

- [HOME](#)
- [BUYERS GUIDE](#)
- [USER RESOURCES](#)
- [THE VISION SHOW](#)
- [ASK THE EXPERTS](#)
- [ONLINE STORE](#)
- [EVENT CALENDAR](#)
- [MARKET DATA](#)
- [MACHINE VISION FORUM](#)
- [BUSINESS CONFERENCE](#)
- [ABOUT AIA](#)
- [LINKS](#)
- [SITE INFO](#)



[More News Articles Top](#) |

Vision Stuttgart October 04

Don Braggins, Machine Vision Systems Consultancy, UK
(Posted 12/02/2004)

This has to be a very personal overview of the Vision show in Stuttgart, Germany in October 2004. The reason it has to be personal is that after attending every one of the previous sixteen shows, this year I felt myself more involved in the show because I was asked to speak at a couple of the evening events associated with it. In fact I had been involved with the show, as a member of the jury selecting the winner of the annual Innovation prize offered by the organisers, since 2000. Initially I felt I was the 'token' non-German member, but the event has become substantially more international and this year Martin Waeny, a Swiss who divides his time these days between Northern Germany and the island of Madeira, joined the jury. Also, for the first time, the 'laudatum' speech explaining why the jury chose the winner was given in English, not German, by me. As it happened, the prize was won by Inos Automationssoftware, a company founded by Dr. Lambis Tassakos who is Greek but with companies in Stuttgart and Athens. I had seen the winning invention earlier in the year at the new 'Automatica' (Robots, Vision and Automation) biennial trade fair in Munich, and had the opportunity to discuss the invention with Dr. Tassakos there. Although the name of the company implies software, there is actually plenty of well engineered hardware in the innovation, a system for measuring large objects (detachable hard-tops for sports cars) to 0.1mm using multiple simultaneously triggered cameras without stopping the object to be measured. The system also uses low-thermal-expansion mounts and calibration artefacts, and triangulation sensors that can be replaced without adjusting their mounts, so there was plenty of good engineering as well as the software involvement. See http://www.inos-automation.de/news_e.htm for more about the prizewinner.

AIA's Networking Reception is scheduled for Wednesday November 9th, 2005 at Vision 2005



What of the show itself? A few weeks after the event I was able to ask their impressions of it from a small group of development engineers from Falcon Vision of Budapest, Hungary, who had attended for one day, and I must say that they echoed my thoughts – not much to excite one, just more pixels in cameras and more intelligent cameras. It is disappointing to have to make this observation, because it is an excellent and very well organised show and this year again numbers of visitors and of exhibitors were up, and every year it becomes more international (25% non-German visitors this year, up from 20% in 2003), and it is probably just a function of the growing maturity of vision technology that advances are becoming incremental rather than revolutionary. It is also perhaps a function of the fact that the majority of exhibitors at Stuttgart's Vision show are component suppliers rather than system suppliers, who are more in evidence at the 'Control' show in Sinsheim (just north of Stuttgart), and now at Automatica. The show organisers put the ratio at 78% components to 45% systems – obviously some exhibitors came into both categories.

Before considering the actual new products at the show, it must be said that after several lean years, European vision manufacturers are once again seeing very healthy markets for their products. We don't have too many publicly quoted vision companies based in Europe, but in an 'update' talk which I gave at the Automated Imaging Association (AIA) reception (which has become a much-appreciated regular feature of the event on the middle evening of the show), I was able to point out that, compared with the same periods in the previous year, sales by ISRA Vision were up 42%, forecasting 40% for the whole year – (although this probably included some growth by acquisitions), Basler Vision Systems up 67% and Components up 65%, and Belgian ICOS Vision Systems, serving the packaged semiconductor market, were up an astonishing 250%!

The mention of Basler prompts me to preface my next comment with the well-known TV adage 'Don't try this at home'. Their Arndt Bake explained Basler's development philosophy by telling us that a frog, if placed in too-hot water, immediately jumps out – but if you put it in cold water and gradually warm it up it does not jump out at the same temperature. His point was that products become obsolete gradually and there is no sudden realisation that they must be replaced – you have to consciously work on the task of innovation. He made the perfectly valid point that OEM customers don't change their choice of camera unless the new product offers the customer greater competitiveness, implying essentially the same performance for lower cost or better performance (of the customer's task) at not too great an increase in cost. Sounds obvious, but I'll never think about new product development without seeing a mental image of a frog in hot water!

A colleague in the UK Industrial Vision Association had briefed me that there would be an 8 Megapixel camera for machine vision unveiled at Vision, and sure enough the relatively new manufacturer Allied Vision Technologies was showing a whole 24-camera array of them giving a sort of zoetrope moving image of Oscar the fish – hence the series name following on from the Dolphin and Marlin series introduced in 2002 and 2003 respectively. Frank Grube, Managing Director, explained to me that AVT is committed to IEEE 1394 (Firewire) digital cameras for the present and foreseeable future, though like almost all other camera makers they are keeping an eye on the Gigabit Ethernet connectivity for vision. Although 8 Megapixels is impressive, the frame rate at just over 3 per second hardly puts the camera into mainstream machine vision territory. Its 3 and 5 Megapixel stable-mates are not much faster. By contrast, Basler launched a 4 Megapixel camera with an astonishing 96 FPS, though admittedly it has a CMOS sensor while the AVT Oscars are CCD.

A few years ago the Swiss CSEM Institute won the Vision Innovation prize for its LinLog CMOS sensor, with computer controlled gamma, capable of giving useful images from scenes incorporating extremes of light intensity. Photonfocus is a spin-off exploiting much of the CSEM know-how in very interesting and unusual cameras. One of these, announced at Stuttgart for availability in November, is a fast-tracking Megapixel camera with frame-to-frame camera control, multiple region-of-interest selection, and the LinLog capability. It is aimed at industrial tasks such as welding process or inspection, or PCB inspection where speed can be gained by only reading out relevant areas (unlike a CCD sensor where every pixel must be 'read' though not necessarily processed). This specialised camera was developed in conjunction with Silicon Software GmbH, a German company specialising in the use of FPGAs to speed up image processing tasks.

A newcomer to Vision, also making use of FPGAs in its range of framegrabbers, was the small Belgian company Seldes from Mons, the founders having gained a claimed 25 years of experience in image processing at two other well known Belgian vision companies. The name of their products, the Chameleon series, reflects their design philosophy – two FPGAs alternate at loading and processing, to give very effective real time image processing.

Another user of FPGAs, this time inside the cameras themselves, is Tattile from Brescia, Italy. For several years Tattile has had the largest exhibit space at Vision Stuttgart, always at the back of the hall. Until this year's event, Raymond Hegarty of their international

group based in Ireland explained, the company had been aiming at a relatively small number of potential customers requiring large quantities of custom vision products. This year, by contrast, although the size and location were the same, Tattile went out of their way to attract visitors by devoting a large part of the area to a working pizza oven and tables. The reason for this change of tactics is that Tattile is adding the supply of a wide range of vision components to its product range. These components include a comprehensive range of Gigabit Ethernet cameras, and some newly announced versions of these with internal processing using the FPGAs. While most suppliers are sitting on the sidelines waiting to see what happens about 'standardisation' of Gigabit Ethernet Tattile has taken the plunge and gone into production, initially motivated by the advantage offered by locating the relevant computer equipment outside the area of the cameras themselves, which in pharmaceutical plants (a major OEM sector for Tattile systems) need a high degree of environmental protection.

A latecomer to the event, not even listed in the catalog supplement, was the Israeli company appropriately named GigaLinx. They currently offer standalone framegrabbers taking Camera Link® or analog input with Gigabit Ethernet output, but happily forecast that these would be obsolete within a very few years, by which time GigaLinx hopes to have worked with many of the major camera manufacturers to build in the necessary outputs.

During the year the German sensor company SICK took a majority stake in Swedish company IVP which has been making CMOS sensors with on-chip processing for many years, and products incorporating them. A consequence of this was a change of name to SICK IVP, and a much-enhanced presence at the show. (SICK was formerly known by the name of its founder, Erwin Sick, who noticed the efficient retro-reflectors on American army trucks soon after the Second World War, and consequently founded his company making 'light curtain' safety barriers for factory machines.)

It is one of the unavoidable characteristics of optics that the shorter the focal length of a lens (which may make for compact design of a system), the worse the spherical aberration is likely to be. This means that something measured at the edge of the field of view will give a different result if measured at the centre. Pay more for a low aberration lens and this effect can be minimised but not eliminated. Matrix Vision (That's Matrix from Germany, not Matrox from Canada!) showed me some elegant software in their mvIMPACT modular suite which allows you to image a known rectangular grid and 'instantly' calibrate the corrections necessary to make the grid rectangular in memory. (Of course, unless you have a pixelated solid state display with no further image distortion, you cannot guarantee that the corrected image will look truly rectangular on the screen!)

The show is always an opportunity to meet old friends in the business, and this year was no exception. Mike Cyros had come over from America to help out his colleagues at Belgian Euresys for the show, and he proudly showed me what he confidently believed would be the only new analog-input framegrabber at the event. It is rather a special one, digitising 'everything' in the analog signal with ten bit resolution of gray levels, and is claimed to produce images with as good a quality as ones from digital-output cameras. Another old friend, who I had missed seeing for several years around the start of the millennium, was Rene Pluta of Philips CFT, with a range of intelligent cameras and 'no programming required' software. Philips has always been one of its own best customers and in the early days of the Vision show, when it was still in Sindelfingen just down the road from Stuttgart, Philips showed the very first 'single board image processor', known for years as SBIP.

In the space of this short article it has been impossible to mention all the other friends I met and interesting products I saw. Next year, the show will be at the slightly later date of 8th to 10th November, and not the earlier date originally announced which would have caused problems for numerous exhibitors because of shows in USA and UK.