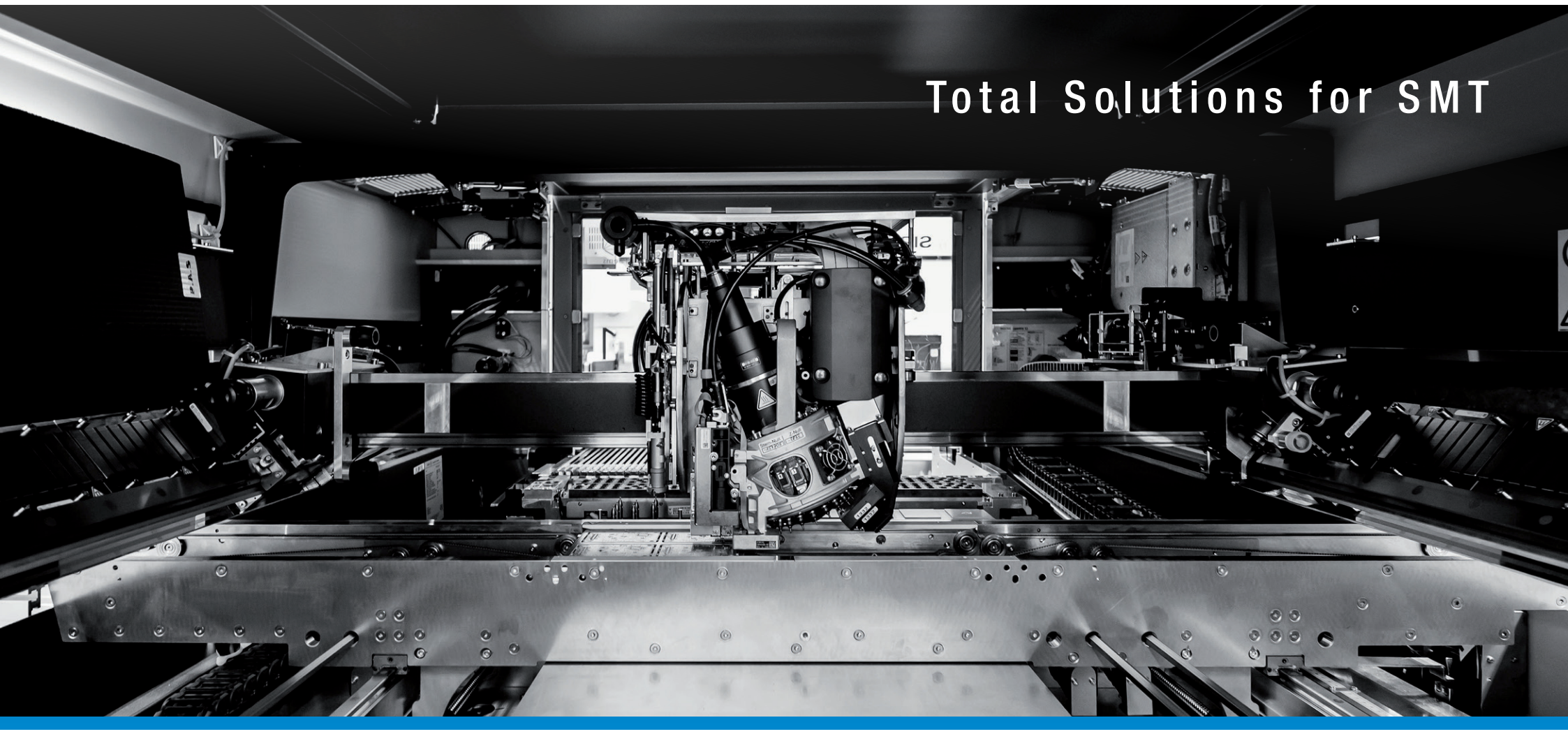
partnertec

Newsletter | November 2021



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productronica **November 16-19** · Munich

ASM Assembly Systems

GEN3 Precision as Standard

INDIUM CORPORATION

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MBtech

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teknek

TECHSPRAY

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ZESTRON High Precision Cleaning

Foreword

Dear reader,

I hope you had a great and relaxing holiday now that COVID-19 is more or less behind us and we can start enjoying our freedom again.

On the 25th of May we moved to our beautiful new facility in Eindhoven, which already showcases our next step to becoming Partnertec 2.0!

As I wrote earlier in my previous foreword to our Newsletter of April this year, the world was dominated by the pandemic that changed the way we live, work and interact. Businesses and the entire industry had to adapt to a new global situation.

In March 2020, many industries prepared to pull back in response to what was expected to be a significant blow to global and national economies. Many automotive and electronics companies decided to pause orders, including of semiconductors.

But COVID-19 had yet another important role to play in the shortage: user demand. Remote working during COVID-19 led to a demand for digital devices and services.

And so the pandemic hit the gas pedal on the accelerated pace of digitalization. Once industries realized that demand for their products had just temporarily stalled and was now actually accelerating, they needed to reverse their original planning. They prepared to go full steam ahead on new orders. But there was one tiny problem: chips!

It's now more than clear that the demand for semiconductors will continue to grow, the semiconductor industry will increase its capacity and we will keep innovating to fuel the digital future.

TSMC wants to develop 82 billion euros in production capacity over the next three years. This also applies to Intel, which wants to invest 16.5 billion euros in more capacity.

European countries are even more dependent on computer chips than America, which chips are mainly made in Asia. In 1990, 44% of all chips came from the EU. In 2020 it was only 20%. New factories must now also be built in Europe, but even these are not an instant solution to a global pressing problem. In other words: the global shortage of chips is far from over!

Unlike the E&A show in Utrecht, Productronica in Munich will continue as usual. However, there will be fewer exhibitors because the organization started too late in setting up the pitches.

Enjoy reading our Newsletter and I hope to see you again in November at Productronica after such a long time!

Maurits van der Laken
Managing Director Partnertec

Mek (Marantz Electronics) Launches ISO-Spector M2 Inline Full 3D Artificial Intelligence AOI

The ISO-Spector M2 is a new full 3D AOI system with Artificial Intelligence for high-end electronics assembly. A true, full range, no compromises,fast to program 3D AOI, ISO-Spector M2 features the electronics industry's highest hardware specifications and introduces an exceptionally convenient fast automatic programming method while achieving production ready inspection results with very short cycle times.

The ISO-Spector M2 AOI system builds on the bestselling Mek M1 AOI. Inspection performance and speed has been greatly improved while advancing previous levels of convenience and functionality. By adopting a completely redesigned chassis the M2 can accommodate larger boards, (510mm x 460mm / 20" x 18") including optional angular camera in a significantly smaller machine footprint. The newly developed conveyor system with pneumatic drives minimizes PCB transport, reducing handling times by 27%.

Hardware and software optimizations deliver 20% faster inspection times with the optical unit featuring high resolution 25MP camera with advanced lens optics, large FoV 69mm x 69mm (2.72" x 2.72") and 4x multi frequency Moiré projectors. With the optional 8 micron lens the system is able to reliably inspect 0201mm (008004") components and solder joints.

The programming of the ISO-Spector M2 is exceptionally fast, easy, and programmer-independent. Programming takes just half the time of the systems' predecessor thanks to changes to the way the data is imported and enhanced automatic component package recognition. ODB++ files can now be loaded in a single step. The Artificial Intelligence learns the production process values of assembled and reflowed PCB's and then recognizes defects based on hundreds of pre-set parameters. This isparticularly significant in the inspection of solder joints, which are typically the most difficult and time consuming to program in AOI's. Offline programming is possible. A new auto debugging function minimizes programmer intervention during production.

Smart factories demand that all systems in the production line are connected not only "horizontally" but also "vertically" through data management centers (servers, cloud etc.) and communicate with each other via MES or ERP systems, to improve operations. The ISO-Spector M2 integrates fully with Industry 4.0 specifications via the FIBER system for classification, repair, traceability and SPC and is compatible with integrated line management systems such as Panasonic iLNB and FUJI Nexim and Next-Gen Standards support like IPC-CFX and SEMI SMT-ELS, allowing users to analyze information from the inspection machine and entire production line to inform when to perform predictive maintenance.

All ISO-Spector M2 systems are equipped with sophisticated computer backup systems which guarantee that combined with the reliable, 100% Japanese built hardware, high volume production can continue without interruption.

mek® marantz electronics ltd

www.marantz-electronics.com

Indium12.8HF

MicroDispense and Jetting Solder Paste

Indium Corporation's Indium12.8HF jetting and micro dispense solder paste is a no-clean, halogen-free material specifically formulated to be compatible with a wide range of micro dispense and jetting systems. Inherently chemically compatible with Indium8.9HF solder paste, Indium12.8HF is optimized for long-term jetting and micro dispense applications. Indium12.8HF was originally formulated for micro-LED applications, but has proven to be useful in a wide range of applications requiring dot diameter/line width deposits down to 80µm. Indium12.8HF provides exceptional deposition performance, and its unique oxidation barrier promotes complete powder coalescence during reflow to eliminate graping and similar reflow issues.

Features

- Exceptional micro dispense and jetting performance
- Compatible with Indium8.9HF Solder Pastes series
- No-clean paste meets IPC J-STD-004B with Amendment 1 ROL0 requirements
- Exceptional electrical reliability – SIR and ECM exceed IPC standards
- Unique flux oxidation barrier promotes complete powder coalescence during reflow –Minimizes graping
- Clear residue with minimal flow-out
- Reduces head-in-pillow (HIP) defects
- Minimal reflow spatter compared to similar solder Pastes
- Variety of different alloys can be used, with Pb and Pb-Free
- Metal loading (ML) 78-85% by weight; ML can be varied depending on application and jetting/dispensing system
- Powder size IPJ-STD-005A; Type 5, 6, 6SG, 6SGS,7, 7SG
- Paste is available airlessly packaged in 10 or 30cc syringes
- Shelf life 3 month when stored <10°C

Standard Product Specifications

- Flux Classification ROL0, based on the testing required by IPC J-STD-004B with Amendment 1
- Halogen-free per IEC 61249-2-21 Test Method EN14582
- Conforms with all requirements from IPC J-STD-005A

Complementary Products

- Equipment Conditioner: PicoShot™ Conditioner C-1
- Rework Flux: TACFlux® 020B-RC
- Cored Wire: Core 230-RC
- Solder Paste: Indium8.9HF
- Tacky Flux: TACFlux® 089HF
- Wave Flux: WF-9945, WF-9958

Recommended Reflow Profile

Standard ramp-to-spike (linear) profile is preferred. The stated profile recommendations apply to most Pb-free alloys in the SnAgCu (SAC) alloy system, including SAC305 (96.5Sn/3.0Ag/0.5Cu). This can be used as a general guideline in establishing a reflow profile. Deviations from these recommendations are acceptable, and may be necessary, based on specific process requirements, including board size, thickness, and density. Reach out to our Technical Support team for specific reflow recommendations.

- Atmosphere – Nitrogen (<100ppm O2) will enhance reflow and wettability onto surfaces
- Preheat ramp rate – 1.8–2.2°C/second is typical
- Time above liquidus – 30–40 seconds
- Peak temperature – 235–245°C
- Ambient to peak – 2–3 minutes

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Pieter's Tips & Tricks

The importance of a good backup!

Whereas it used to be an engine, cable or card that became defective, nowadays the software is more and more frequently causing problems. We receive an increasing number of reports that the hard disk has crashed, and that there is no backup available, or only a strongly outdated backup.

In the past, software used to be a small package that was easily reinstalled. Nowadays, the software is rather complex, and there are many configuration files etc. needed to get the machine started again. In addition, the PC needs to be re-incorporated into the network, and be linked to all types of other software packages. Without a good backup this can take hours, and in some cases even days, before production is up and running again.

But a lot of production distress can be prevented with a little time and patience.

Our tip: Make backups regularly, preferably once a week for the programmes, and at least twice a year of the machine itself.

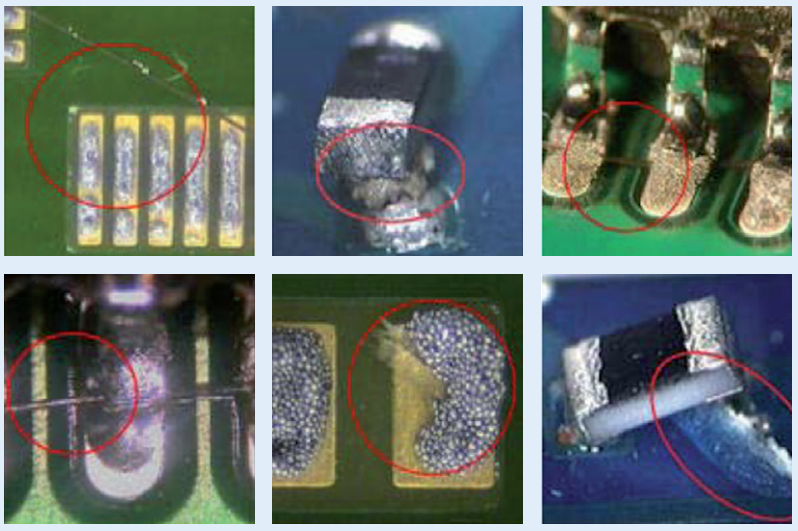
The best way to make a backup is to use a Ghost Image, together with a regular copy of the right folder files. The advantage is that if the hard disk has crashed, or the software has been corrupted, the operating system can be restored immediately. A backup is especially convenient for older machines running on XP or WIN7, because these systems are difficult to acquire these days.

Please contact us for assistance if you are unsure as to what exactly to include in your backup. Send an e-mail to *helpdesk@partnertec.nl* and state the type of machine and serial number.

We are ready to assist you!

Pieter Verheggen
Partnertec ServiceTeam

www.partnertec.nl



To clean or not to clean...

Part 1; before printing

If this is the question, the answer is simple, PCB's can't be too clean before entering your SMD line. We always wonder why companies invest in expensive advanced SMD lines including quality tools such as SPI and AOI equipment, but do not take care of the cleanliness of the incoming PCB's.

Anything attached to the surface of a PCB before entering the stencil printer will remain on that PCB and is a potential cause of trouble during and after the production process.

It's amazing how many fibres from PCB manufacturing can remain on the surface and how much dust and particles are collected in the warehouse or during previous manufacturing steps. Some contamination related defects found are:

- Blocked stencil apertures
- Poor solder wetting
- Short-circuiting
- Tombstoning
- Solder craters
- Solder joint reliability issues

Inline pre-assembly PCB cleaning equipment is available from 15.000 Euro and could save you a fortune on potential quality issues. So why takes the risk and let dirty PCB's enter your expensive SMD line?

Did you know that PCB cleaning prior to Stencil Printing has become the standard in Automotive Assembly? As you know this industry in continuously striving for Zero defects and First time right manufacturing.

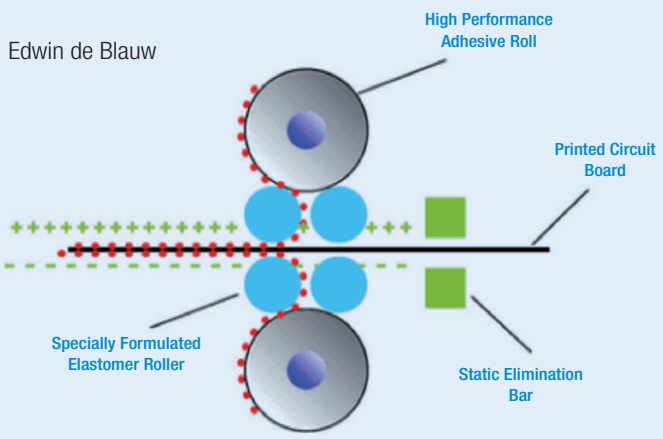
We recommend industry leading TEKNEK board cleaners. Contamination down to particle size 1 micron is easily wiped of using a patented elastomer roller system. Latest design rollers not only remove contamination but also dissipate Static Energy from your PCB surface. Collected particles are transferred to special adhesive rollers.

If you doubt about the cleanliness of your PCB's, we can perform a simple onsite test using a hand roller, based on the same cleaning technology. You might be shock about how much dirt is collected...!

Stay tuned, more information will follow soon about a brand new machine from TEKNEK.

Please contact us if you like to learn more!

Edwin de Blauw



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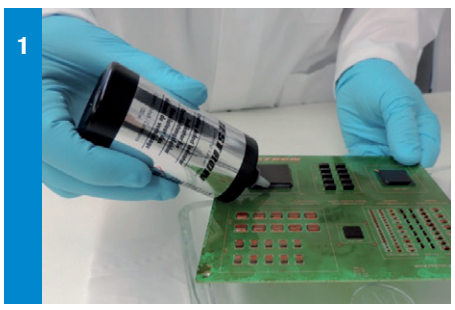
Chemical test for localized detection of protective coating layer defects on electronic assemblies

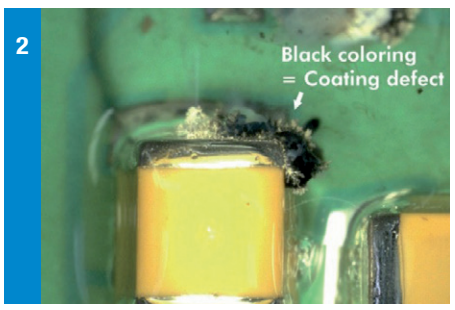
The reliability of protective PCB assembly coatings, with regard to climate and harmful gas safety, is essentially determined by the uniform application of the coating without interferences or gaps in the protective layer. In particular, common trouble areas such as solder joint edges and pore channels in coating pooling areas, when lacking a proper coating layer, have detrimental effects on the final board assembly.

The ZESTRON® Coating Layer Test utilizes a black colour reaction as a visual indicator of defects in the protective coating, even in the case of µ-coatings, adding standardized methods for coating thickness measurements with a rapid detection of defects in closed or dense coatings. The indicator liquid can also be used to check the readiness for solderability of components prior to soldering. Either application can be used during production for cost-effective sampling.

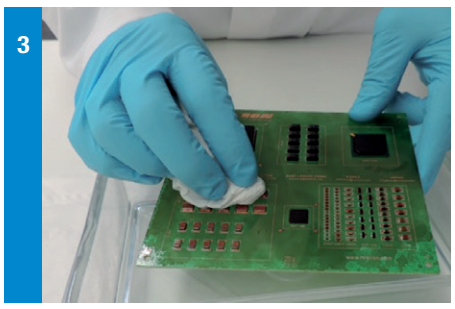
Simple test procedure in a few steps



Apply Applicator



Wait for max. 3 minutes for colour reaction



Rinse or dab off the indicator

Advantages Compared to other test methods

- Quick, easy and cost-effective method
- More precise than black light/ UV inspection → thinner layers detectable
- Test is part of the validation specifications of automotive OEMs
- Shows coating defect and missing edge covering
- Avoids expensive cutting in the event of edge covering problems
- Can be used as a test for solderability (especially for THT components)

Application Area

Coatings: Organic coatings / Classic solvent coatings, µ-coatings based on perfluorinated compounds and Parylene

Surfaces: Tin, Copper, Nickel, Nickel containing compounds and other less noble metals such as ferrite and alloys

The ZESTRON Coating layer Test includes the following accessories

- Zestron Coating Layer Test indicator
- DI-water bottle
- Gloves
- Times
- Application and interpretation instructions

ZESTRON
High Precision Cleaning

www.zestron.com

Back to normal...? A visit to ASM's Center of Competence in Munich

At the end of September I took a trip to ASM's Center of Competence in Munich together with one of our Dutch customers to demonstrate an ASM Siplace SMD line. Nothing special, you may think, but this was actually my first trip to Munich since Productronica 2019.

Due to all COVID-related restrictions, travelling became much more complicated. However, that did not stop the business, in fact the opposite happened and we have been busier than ever before. Luckily ASM adapted to the new situation very quickly and introduced modern online methods to demonstrate equipment and broadcast their unique solutions for the Integrated Smart Factory.

The team in the Center of Competence was very happy to meet customers again, but told us they have never been as busy as in the last 2 years, despite the fact that nobody was allowed to come to Munich.

Many webinars and online demos have been done and the online methods have rapidly innovated. In many cases it appeared that remote demos were more suitable for the job. Software features are easier to demonstrate while the audience is watching behind their own computers and more people can join in one session, without losing too much time and spending lots of money on travelling.

ASM has invested in very nice video broadcasting hardware and software tools, allowing the application engineers to show software screens, the interior and exterior of the machines, and the presenter simultaneously.

So we are sure this method of presentation will not disappear, and we challenge you and your team to contact us and experience an online visit to ASM's Center of Competence for a general or more specific demo. Or you can go straight online and sign up for one of the scheduled webinars, or request access to one of the presentations from last year: *www.asm-smt.com/en/competence-network/smt-center-of-competence*.

Being back in the Center of Competence after such a long time allowed us to touch and feel new innovations, such as the latest ASM DEK TQ high-speed printer, ASM's pick&place flagship Siplace TX2i, and the new generation of the ASM component storage tower. AGVs were driving around taking component reels from the new SMD tower to the kitting area and driving change-over tables to and from the P&P machines.

And ASM's close-loop process control system 'Process Expert', well-known for Solder Paste Inspection and printer optimizing, is now integrated with third-party AOI, all linked using the new IPC CFX communication protocol.

Many of these innovations will be shown at Productronica in November, so we hope to welcome you there or, if travelling is still difficult, in an online remote session.

But to be honest, the main thing I really missed was drinking a nice cold Bavarian beer in one of the beer gardens after a hard day's work. So it is great that some things are getting back to normal.

Edwin de Blauw,
Sales Manager at Partnertec

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Package Change Notification

As part of HumiSeal continuous improvement programme we are pleased to inform you that after extensive testing we will be moving to a new 5 and 20 litre containers for all conformal coating and thinners. The new package is a 4 or 6 layers polyamide based and has many distinct advantages such as improved product stability in storage and improved mechanical and environmental resilience, unlikely to damage in transit and will not oxidise in high humidity environments.

Main advantages:

- No damage, no dents
- No rust
- No tools needed to open/close
- Higher yield, reduced waste due to the advanced design
- Easy pour / anti-glug feature
- Improved pallet stack ability
- Reduce VOC emissions – lower permeability
- Lighter weight
- Improved storage space due to the rounded square shape.
- Recyclable

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Team Building Weekend:

Partnertec Wadje 2021

On the afternoon of Friday 17 September 2021, Team Partnertec (15 strong) travelled to Harlingen (Province of North Friesland), where we boarded the 40-metre-long Old Dutch clipper by the name of De Suydensee.

This impressive clipper was built in 1906, and was used to transport goods back then. From that location, we took an active sailing trip across one of the most unique seas worldwide, the Wadden Sea. The Wadden Sea became UNESCO world heritage in June 2009. The route brought us to one of the beautiful islands of the Wadden Sea: Terschelling. That is where we spent the night aboard the ship, and the next day we actively sailed back to Harlingen again. During the stay aboard, the team brainstormed about strategies and improvement processes.

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