototyping machine using a roll of 'SolidVC' PVC. The SD300 takes in one layer of PVC from a roll on to the base plate, cuts it to size—leaving the waste in place—and then sprays adhesive on the areas to be consolidated before repeating the process until the component is complete. The machine is opened and the component and waste removed by hand. No extraction system is needed and the machine is quiet in operation.

CAD

CAD and cutting systems continued to dominate the show. Delcam has continued to develop its software but the big news here was the acquisition of Crispin Dynamics. This not only gives the company the 3D CAD suite upper design facility but also the orthopaedic, costing and CAM modules. The systems already communicate but Delcam will be working to fully integrate the soling and uppers aspects over the next two years, releasing the software in stages.

Torielli now issues software updates at three-monthly intervals and has several new customer-driven improvements in version 7. The most obvious is perhaps the

Innovative Bombelli SD300 entry level rapid prototyper



larger graphics available when browsing pattern pieces, etc. But the most telling is probably the 'behind the scenes' update that reduces key strokes in the most frequent processes and improves the time taken by around 25%.

The company also introduced the Eco Technology range of equipment to create customised footbed insoles. This consists of a plantar mapping device, recording static and dynamic foot pressure to produce an average load distribution, followed by a 3D foot scanner with a depth range of 10mm. During 3D scanning, the

foot can be held in a corrected position and scans can be produced from the foam blocks currently in use in orthopaedic applications or from existing insoles. The combined data is passed to an Ecosanit milling machine which then produces a pair of insoles from a variety of materials selected to suit the load distribution data.

Procam has revised the structure of its system to provide Internet infra-structure independence giving increased flexibility and ease of use. For example, costing calculations are now performed locally and only written into the database on

Lectra's Vector Fashion cutting table



completion, thus reducing the number of transactions. Procam also specialises in providing a homogenous structure for clients' own calculations but, in response to customers' requests, has now provided a new calculation module in the Procost system. This offers an integrated costing calculation for leather or synthetic materials based on footwear industry standards.

SATRA launched its prototype Satrasumm module for costing and production control of synthetic materials. Following parameters inputted by the user during the costing phase, the lay planning software calculates several solutions for the model size and displays the results in order of efficiency. This allows the user to select the most appropriate solution depending on the complexity of the plan and skill of the cutters.

Vero International, a new entrant to SIMAC and the footwear industry, was showing on the stand of its Italian agent Overmach. It has developed the 'Visi' 3D CAD software which includes a reverse engineering module. Data input can be accepted from any system and all editing is done directly in 3D.

Cutting

Most companies concentrated on developing existing models to provide increased output or the ability to cut heavier materials.

Lectra has improved its mouse-driven drawing tool to mark leather flaws during input for auto nesting. There is still a freehand line but this is now supplemented by pre-prepared deformable shapes. It also launched a brand new range of cutting equipment called Vector Fashion, with FX for footwear and Techtex for textiles and special applications. A 30% increase in speed over previous knife cutters is claimed and a special sensor on the blade is used to avoid deformation and to ensure that the top and bottom components of multi-layer cutting are identical. A remote diagnostics system also allows Lectra engineers to 'see' and control the machines in the event of a problem.

Ibertec has updated the original Inca cutters and demonstrated the LC 2400 with a 30w laser head for cutting intricate shapes alongside the 2LC1200. The latter consists of two linked tables cutting differing materials simultaneously such as

Cosmopol F105 semi-automatic sole trimmer



uppers on one and linings on the other. Lay planning input is flexible using camera, scanner or file import.

Mamecc showed the P146WW continuous knife cutter for solings which can now deal with materials up to 12mm thick. The newest model, the E140 laser cutter for soles or insoles, was being shown on video.

Comelz demonstrated the new, enlarged CM55CN twin head belt fed continuous cutter. The twin heads retract to allow the whole of the 2m x 1.5m shared area to be available for nesting followed by cutting.

Torielli showed the smallest of the new Nestor XL range of continuous cutters intended for a wide range of applications from soft synthetics to hard soling

leathers. These feature three areas, nesting (uploading the material details via a camera, digitising flaws by mouse and either manually or automatically nesting the pieces), cutting (with a variety of tools) and offloading. Machines can be operated by either one or two people.

Last making

Newlast had the four station NLSD F4 shown on video last year. This is the only machine that can completely finish lasts without the use of toe and seat 'dogs'.

Bottom preparation

Eurmeccanica demonstrated the PE2, a twin head diaphragm press to mould dished 'Opanka' type leather soles. The sole is loaded on to a centring plate above a footform type mould, the pressing head then descends, clamping the sole in position prior to full pressure forming the sole over the mould.

Cosmopol introduced the F105 semi-automatic sole trimmer for thick materials. This is unique in that the cutter can be inclined up to 15 degrees for the whole or part of the trimming path, giving an aesthetically pleasing shape to thick platform soles.

Benazzatto demonstrated the BU1000 'work centre' to cut, route, mark and decorate soles, the latest innovation being the insertion of tiny decorative nails. The B5 basic version of its automatic sole trimmer was also on show and features refrigeration of the spindle.

Camoga Compact 300mm splitter



Latest embroidery head from Barudan



Talamonti showed the Saturno2 version of its insole cutter which now has two independent heads which, with automatic loading and offloading, give an output of 1,000 pairs per hour with minimal supervision.

Bima demonstrated two versions of its 'soft membrane' diaphragm press (SMP) for shaping footbed insoles. The male mould or sculpted shape on the base of the last is placed in the press and the vacuum operated. The base pad contains granules which form to the shape, and then functions as the mould to press the insoles to shape.

Uppers

Camoga, the specialist manufacturer of splitters, created considerable interest with an economically priced 'Compact' machine with a 300mm wide working area.

Elettrotecnica BC has added laser equipment to its range. A large conveyor type machine treats rolls, skins or large components with lasers of 50-200w, while a smaller version, the BC50W is available for individual pieces. Both include extraction systems.

Barudan, exhibiting for the first time at SIMAC, demonstrated a multi-head embroidery machine set up with various heads to produce complex effects including looped pile, twisted threads and lines of sequins or beads. It supplies a variety of work holders to ensure that footwear parts can be accommodated.

SPS had a new stud insertion machine, the 88 07 ELT, which can be programmed to automatically insert studs in a pattern by importing a file and programming on the machine manually or via a touch screen. Also new was the 86-4-RD, a two-part riveting machine with an upside down design, the barrelled component being fed to the base.

Lasting & making

On the ancillary machine side, there were a number of interesting developments. Mecval is claiming improvements of up to 33% in bond strength from its SPV3 diaphragm press. This creates a vacuum before full pressure is applied to bond the

adhesive films in order to extract air and eliminate the possibility of air bubbles causing non-coalescence.

Anzani launched the prototype of a new range of machines, the Ultravacuum line, which will be available later in the year. The range will provide conditioning, heat setting and water-based cement drying machines with treatment times of seconds rather than minutes. The heat is concentrated only on the surface of the shoe or sole so there is no wastage. The power requirements are low at 2kw and there is no heat build up in the last.

Barrera launched the stainless steel F2-1R small format two channel heat setter. This has steam followed by infra-red heat, with a small suction device drawing the warm air down for recycling

Brustia has added a dedicated programming unit to the RL500 laser rougher which is now available commercially.

Mecval offered a modified version of its swing-arm machine for stitching side wall soled footwear. The CS XPRO features a triple-feed system with a driven top wheel, normal bottom feed plus a differential feed on the bottom, rather like the 'walking foot' or step feed used as the top feed mechanism on textile machines.

Ciucani, in collaboration with Orisol Asia, has developed a production line for a type of moccasin manufacture. It involves cutting (Ares swing-arm press) and skiving (Filli Alberti) as per normal. This is followed by stitching a strip of leather to the edge of the sole in a jig on the Orisol 2520 machine, stitching the upper on an Orisol 1510 auto clamp machine with pin location and then using the Ciucani MC2004 swing-arm machine to stitch the upper to the leather strip before shaping on the Ciucani moccasin former. This COAA line is said to reduce the cost from €23.78 for traditional methods to €10.20, matching production in low labour cost countries.

In the area of lasting, there were some new product launches. Cerim had its 78B TP forepart laster with tracer application of adhesive and a slender insole post with a separate support for very long points. It also features normal quick change pincers and touch screen controls.

Leibrock showed the SZH-9CD forepart laster which can utilise Schoen & Sandt tooling. This nine-

Molina & Bianchi Sincron 4 APRMW forepart laster



Sole moulding at GFCC



pincer hydraulic machine features simplicity of use via the very clear graphics of the touch screen control panel and twin tracers for cement application.

Ormac introduced the Universal Flex 795FLEX seat and side laster with tacks or cement or both. With four waist pullers and twin cement tracers, it is aimed at high-end applications and its selling point is the ease of change from high-heeled ladies' work to men's, coupled with high output.

Molina Bianchi featured its Sincron 4 APRMW forepart laster. This retains the 11 pincers and twin cementing nozzles of the more expensive machines but has simplified engineering and ease of maintenance.

Moulding and robotics

The moulding area of the exhibition was disappointing with some companies missing, no new machines and virtually no equipment in the hall.

Ama Gusberti has developed a small syringe type tool to allow contrast islands to be formed manually before normal moulding on its PU/TPU equipment, but did not have it on the stand.

Even Klöckner Desma failed to bring a moulding machine. However, as it is currently celebrating the 20th anniversary of its work in robotics, it did demonstrate an AMIR making line as supplied to a UK company earlier this year. The message it is promoting is that high labour cost countries (they also have examples in the USA and Germany) can be competitive even for some athletic footwear if automation is maximised.

Soling materials

As far as soling materials were concerned, the most telling point was the small number of exhibitors at only 15 compared with 25 in 2006 and, around 50 only four to five years ago. There was also only one working machine, a small two-station injection machine from Industrial Services processing TPR. The only other moulding equipment present was a PU mixing head and tanks (not operational) on the PU.MA Services stand. This is in stark contrast to five years ago when Main Group alone would have had around five machines operating in its own separate stand area plus, there would have been at least another 15 or so machines operating in the main hall.

Marketing initiatives by compounders

The trend towards re-focusing business was quite noticeable. Bayer MaterialScience has decided to continue the integration of its PU activities and, with effect from March 1 this year, to combine its entire global PU systems business under the umbrella brand of BaySystems. This affects not only existing product brands but also its global network of PU systems houses. For footwear, Bayer is basing its Global Footwear Competence Centre (GFCC) within its Polymer Research and Development Centre at the Jinqiao Industrial Processing Zone in Shanghai, where it will spearhead the development of advanced materials and provide technical support to the global industry.

Some two years ago, its competitor Elastogran Italia began work on a new

marketing approach to expand the market for PU in Europe by focusing on introducing its benefits to design students at footwear colleges. It asked what shoemakers really wanted and what materials designers would need in four to five years time.

To implement this strategy it is collaborating with the Ars Sutoria School through its new Elastogran Material Application Consulting (MAC) group, with technicians and researchers making presentations to students on the properties of PU and how best to exploit its advantages. The project has also attracted contacts from shoe and sole makers who have heard about it and want to become involved. The project is apparently making quite a difference as to how Elastogran now positions its PU business in Europe.

Dow Italia is also rethinking and refining the best way to offer its products to the industry. It intends to do so by exploiting the wide range of polymers it is able to provide for use in footwear. More details on this new initiative will appear over the next few months.

New products

For Huntsman, the major focus was again on the promotion of thermoplastic polyurethane (TPU) where it has introduced two new grades, Avalon AST and Avalon ABEP, aimed at high performance footwear. AST has been developed specifically for athletic shoes and, as a result of its semi cross-linked properties, offers significant performance benefits over standard TPU and vulcanised

New soling solutions from Huntsman



Mould and two Desma injection heads



rubber. The key advantage is improved thermal abrasion resistance that avoids scuff marks on indoor courts and maintains the integrity of the sole even at high friction temperatures. It is also said to offer improved barrel stability so that it does not degrade during mould changes or interruptions to the manufacturing process.

The injection moulding of standard TPU products can lead to significant flash formation, meaning soles have to be refinished at increased cost. To overcome this, ABEP has been specifically engineered so that the viscosity of the product increases as the temperature rises, slowing the flow into the mould and reducing the potential for flash to occur.

While as reported earlier, Klöckner Desma had no moulding machines on its stand, the company was again emphasising its ability to produce three colour and hardness TPU outsoles for safety footwear and high-end casuals. To

maintain a fast de-mould time, the first two materials are injected simultaneously into specific areas to provide the required performance. This is followed by a larger linking layer that again can be a different colour, hardness or density.

As well as increasing sales to its traditional Russian footwear market, Desma claims it is also bucking the general trend of shifting footwear production with good sales into Germany, Italy, Spain and the UK. These European sales are being driven by high specification moulding machines allied to an Amir automatic handling system to reduce labour costs.

After several years' absence, King Steel was again present at SIMAC, promoting its latest two-colour and two-hardness EVA foam injection machines, introduced in the middle of last year. Many branded producers of sandals and midsoles for sports shoes are using the ability to inject two different EVA materials

simultaneously into conventional EVA type moulds to produce more complex parts. For instance, sandal makers can produce harder wearing outsoles with a softer and more supportive part for contact with the foot. Sports shoe manufacturers can now offer more colourful midsoles in one moulding operation.

BGM continued the trend towards focusing on TPU as a soling material and has an advantage over Desma and Main Group in that its rotary table has a much higher clamping pressure as a result of its hydraulic system, compared with the pneumatic approach. This enables it to mould TPU as thinner units with better definition. However, it is still finding sales difficult as it lacks the integrated automation approach of Desma in Europe and is under-cut by local machinery manufacturers in places such as China.

Gus-bi, once so active in the footwear industry, is another company that is having to diversify and is now selling predominantly to the automotive and technical moulding industries with very flat sales into the footwear market. Speaking to *World Footwear*, one representative said he saw no future in the SIMAC show and was unsure whether the company would attend next year.

SIMAC has problems

This soling materials report has focused heavily on PUs—specifically TPU—as that was really all there was to be seen. Seven years ago it was possible to find 18 companies demonstrating their latest products in TPR, PVC and EVA. This year there were only two. Another indicator of the way the show may be going is that several soling material suppliers not showing at SIMAC had small stands in Lineapelle.

It is quite clear therefore that, for many exhibitors, SIMAC in its present format is now very much just a place to meet existing customers and not somewhere to demonstrate new equipment and ideas to potential customers. This year, it also clashed with Fimec in Brazil and several companies said they had put more effort into that show. To save costs most companies also had much smaller stands than in previous years and fewer people manning them. So, while SIMAC is still the premier European event for the supply side of the footwear industry, it will have to come up with some innovative ideas in order to survive. 

King Steel EVA machine

