



# vision



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There is a saying that you can do everything in a caravan but never at the same time.

Nevertheless, it would appear that tbp is ignoring this logic judging by all of its activities involving newly built premises, its relocation, new equipment, its acquisition of Alcatel-Lucent in Geel, increased turnover, the commercial operation of its auditorium, an opening party, open day, staff recruitment, the organisations of the Electronics & Automation trade fair, a newsletter and so forth, and it is doing all of this within a very short space of time. Time flies when you have none!

Ultimately, everything will - and must - turn out well. The market is *hot* at present and we can see a growing number of companies opting for production here in Western Europe instead of in low-cost countries. This is a positive development. Still, this sector of the market will need to develop further in terms of flexibility, a superior level of service, kanban, being lean and mean, and having short lead times and brief time to market following an NPI (new product introduction). At any rate we are constantly involved in self-development in order to achieve these objectives.

Proper preparations halve the workload - to quote another saying - and the acquisition of Alcatel-Lucent in Geel (Belgium), which will be called tbp electronics Belgium from now on, is supposed to help us continue along the rocky road to the top rather than a convenient, sealed road to the abyss!

Ton Plooy

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## Top player in the Benelux

*Great news was revealed in February: tbp electronics is spreading its wings in Belgium. By signing a so-called binding letter of intent, Alcatel-Lucent is selling its production facilities in Geel to tbp electronics bv. This will pave the way for further growth. It means that, in the same way that our Dutch operations have always done so for that matter, our Belgian office will be profiling itself predominantly as an electronics manufacturer for other organisations. Professionals refer to these activities as electronics manufacturing services (EMS). There is a rapidly growing demand for this. An increasing number of companies which use electronics in their products are no longer manufacturing them themselves but are outsourcing the assembly of printed circuit boards to businesses which specialise in this. The phenomenon of the fabled manufacturer is visibly growing.*

### Geel (B)

The plant in Geel, which initially served as a 'volume manufacturer' for its parent company, Alcatel-Lucent, has shown itself to be a successful EMS provider in recent years. Various large companies have their products manufactured in Geel. Anton Hermus, who has been the managing director of this facility since 2002, is enthusiastic about the switch: "Our external customers obtain high-tech solutions from us in both small quantities (prototyping) and large numbers of printed circuit boards. We have various

production lines with the most modern equipment, which are very flexible as a result. Almost anything is possible. We actually want to be the best in the market. Together with our Dutch colleagues we have a great deal of expertise in-house. Without exaggerating I can easily say that we can count ourselves amongst the best in our field." As it happens, this expertise is also shared with various scientific institutions and universities.

Anton explains that populating printed circuit boards is not the only activity in Geel. "Apart from manufacturing boards we also carry out modifications, repairs and upgrades. But it does not end there. We also assemble numerous cabinets in which electronics are housed. Think of communications equipment which is installed somewhere outside. We even make laptop computers. Take a look at the Tulip website ([www.tulip-ego.nl](http://www.tulip-ego.nl)). You will find rather exclusive models there ... made in Geel!"

Operations in Belgium have been incorporated into a new company called tbp electronics Belgium. While it is true that more than 300 employees will have a new employer, their existing terms of employment will not change, precisely like the situation in relation to manufacturing: the machinery will continue to operate. The current directors will continue to exercise responsibility but, thanks to a change in the shareholding structure, they have also acquired a stake in the company now.

In accordance with the terms and conditions of the letter of intent, Alcatel-Lucent will use tbp for activities relating to any new product introduction and/or as a pilot production facility and industrialisation centre for a period of at least three

years, even for somewhat larger volumes.

### Dirksland (NI)

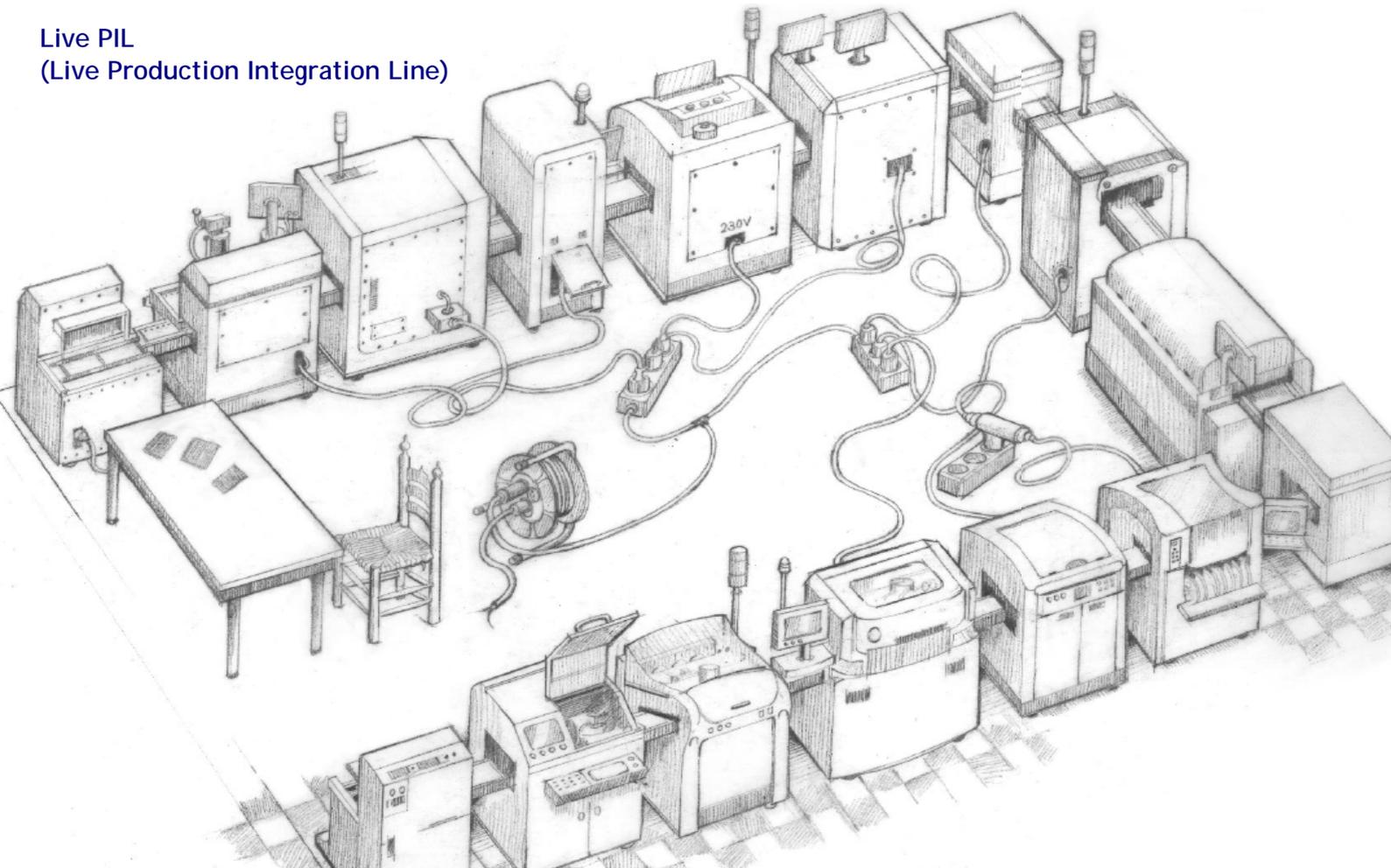
The founder and managing director of tbp electronics, Ton Plooy, is utterly satisfied with the expansion of his business in the form of this Belgian centre: "Actually, we discussed merging operations more than a year ago. We are moving in the same direction and would like to exploit the synergy that has been growing between the two businesses. When Alcatel-Lucent revealed that it wanted to sell its production facilities, I was enthusiastic immediately. After all, tbp's core business is a perfect match for the external mission of the plant in Geel. Together we will easily be able to exploit the market for professional applications."

Ton regards the take over as the retention of his business. He has this to say about it: "In addition, it is necessary for our business to expand, if we are focusing on the future. There are more players in the market and in this case you need to be competitive not only in terms of money but also with regard to expertise. You can only do this, if you combine your expertise. Our customers are benefiting from this and ultimately they determine our *raison d'être*."

The merger of Alcatel-Lucent and tbp electronics has given birth to one of the largest electronics manufacturers in the Benelux. Thanks to its complementary expertise and large degree of flexibility, the overall company is capable of anything: from prototyping (one or more identical items) to small or medium-scale production volumes.



Live PIL  
(Live Production Integration Line)



# A mini-plant at Electronics & Automation

*A mini-plant at a trade fair? Yes, of course! Visitors to the forthcoming Electronics & Automation trade fair (Utrecht, 23-25 May 2007) will get to see an operational assembly line for printed circuit boards, a production line which places all of the relevant electronic components on a printed circuit board and delivers a comprehensively tested final product. The organisers have dubbed it a Live PIL (production integration line), an example of professional expertise centred around collaboration. The final product will be one that will stir the imagination: a genuine electronic product, a wifi sniffer. The initiator and co-sponsor tpb electronics is anticipating a great deal of interest in this mini-plant.*



## **Collaboration indispensable**

Various machines, each of which will be responsible for a subsidiary task, will be operating in the production line that is to be built. There are various manufacturers who produce and supply machinery for this purpose. A total of about 15 suppliers will make a contribution to the Live PIL. Naturally, it is necessary that the various items closely complement each other in this respect. After all, proper coordination is required. It may be interesting to know that these suppliers compete with each other to some extent but will be acting as colleagues in this case. The construction of such a production line is specialist work. Ton van Galen will be acting as a consultant for this purpose. He will be responsible for directing matters, he will maintain contact with the suppliers, and he will ensure that all of the machines work together properly. There will not really be time for a trial run. The machines will be delivered just before the opening and will be set up to form a production line. The whole thing will simply have to work. As it happens, Ton is a familiar face at tbp electronics. He has previously provided advice in relation to structuring our production processes.

## **Standardisation**

As already mentioned, setting up such a production line will stand or fall on the machinery manufacturers' ability to make proper arrangements with each other in relation to both mechanical and electrical aspects. Fortunately, a great deal has already been achieved with regard to standardisation in this area.

For example, arrangements concerning dimensions and electrical operation have been approved by SMEMA (Surface Mount Equipment Manufacturers Association). The construction of a Live PIL in such a brief time span would have been inconceivable in the absence of such standardisation. As it happens, machinery purchasers also benefit from the existence of these standards. After all, they will be able to compare machines produced by different manufacturers closely with each other and combine them with machinery originating elsewhere, if necessary. This makes it possible to optimally structure any plant layout.

## **The production line**

Let us escort you on an imaginary tour of this illustration of a production line. We are assuming that you are familiar with a printed circuit board, a flat, usually green plastic board containing copper traces which serve as electrical wiring. These boards are manufactured elsewhere for the Live PIL and are kept in boxes. A loader will remove the boards one-by-one and send them to a printer to have text and anything else inscribed on them with the aid of a laser. This will be followed by the insertion of tiny dots of solder, which will later serve as an electric trace connecting wiring to components. The most common technology used for this purpose is etching, which is reminiscent of silk screen printing. The most modern technology is a solder jet machine, which operates in accordance with the principle of an inkjet printer. Solder is deposited where required instead of ink. Both

technologies are used in the production line.

An automatic inspection will be performed with the aid of a three-dimensional camera to check whether solder has been deposited in all relevant places. Following approval, the board will actually be populated. English speakers refer to this as pick and place. The various components, which are usually kept on a roll, will be removed one-by-one and will be positioned on the board. It goes without saying that this will need to be done very carefully and exceedingly accurately. Any movement of the board could cause components to shift, thereby producing an undesirable situation. Once the population process has been completed, the soldering process will occur in a reflow oven. Any connectors that are positioned later on or other components that are sensitive to temperature may be soldered selectively. After the soldering process another visual inspection will be conducted, which will be followed by an electrical test. Flying probes will be inserted at various points on the board to enable a testing program to determine whether all electrical signals have been connected. If it passes the test, another so-called functional test will be performed to determine whether our finished product also does this in practice. It will not be possible to see any post-production treatment, for example, the application of a weather-proof coating or the installation of casing around it. Any printed circuit boards which fail to make it to the end are normally collected and repaired where necessary.



### The final product

As a demonstration project the Live PIL will create a genuine product: a wifi sniffer. This is a handy device (which is not encased) that is designed to detect small transmitters which are used for wireless (computer) networks. When the sniffer approaches a transmitter, it detects a signal and a LED light burns. It is a nice little gadget, which will only be missing one thing: a power supply. A small button cell battery is used for this purpose. It can be inserted in the printed circuit board by hand. Simply stick it in and the device will be ready to use. Now you will be able to go sniffing around.



You will find tbp at their stands (8B018 and 8B021) right next to the Live PIL at the Electronics & Automation trade fair.

You are welcome to join us there, certainly during our happy hour in the tbp Grand Café on Thursday afternoon.

Surf to 'latest news' on our website, [www.tbp.nl](http://www.tbp.nl), to obtain your free tickets!



# Opening party new premises 12 January 2007



Mr Jan Franssen, the Royal Commissioner for the province of Zuid-Holland, officially opened the new building at Vlakbodem.



Carrie, the columnist, had the crowd in stitches with her Rotterdam humour.



The illusionist, George Parker, made it a magical day.

Peter Walschots created this colourful gift for Ton Plooy and Ineke Vis at the request of all of the staff of tbp electronics.





Bob Hutten (Hutten Exclusieve Catering) announced the delicious buffet dinner himself.



Surprise guest Anita Meijer produced an even more festive note.



Henny and Layla, the daughters of Ton and Ineke, presented them with a bicycle and gave a speech to the 500 guests!



## Assistance dog campaign

The *Help een hondje* [Help a Dog] campaign, which tbp electronics supports, seems to have met with success. Donations yielded a total of €10,000.00 for Stichting Hulphond Nederland. Do you remember what this is? The aim of this foundation is to train dogs to serve as special assistance dogs for people with a locomotive or auditory disability, or who suffer from epilepsy or a related condition. An assistance dog literally and figuratively opens doors which would otherwise remain closed to people with such a disability. It provides a great deal of practical help but the social and emotional benefits of such a dog should also not be underestimated.

A pup called Clever can be seen in the photograph. It was possible to sponsor him thanks to the donations received from our guests who attended a party to celebrate the opening of our new building in Dirksland. At the beginning of the year this labrador retriever was placed with a foster family for his 'basic training'. A specific training programme will follow after about a year. Then the dog will learn, amongst other things, how to put on and take off clothes, to place clothes in the washing machine and remove them from it, to loosen shoelaces, to use light switches and lift buttons, to open drawers and doors, and similar things. This training will be rounded off with a course for the dog and its future owner, to enable the animal to learn how to perform specific tasks. It would appear that Clever can look forward to a fine future.

As it happens donations are still welcome for Stichting Hulphond. Please make over your contribution to the account numbered 11.16.74.255 which is held in the name of 'help een hondje' in Dirksland (Rabobank, Goeree-Overflakkee). Also visit the website of Stichting Hulphond at [www.hulphond.nl](http://www.hulphond.nl).



Clever



# The auditorium: a prime venue for you?

tbp's new industrial premises in Dirksland not only house an office and production facilities but also an auditorium. The latter, which can accommodate about 100 people, is ideal for giving talks or presentations which include video and audio. Featuring a particularly splendid design, this auditorium is not only for our use but is also hired out.

You can use it if you need to hold a seminar or give a

business presentation. In this respect you can decide on a particular part of the day (morning, afternoon or evening) or a combination of parts. In addition to the auditorium, you will have a lobby (for breaks and so forth) at your disposal, as well as toilets, a cloakroom and the Grand Café, with or without comprehensive catering. In short, you will have everything you need to ensure that your meeting is successful. The

auditorium has a screen (2.6 x 3.47 metres), beamer, sound equipment and a lectern. As such, you will certainly not be without modern presentation tools.

If you would like to familiarise yourself with all relevant details, a brochure is available listing all alternatives and fees. Please contact Dana Wolters for any information you require by email at [info@tbp.nl](mailto:info@tbp.nl) or by telephone on (+31)187 602 744.



In addition, you can also use the stylish Grand Café with or without comprehensive catering.

Maximum number of seats in the auditorium: 102.  
A beamer and lectern with VGA and audio connectors is also available.



# Automated warehouse boosts efficiency

*Virtually every manufacturer has to contend with this: control the flow of goods in your company as effectively as possible. It goes without saying that the entire logistical process must closely address the specific requirements stipulated in this respect. We seem to have left behind the time of the familiar shelves.*

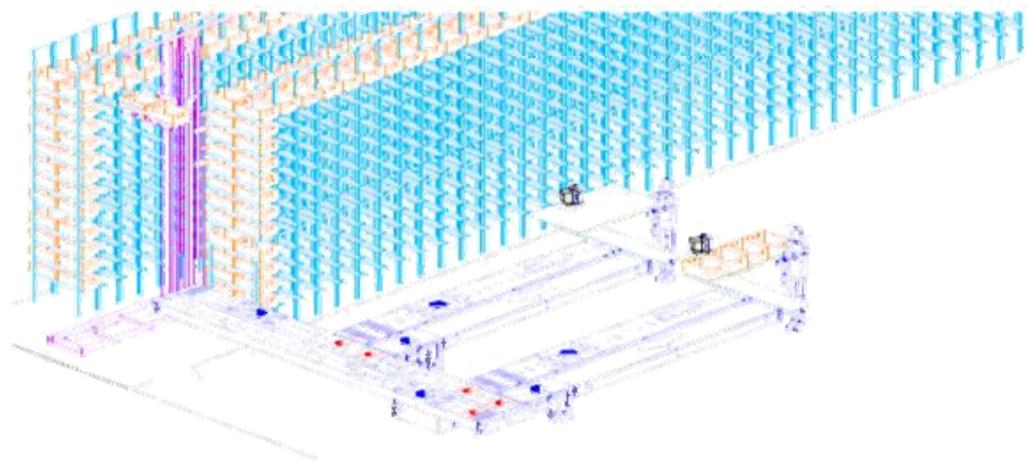
**Is the dustcoat about to disappear?**

Until recently it was quite normal to store products in racks or cupboards. If you needed a product, a warehouse assistant would collect it, or he would store it there, if it had to go in storage. There might have been a computer display to show him where to find the product.

Products were also stored in the same manner. Times have since changed. The layout of warehouses and the transportation of products (internally or otherwise) has become a science in itself. The company, Vanderlande Industries, is such a specialist company, which has developed a proposal for tbp electronics for the establishment of a new warehouse.

## **An automated storage system**

Allowances have already been made for this in our industrial premises in Dirksland. An automated stockkeeping system will be erected in a room of a little over 400 m<sup>2</sup>. This system will store all of the



components which are required to assemble products but will also have space for finished products. The system consists of two metal racking units between which a so-called mini-loader moves. This mini-loader, a crane with a hoisting mechanism and a load-bearing platform which moves between two warehouse racking units, manoeuvres plastic crates between positions on the racks and two loading points in response to instructions in the form of computer signals. Put another way, people can collect or place goods in a crate at two points, following which the storage process will occur completely automatically.

This method of storage offers several readily noticeable advantages. Space is used more efficiently, the chance of making a mistake when collecting and storing goods is greatly reduced, and fewer members of staff are required.

All of the components and products have been divided by type and placed in approximately 3,000 crates, which are made up of 2, 3, 4, 12, or 24 compartments. The dimensions of a crate are 40 cm x 60 cm and its height is 21.5 cm. Each compartment in a crate has a unique location code, thereby ensuring that it can always be traced. In practice this means that a



little more than 10,000 'stockkeeping units' are available. In view of the fact that these crates are used for the storage of materials (semiconductors) which are sensitive to static electricity, attention has also been devoted to the use of ESD-safe materials. Naturally, the entire mechanical installation complies with the guidelines

applicable in this respect. The operator - what used to be a warehouse assistant - follows the directions given on the display. In this respect the chance of making mistakes - for example, collecting the wrong component - is reduced as far as possible. Provision has been made for a capacity of approximately 100 routines per hour, more than enough to

accommodate production requirements. The system is managed with the aid of software (WMS - Warehouse Management System) which seamlessly interfaces with our ERP (Enterprise Resource Planning) system, Isah. The latter administers the procurement and production processes. The result is optimum coordination of stock management and production.

### The supplier

Vanderlande Industries' core business lies in improving business processes by supplying automated materials handling systems. The company has been active in this field for more than 55 years now. Almost half of its turnover is generated by the supply of baggage handling systems especially at airports. Schiphol Airport is one of their customers. Distribution (for example, chain store supply depots) account for one third of turnover, while the company's other operations involve express package delivery and services.

The company provides advice and solutions throughout the chain of logistical processes. It is therefore no wonder that its involvement frequently starts already before the construction of a new industrial building. After all, in such a case it is possible to design and create an ideal system.



**The mini-loader moves between racking units on both sides of it.**



# how do tbp electronics' customers view its expansion?

*Following the announcement that tbp electronics was looking forward to a substantial expansion of its capacity, the editor of Vision consulted several customers to hear their response. We would like to present their views for your attention.*



"The report of the expansion of tbp electronics with the addition of a production facility is one that I feel is positive," says Mr Leo Verhoeven of Delem. "Such an increase in its economies of scale will undoubtedly provide greater flexibility and that will benefit production lead time." This announcement has not come as a surprise to him. He had already noticed tbp electronics' desire for expansion. "The company has now become a major player in the market. I think that this will also benefit the competitive position which the company has adopted." [www.delem.nl](http://www.delem.nl)



Vincent Roorda of Arvoo finds it difficult to visualise the new situation. "I am not familiar with the Belgian office and can definitely not envisage what implications this will have for our company. Naturally, it is always difficult to make predictions but, if you are unfamiliar with the circumstances, there is nothing to be said. We have a very healthy relationship with tbp electronics and, whatever happens, I hope that this will continue to be the situation. I have absolutely no reason to doubt this." [www.arvoo.nl](http://www.arvoo.nl)



Mr Jacques Schellingerhout of Profound feels that the expansion of tbp electronics is a fantastic achievement, especially on the part of Ton Plooy. It is his crowning achievement. However, he hopes that our relationship will remain as it is now, based on equality. He appreciates this greatly. While he does not have any doubts in this respect, he has sometimes noticed that large(r) companies treat their customers differently. He does not readily see any immediate advantages for his company. "tbp does what we want and is capable of anything, certainly when it comes to technology. What else do you want?" [www.profound.nl](http://www.profound.nl)



Mr Paul Salomons of Medical Measurement Systems feels that reports concerning the expansion of tbp electronics represent a heightened risk factor with regard to business relations in the first instance. Large organisations rapidly become impersonal and this is also an obstacle to flexibility, according to him. However, he clearly sees the benefits: "Thanks to its size tbp electronics will be stronger in its relations with distributors. Larger procurement volumes amount to a stricter schedule of requirements, when it comes to price and delivery times, for example. As a customer we will certainly benefit from that." [www.mmsinternational.com](http://www.mmsinternational.com)



Mr Harold Vermeulen of PubliTronic has responded positively, although he hopes that existing relations will not suffer as a result. Here he is referring to the attention which tbp electronics devotes to smaller organisations. He certainly envisages benefits. Thanks to increased economies of scale, the logistical process could improve even more. This will in turn favour delivery times. "There is an added incentive to continue to offer customer the best technology. After all, more high-tech is capable of generating even better products (finished or otherwise)." [www.publitrionic.nl](http://www.publitrionic.nl)

