AUTUMN · 2019

CUSTOMER MAGAZINE OF DAREKON LTD

# DAREKON .net


## KLAUKKALA
**robotises enclosure production**

## TOSIBOX
**secures data communications**

## DIGITALISATION
**strides forward**

# DAREKON.net

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"Technical quality and reliability of deliveries are the most important things for the clients."

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## Sustainable development; wind and digitalisation

People are more aware of climate change and that guides our operations as well. The pressure for positive action often arises from individuals but it must also concern companies. They have to operate ethically and also work against climate change. Even if there is a lot of discussion about the values and ethics of companies, the question should really be about the people working in the companies. Their values determine the values of the company. They are making the decisions for the companies. And it is those companies that observe the values and interests of their community that will succeed in the future.

Darekon has made the decision to move to using 100 percent wind power. During the coming year digitalisation of our operating processes will reach a level where we are closer to eliminating the use of paper. We also observe environmental issues in meetings and travelling. Energy efficiency also guides our investment decisions: to do more with less.

The biggest resource at Darekon is its people. Continuous learning has been one of Darekon's most important values for a long time. That is the reason why year after year Darekon is able to develop and satisfy the needs of its clients and its wider community.

Darekon grows and develops. During the last fiscal year growth was more than 10 per cent. Partly in connection with this it was decided to move the operation at Darekon's Savonranta facility to Savonlinna city. This will enable the better development of the facility.

There are many uncertainties in the world economy presently and that also effects Darekon's operational environment. However, one thing is certain: that the wind will blow. In fair wind we will move forward with good speed and in foul wind we will tack when needed.

**Kai Orpo**

> "The biggest resource at Darekon is its people."

Image Photo


## The Savonlinna facility relocates and recruits

Darekon's manufacturing facility that has been in the village of Savonranta for a long time is relocating to Savonlinna city centre. The relocation is a carefully considered investment based on the need to attract more employees, enjoy better logistic services in the city and harness more space needed for strongly expanding production volumes.

At the technology centre Elektronia in the Laitaatsilta district of the city, a facility with over 2,000 square meters of space has been renovated for Darekon to move into. At Elektronia Darekon will have the opportunity to develop its cooperation with the vocational school Samiedu, and 3K-Factory of Electronics, part of Xamk University of Applied Sciences, located just next door.

Darekon is currently recruiting over 10 people in Savonlinna to increase staff numbers to 50. Production personnel and managers are being sought. Experience in the sector is an advantage but Darekon is also ready to train the right people. The facility has an order backlog running well into next year.

**Ilmastoneutraali**

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Täten todistetaan, että

**Darekon Oy Ltd**

**Ostaa 1.1.2020 – 31.12.2022**
**ilmastoneutraalia EPD®-sertifioitua tuulisähköä Vattenfall Oy:ltä**

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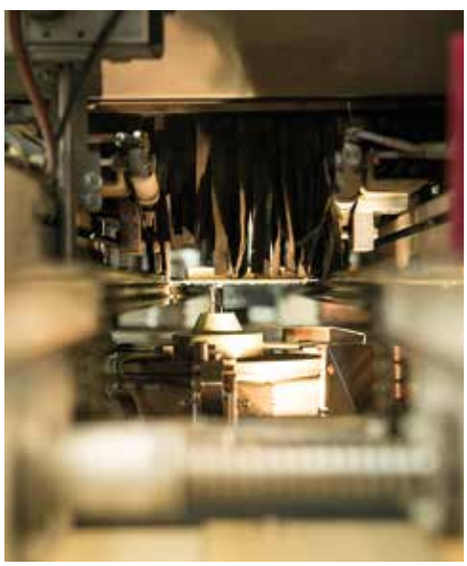
**Helsinki, 20.8.2019**
**Vattenfall Oy**

**Elina Kivioja**
Toimitusjohtaja Vattenfall Oy

VATTENFALL

## Darekon votes for compensated power

**DAREKON has decided to offset the greenhouse gas emissions from its energy supply by signing up to certificated schemes. Small levels of emissions during a life-time of energy production cannot be avoided. The emissions, however, can be compensated for. The power Darekon purchases is thus climate neutral.**



## Darekon is an inspiring European company

**THE LONDON stock exchange listed one thousand dynamic and inspiring European growth companies. The companies in the revenue range of 20–300 million euros are privately owned, they grow rapidly and are profitable in their sector. In Finland 19 companies besides Darekon were listed.**

**"SME companies are the backbone of the European economy," said Jyrki Katainen, European Commission vice-president, about the listing. "Thanks to dynamic and innovative, fast growing SME companies, the employment rate in Europe has reached a new record level."**

## Darekon is on a clear growth path

**DAREKON'S revenue in 2018 grew 10 percent and reached 47.6 million euros. The profit was 3.7 million euros and equity ratio 44 percent. The number of employees was 291 on average.**

**Darekon met its expectations in 2018. The favourable development has continued during the current year and profitability has been on the same level as before. The budgeted revenue in 2019 is more than 50 million euros.**

**During the first half of the current year the sales and contract tenders have developed as expected.**

**During the year there has been considerable investment in robotics, electronics manufacturing equipment and developing digital systems.**

## Electronics industry is doing well in Finland

# DAREKON PROSPERS THANKS TO ITS SATISFIED CLIENTS

According to the Etla (The Research Institute of the Finnish Economy) industry review published in the spring, the electronics industry is growing again in Finland. At Darekon this was visible in last year's strong growth. The most important thing, however, is that client satisfaction has improved to a really high level for Darekon.

The electronics industry in Finland is clearly developing better than in other EU countries. In Finland production in the industry grew 7 percent in January–March since last year. At the same time production in Germany decreased by 2 percent and 0.4 percent on average in the EU. The export order backlog value at the beginning of the year increased as much as 18 percent since last year, a thing that has even surprised the professionals monitoring the statistics.

### A strong improvement in client satisfaction

Darekon's revenue grew 10 percent from the previous year and the growth continues to be stable. As clients grow, it is clear that the contract manufacturer also has more to do. This more rapid growth rate tells the story that the business has been managed well and that our clients are satisfied.

"We measure client satisfaction regularly and we have reached good results," says **Kai Orpo**, managing director of Darekon. "Clients buy, old clients remain and grow, and at the same time we also gain new clients."

"Our latest client satisfaction survey is from November–December 2018 and it is favourably comparable with the survey from 2016. The most terrific change has happened in the NPS index (Net Promoter Score) that has taken off from a previous level of 14 to as much as 45. At the same time 58 percent of clients believe that their acquisitions from us will grow, while last time 49 percent believed so."

The limit values of the NPS index are +100 to -100, so numeric changes can of course be quite big.

When the clients were asked to name the two most important things affecting their loyalty to Darekon, the technical quality of services, reliability of deliveries and positive experiences stood out from the comments. The location of the company, sales activity and even price level remained in smaller roles.

### Consistent development and client focus

In the answers to open questions asked by the survey, the words "quality" and "flexibility" stood out clearly.

Darekon has grown but the growth has been steady and never pursued as an isolated goal. A contract manufacturer always operates between two fires as price, quality and flexibility have to be reconciled. Darekon, however, has managed to solve this equation successfully.

Darekon's four manufacturing facilities operate relatively independently but are very well reconciled. A versatile service portfolio has also helped in expanding the client base, which previously had been relatively centralised. A business divided across various industries, including both small and large clients, reduces the risk of changes in economic trends.

"The client relationship is above all a partnership and nowadays completely transparent," continues Orpo. "Darekon has managed to keep its promises and gained a good reputation. The importance of a good reputation cannot be overestimated."

"In the survey we also asked what the clients think about the contact staff and representatives of various companies. 51 percent of the answers held the opinion that Darekon's contact personnel are the best or among the best." ■

Veikko Ylimartimo (on the right) and Jarno Limnéll think in a very similar way about how to develop Tosibox.

SideLight

Tosibox secures data communications

# DAREKON MANUFACTURES TOP QUALITY EQUIPMENT FOR FLUENT DATA COMMUNICATIONS

Tosibox has been known for years for its solutions that enable an extremely simple way of setting up an absolutely safe connection between computer systems, even between different parts of the world. Darekon has manufactured Tosibox's demanding equipment for two years.

Tosibox, founded in 2011, now operates in a period of strong development and expansion. With revenue growth at a rate of 30–50 percent per year, its products are being used in more than 120 countries. The company has more than 80 patents around the world and places a strong emphasis on product development.

### Secure data communications was too difficult

**Veikko Ylimartimo**, founder of Tosibox, has had a long career in responsible ICT roles with a network equipment manufacturer, telecommunications operator and as a private ICT consultant. He has thoroughly examined remote communication issues and seen the challenges and difficulties in the field.

"When working with an operator I tried to work in a way that our clients could have safe, remote connections easily," says Ylimartimo. "The whole sector was, however, unstructured and many various solutions, equipment and technologies were used. Every time a connection was needed, we were facing a different situation."

"Later when working as an ICT manager for a building automation equipment manufacturer, I developed secure ways of communication for the equipment, considered communication models and in the role of a buyer negotiated with operators about how to apply various technologies for remote communications. My career as an employee gave me an exceptionally educated background on these issues. I saw the field and also developed functions 'from three sides of the table': as a buyer, a service provider and an equipment manufacturer."

"Before founding the company I even worked as a private consultant helping companies to get remote connections with their own remote equipment. In this job I once visited the same company for a third time to solve the same data communications problem. Exactly the same problem, only different equipment and a different environment. This made me think that things could be made easier."

According to Ylimartimo, at that time, around 2009 and 2010, remote connections were often built with the lowest fence and data security was neglected. When security was neglected, many things appeared to be easier, but the result could be catastrophic. When security was taken care of, things were more difficult since each environment was different and so were the equipment and connections. If you had built these connections, you would understand how it was.


Tosibox's vision is international success and 100 million euros turnover.


In Barcelona Tosibox won the winning award among 400 companies from 70 countries.

> Cooperation with Darekon has been absolutely good.”

### Simple – when one sees it

Once Ylimartimo was travelling from Oulu to Helsinki by aeroplane and they had to wait in the plane for a while before take-off. He describes the incident in his relaxed personal way:

“I was sitting towards the front of the plane and saw that the cockpit door was open. I figured I could go and ask if I could make myself a little bit acquainted with the pilots’ world. The captain welcomed me as there was still time to wait. I then looked at the eternity of knobs, blinking digital lights and all possible gauges and gadgets.”

“‘This is a completely outrageous environment, how can you manage here?’ I asked the captain. ‘Oh yeah, that’s a good question,’ said the captain.”

“I then returned to my place and we took off. How simple, but how much complicated technology the cockpit contained. I wondered how we could make remote connections as easy for those who need them. One wouldn’t need to be an IT engineer and know how to configure to make connections function. One should be able to productise this the same way as flying has been productised.”

“This is where the idea came from. I started thinking and when we landed in Helsinki, I had the principle of a plan in my head ready for the solution. I knew I could solve the problem.”

### Lock and key in different parts of the world

After that trip Ylimartimo stepped aside from his consultant business and concentrated on taking his idea forward. After half a year the basic idea for the system was together.

The basis for this was physical devices; a lock and a key. When put into use, the key is plugged into the USB connector of the lock. Devices exchange identification information and security codes, set up a pair, and the system is ready for use.

The lock is connected to the system to be controlled, which can then be taken to the other end of the world. The user plugs the key into his or her terminal, the lock and the key find each other through the Internet and set up a VPN connection, a virtual private network. Secure connection is then ready.

“Everything started with a physical connection, with security in the background,” tells Ylimartimo. “When pairing the devices is done in a physical connection, nobody can interfere. That was the first basic principle but of course we have advanced a long way from that.”

### But how can the devices find each other?

“This is the patented technology and some of it can of course be read in the patent documents,” answers Ylimartimo. “Of course I don’t want to open it completely, but that is one of the big principles of this solution. In the background we have the technology that takes care of the devices finding each other. There are of course other things involved besides these devices and if there were not, this would have been copied ages ago.”

When Ylimartimo then started to apply for a patent for the invention, the first thing the patent agent said was that


**The Tosibox product family consist of various physical lock devices, a key the size of a USB stick, and software products to set up a secure connection through the Internet between systems.**

**Tosibox in numbers:**

| | |
|---|---|
| 80,000+ | delivered systems |
| 2011 | Tosibox Oy was founded in Oulu |
| 123 | countries that Tosibox is used in |
| 24 | countries covered with patents |
| 89 | global patents |
| 29 | countries with sales network |
| 3 | daughter companies; USA, Germany and the Nordic countries |

it is not possible to patent this kind of an invention. According to the agent the invention was from the era of "grandma and grandpa." The application was, however, taken forward and now the invention has more than 80 patents around the world.

"It was 'from the era of grandma and grandpa' but an invention or a thing doesn't always have to be complicated. The most simple idea is usually the best," states Ylimartimo.

### Aim at one hundred million euro turnover

"The technology is one thing but at the same time we are a strongly developing company," adds **Jarno Limnéll**, managing director of Tosibox, to the discussion. "Naturally we develop products, services and technology continuously, but at the same time we develop the company's internal processes, marketing and international sales network very actively. Besides developing the technology – that is essential for us – there are big shifts and expansion taking place in all sectors of the company."

Jarno Limnéll has a background as a military officer, he has a PhD in war science and moved to civilian life some ten years ago. During his career he has worked both in business and the academic world and been strongly involved in cyber matters and security issues.

"I have been with Tosibox now for about a year and I think in a very similar way to Ylimartimo," continues Limnéll. "The managers of our key fields and our partners will have to be top professionals in their areas. This involves marketing, production, technology and everything else."

"Our operation and our development is now in very good shape and the future looks very interesting. We are in strong expansion in Europe and have also started well in the USA, which we expect to become a really remarkable market for us. There is a lot to do but we have a strong belief and view – and plans – to make this into an, at least, one hundred million euro company."

### A demanding product in a small space for Darekon

"We made an agreement with Darekon at the beginning of 2017," says Ylimartimo. "We started a bidding round when the plans of our new flagship product, Tosibox Lock 500, were advanced enough that it was possible to start looking for a manufacturer for the heart of our device."

According to Ylimartimo, there were many companies bidding. Darekon was not the cheapest, but its price-quality ratio was the most convincing. Darekon is, according to Ylimartimo, also of a suitable size to be Tosibox's partner. Also the connection during discussions was good from the very beginning.

"Cooperation with Darekon has been absolutely good," says Ylimartimo. "Everything has gone according to plan and we have no word of complaint."

"The product is of course demanding, it has many components in a small space and a multi layer board. There is a wireless Wi-Fi, two LTE modems, digital I/O and a large data throughput for this size of a device. When we add everything together, the device is rather demanding to manufacture. We trust in Darekon's operation and they acquire the components and base boards, select suppliers and take care of quality control."

There were, according to Ylimartimo, manufacturing candidates from Europe and also from China. China would have been cheaper but Ylimartimo waved the flag for domestic production. The price difference was, however, not very big either. Tosibox Lock 500 is now a 100 percent totally Finnish-made product. Even the aluminium cast enclosure is made in Finland.

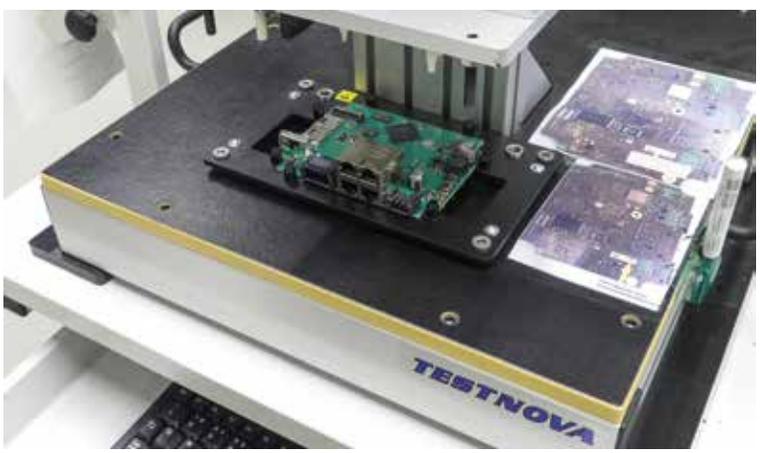
### Simple and flexible cooperation

"Our cooperation with Tosibox has been very positive," says **Ilmari Haho**, key account manager at Darekon. "We started with a proto series and have moved to full production speed. Everything has gone fluently and cooperation is easy. If there have been questions on the way, they have been taken care of immediately together. We both try to be flexible, that makes things work."

Printed circuit boards are manufactured at the Darekon Haapavesi manufacturing facility. In the surface-mount device line (SMD) there is an automated optical inspection system (AOI) integrated, which operates based on three-dimensional machine vision. The machine aims eight light beams on the examined board and reads the resulting reflections with a precision camera. The camera measures height differences of less than 10 micrometers ($\mu$m) on the board. This creates reliable information on soldering quality.

After assembly the software is loaded on the boards and they move into individual electrical testing. The testing is functional so the flawlessness of all the various functions of the boards are tested.

"The Tosibox boards are designed well and in the design they have observed manufacturability and testability," says Haho. "This is essential for fluent and flawless manufacturing of the products. With Tosibox we have succeeded in this respect." ■




Tosibox boards go through individual electrical test at Darekon.

Tested boards waiting to continue to assembly.

Cuvaya

## Portal solutions, electric collaboration, communication between systems

# DIGITALISATION TODAY AND IN THE FUTURE

Darekon continuously improves its abilities to respond to digital challenges as part of its strategy. The focus is, above all, about communication that makes cooperation easier and reduces expenses. Yet digitalisation is a process that continuously moves forward.

Order routines, demand information, forecasting, delivery time information, warehouse reports... There is continuous debate between the supplier and the client and the relevant information needs to be easy to access and correct. Most companies have this same dialogue with both their suppliers and their clients.

### Portal or integrated system

"Information between ourselves and the client takes place through different channels than previously," says **Pertti Mäkinen**, IT manager at Darekon. "We are using several different – mainly digital – collaboration tools i.e. tools used for objective cooperation."

"Clients and suppliers have very different readiness and we often work with very different projects so the tools have to be chosen according to the situation and need. Ordinary e-mail is used often enough and an Excel spread sheet may fulfil the needs for reporting."

With some clients Darekon is using a portal solution, i.e. a system used with a web browser, which communicates with the client's ERP system (Enterprise Resource Planning). However, the system administrator, in Mäkinen's opinion, longs for a scheme where the computer systems of both parties can communicate directly with each other.

The integration is, however, complicated by the inadequacy of communication standards. If these standards were complete, integration would be easy. The information must be unambiguous and

for computers it is not without rules in the background.

### Digijump, Industry 4.0 and artificial intelligence

"The digijump often includes completely unnecessary fluff," continues Mäkinen. "In school the high-school graduate's maths examination is one example. The examination computer system is so complicated that time has to be spent learning the system."

"I hope the objectives of Industry 4.0 will cohere, make operation clearer, more productive and safer. The basic content of I 4.0 is that it makes the whole chain so transparent that one can observe the chain at any point and see as far as needed. This can't work if the whole chain doesn't work."

"Many people are talking about artificial intelligence in connection with I 4.0. The question, however, is about programming, which of course can include learning structures."

"I am pretty sceptical about A.I. How mature is the information society? The users must understand how to utilise it. Human understanding doesn't always keep pace. We have, for instance, had Office-based programs for decades and 90 percent of users know 20 percent of its possibilities. Those that are further along with A.I. deal with it with an open mind but with suitable precaution."

### Mutual partnership is fundamental

In Mäkinen's opinion digitalisation is not always what people imagine and wish for. Somebody has at some time built a system and assumes the thing works – and nobody is interested in it after that. Society is not yet ready and integration is difficult because of that. One must know both systems and their user interfaces.

"One must have their feet on the ground about what digitalisation means on a practical level," says Mäkinen. "At partner level both parties take things forward together. Reducing expenses is a common target, but continuous bargaining doesn't lead to the desired result. We want to be a top performer and many quality issues have a price tag. They must have some pay-back time."

"One of our most important visions is that we want to be prepared. When we find out together that the client has a need, we will answer the challenge. The content of the contract is one challenging issue, when we give the client a view into our system. We can't give the client the possibility of directly steering our production. The final target is a transparent value chain, but we have to have control of the chain."

According to Mäkinen, Darekon can offer various solutions according to the extent of the relationship and depending on the client's needs and wishes. Tailored solutions are also possible when one must, for instance, separately follow the situation with critical or EOL (End Of Line) components.

Both parties benefit from improved customer service, commitment and reduced expenses. Its easier to handle any needs the client has reported, components and sub assemblies are required less in stock and lean production will reach better levels.

### Digitalisation is a journey of improvement

"Not all businesses will see what benefits digitalisation could give them," says Mäkinen. "Transparent stock levels for both components and completed products, order base reports – that should be reconciled from time to time – order confirmations and delivery time reports. All that information is necessary."

"We are also developing a value added service: Life Cycle Control. Many companies are using old designs even if the product still has life cycle in front of it. We can, for instance, forward to the client LTB (Last Time Buy) announcements and if needed give an ECR (Engineering Change Request). This allows the possibility of preparing for the future in good time, and control the risks better. This is a paid, value-added service."

"Development is a process and different parties have very different levels of readiness to come along. Darekon wants to be a leading operator and realise benefits in cooperation. In this we have been able to proceed with big steps yet of course the journey continues." ■

> "One must have their feet on the ground about what digitalisation means."

Cuvaya

## Supply Chain Director

# TEPPO PITKÄNEN IS IN HIS OWN FIELD

Teppo, originally from Lappeenranta, was taken on by Darekon in 2013 along with the firm Apelec, when Darekon acquired the company. This inquisitive man puts effort into learning new things and aims to do everything he does as well as he can.

The first impression of Teppo is that he is slightly withdrawn, but on deeper acquaintance a sympathetic and versatile person is revealed; an interesting person to get to know.

### Work life during the worst recession

Teppo, who has just chalked up 51 years, spent the first 18 years of his life in Lappeenranta and then moved, after his military service, to Varkaus to study. In December 1992 he graduated as an automation engineer at the Walter Ahlström technical college, in the middle of the worst recession. The competent man, however, found a job very quickly.

Alektro Oy was an electronics contract manufacturer that also made product designs. Teppo was hired as a designer at the company. The next year the company was split in two as Pertti Mäkinen founded AP-Elektroniikka Oy and acquired the subcontracting business from Alektro as the basis of his firm. Teppo stayed in the design department until he moved in late 1996 to a sales job at Avnet Nortec.

In 1999 Mäkinen phoned Teppo and asked him to join AP-Elektroniikka. A contract was agreed and Teppo became a partner, responsible for sourcing and certain specific clients. Along the way the name of the company was changed to Apelec and Darekon subsequently acquired all the shares of the company in 2013.

### Interesting work and good relations

“At the beginning I was responsible for certain clients at Darekon, but two years ago I was able to concentrate purely on developing sourcing,” says Teppo. “I have also studied while working. In 2009 I completed an MBA, with managing sourcing as the main theme, and in 2015 I graduated as an MSc in industrial engineering and management. The master’s thesis was about optimising working capital in sourcing. I carried out both examinations at LUT (Lappeenranta Technical University). That sure was a tough task alongside a job.”

Teppo has had a guitar in his hands since he was a young man.

> I don't find myself ambitious."

"I don't find myself ambitious, but when I do something, I try to do it well. The motive for my studies has above all been curiosity. One can and one must learn something new. The brain stays more brisk. I also read a lot – work literature but also novels – everything variably."

Teppo says that he feels he is in his own field. His career has provided a lot of interesting work, where situations change daily – even if his job description has been the same for a long time. The work has also brought a huge experience of good personal relations, both with suppliers and clients. In spite of digitalisation, he finds that things are taken care of by and between people.

Teppo is responsible for sourcing at Darekon and has six people at the firm's Haapavesi facility, four in Poland, three at Klaukkala and one at Savonlinna, in a matrix organisation. Teppo's tasks are mainly managing the sourcing chain, making sourcing agreements and developing the whole sourcing operation.

## Exercise and closeness with nature

Fit and slim, Teppo takes care of his shape, playing badminton and floorball every week. The family's Australian shepherd dog also requires exercise and Teppo likes jogging with his four-legged friend.

His detached home and a summerhouse also fill his spare time, since there is always some maintenance job to do. His weekend plans after our interview on a summer Friday afternoon are clear: to go to the summerhouse to chop firewood.

"If it happens that there is nothing else to do, I will go trolling pike-perch at the summerhouse, which is located in Luumäki, by lake Kivijärvi," continues Teppo. "I use five rods and troll in the evening when the pike-perch come near the surface. In a week we will have a summer party for my wife's relatives and there is still a lot to do, so I probably won't have time to go on the lake."

## Music and certain freedoms are important

"Human relations are important, of course. And a certain freedom, to be able to decide how to spend one's time. At Darekon I appreciate that I can develop the operation according to my own ideas. Nature, fishing and spending time at the summerhouse are also important. I could spend the whole summer there and work remotely."

Teppo's family includes a wife and a daughter of 16 years and a son of 17. Teppo is teaching his son to drive at the moment. Music is important for both Teppo and his children. Teppo has played piano and guitar since he was a child. Even if he no longer has quite so much time to play, he has a sound-insulated music room at home with drums, electric drums and two guitars.

"Music has always had a big role in my life and I listen to it a lot," says Teppo. "With my son we have a similar musical taste and we often go to concerts together, sometimes even abroad. Some time ago we went to Norway to listen to a concert by the American band Foo Fighters. Last autumn I went to Munich to a concert by the British Biffy Clyro band. It is a favourite band for my son and I."

"My daughter has played piano for almost ten years and she has an electric piano in her own room. All in all we have a good connection with our kids, even if now in their teenage they hate the summerhouse. Maybe after ten years they will drive us out of there to take over – who knows?"

## Close contact with the family

Teppo says he met his wife at the beginning of the 1990s and they have been together ever since. Jogging with his wife is a nice way to spend his time and the dog of course can't be left behind – and sometimes friends will come along too. The National park of Sipoonkorpi and Luke's forests in Tuusula are some of his favourite areas for forest walks.

"We live in Nikinmäki and my wife works as a child-minder in a nearby kindergarten. The kindergarten was built exactly when her maternity leave finished and the job was handy to find. My mother lives in the same neighbourhood so she has helped us with the children and nowadays we give and get help from one another."

"My father and sister still live in Lappeenranta and I have strong bonds there. It is nice to go and have a cup of coffee at the harbour market square in the summer." ■


Cuvaya

## DAREKON MANUFACTURES INDIVIDUAL CABINETS AND

# TAILOR MADE ENCLOSURES

The Darekon manufacturing facility in Klaukkala has invested in robots, welding technology and the production of silicon seals. The technology in use makes it possible to use various cabinet materials and manufacture seals meeting the highest demands.

When you look out of the window, you will probably see many different enclosures and cabinets that often contain electrical and telecommunication technology and electronics. The enclosures have to be firm, tight and appropriately realised.

### Mechanical parts and final assembly

The Klaukkala facility has traditionally manufactured sheet metal parts for the clients' products with its sheet metal handling systems and other machines. The parts are used in final assemblies where the mechanical parts and electronics from the other Darekon facilities are assembled in Klaukkala to final, complete products.

The need for enclosures and cabinets intended for outside use has increased so they decided in Klaukkala to invest in state of the art technology to produce them. After a tense product development phase the facility is now manufacturing individual metal enclosures and cabinets for various purposes.

An individual enclosure or cabinet is often a better or only alternative compared to standard products on the market. Measurements, manufacturing material and furnishing can be selected precisely according to needs and in most cases the total expenses are considerably lower than with a standard solution.

### Freedom to materials with welding technology

The clients often want to manufacture enclosures for outside use with stainless steel or aluminium. For inside use ordinary steel can also be used. This sets certain demands for welding technology.

The welding station consists of a Fanuc robot handling the welding nozzle and a rotating table turning the enclosure blank according to the welding's progress. Welding is made with a Fronius welding machine that represents the world's state of the art technology in sheet metal welding. Stainless steel for instance "pulls" strongly because of heat. The CMT (Cool Metal Technology) used by Fronius almost completely eliminates this, as the welded part heats up only very little.

"Our welding station can weld 'anything'," says **Timo Valtonen**, production manager at Darekon's Klaukkala facility. "1.2 millimeter stainless steel and two millimeter aluminium are very typical materials. Fronius' pulsed welding technology is especially suitable for aluminium and stainless steel."

"When acquiring the system we made examples and welding tests with different manufacturers. The Fronius welding laboratory had six cells – one for each major robot supplier – and we ended up with Fronius and Fanuc. The welding speed is almost incomprehensible, the robot drags the seam several times faster than a human and the quality is excellent. Need for grinding is minimal."

## Technically superior seals

A silicon seal extruded on the lid to be sealed is technically a superior way of realising sealing enclosures and cabinets. A seal extruded of two-component silicon mass is in many ways better than a glued seal or a seal extruded of polyurethane.

Silicon is non-flammable, its sealing ability is excellent and it has a long lifetime. Plastic and rubber seals get old and become brittle much faster. Silicon seal also tolerates extreme cold and hot. It is important that a silicon seal doesn't absorb water and so freeze. Polyurethane seals absorb humidity, freeze in cold and then often tear when the lid is opened.

"The Sonderhoff system we are using differs from the more commonly used in that we are instead of a linear table using a Fanuc arm robot," continues Valtonen. "The extrusion nozzle is fixed and the robot moves the part under it. The arm robot makes it possible to make seals also on multifaceted seams."

"Sonderhoff Fermasil silicon seal sticks very well on the surface to be sealed. There are seal masses of many various properties available, according to viscosity, final hardness and many other properties. According to need, seals with various thickness can be produced by varying movement speed and the distance of the nozzle from the surface."

"Extruded seal can not be made manually so an automated system is the only alternative. In Finland there are a few companies making extruded polyurethane seals. The properties of a silicon seal are superior compared to them and according to our knowledge there is only one other company besides Darekon in the Nordic Countries manufacturing extruded silicon seals with the same technology."

## Design assistance when needed

Darekon manufactures many enclosures in which the basic structure and structure of the edge sealing with the lid are always identical. The size of the enclosure can, however, be scaled very freely, in length, width and height. The seal is extruded on the lid.

"We can design enclosures according to the clients' needs or modify existing designs," says Valtonen. "We have the CAD programs and ability to use them in-house. Thanks to our long experience we can also suggest good solutions, suitable inner parts and cabling design. In a 3D model we can examine the structure of the enclosure already before making physical parts."

"Essential in designing mechanical structures is good manufacturability. DFMA analysis (Design for Manufacturability and Assembly) is a natural part of our designs. To the client this means a product that can be utilised the best way and an economical total solution." ■


**A robot drags a seam with an almost incomprehensible speed and with very high quality.**

**An extruded silicon seal is in many ways superior compared to polyurethane seals.**

**Robotised enclosure production makes manufacturing individual enclosures economical.**

# DAREKON RELOCATES FROM SAVONRANTA TO SAVONLINNA

## Prerequisites for operating at a higher level

In August the renovation of the new premises was still in full swing. New walls and electricity were built and floors will have a new ESD mat, which Kimmo Turtiainen is displaying.

To move a 40-person electronics manufacturing facility 50 kilometers is not a small operation. After careful consideration Darekon came up with a solution that is best for its personnel, clients, other stakeholders and the operation of the whole unit.

Savonranta, with just over 1,000 inhabitants, was merged with the town of Savonlinna ten years ago. Migration loss and an ageing population now means finding employees for Darekon's manufacturing facility started to become overwhelmingly difficult. At the same time logistic services to the area decreased.

### It was not possible to continue in Savonranta

"We wanted to continue the operation of our well-running and established unit, even if the prerequisites for operation were getting too difficult," says **Kai Orpo**, CEO at Darekon Oy. "By relocating to Savonlinna city it was possible for us to guarantee jobs for our staff."

"We have good and competent personnel, some of whom have been with the company for decades. In Savonlinna the operation is easier to manage, logistic connections are functional, cooperation with stakeholders is essentially easier and there are good prerequisites for recruiting new personnel. The premises in the city are also good and allow flexibility for expansion."

An assumption of the relocation was, according to Orpo, that all the staff would move to the new premises. There was no need for

**Elektroniikan 3K-tehdas has many pieces of equipment and services that Darekon can use. In the lefthand image Harri Reinikainen presents a selective soldering machine that is the latest acquisition at the plant. In the middle there is a handmade "directional antenna" for testing radio interference and on the right Reinikainen and project engineer Henri Montonen examine a printed circuit board with the X-ray machine.**

redundancy and everybody was offered a job. About half of the staff lives in Savonranta area and half somewhere else — many of them in Savonlinna city. To some the commuting distance got longer, for some much shorter. The end result was, that 95 percent of the staff continue in the new location, only two quit.

## Electronics know-how in Laitaatsilta

The Elektronia technology centre is based next to Savonlinna town centre, in Laitaatsilta. It has a long tradition in the electronics industry. Darekon used to have a small unit on the premises which was given up some ten years ago.

Now the company has found a building with just over 2,000 square meters that is entirely suited as a manufacturing centre for Darekon. Both the old building in Savonranta and the new facility are owned by Savonlinnan Yritystilat Oy (a city owned real estate company) so the negotiations for transferring the lease were straightforward and easily managed.

"We have had a close cooperation for a long time with the vocational school Samiedu and moving to the city makes it much easier," says **Kimmo Turtiainen**, Darekon's Savonlinna plant manager. "Educational cooperation with Samiedu has functioned well, we have offered training positions to students and been able to get new competent employees this way. The distance between us has always been a challenge and now with our relocation the problem is removed."

"The focus of our operation will change slightly, as we will now concentrate more on the final assembly of products, managing customers and distributing products to final customers. For a long time we have delivered products directly to our clients' customers and this is a strong part of our operation. In the new premises it is also possible to flexibly expand into more, warm, warehouse space. We think it will be needed since manufacturing work for large-sized products has been growing."

## Cooperation with Elektroniikan 3K-tehdas to increase

Within the Elektronia facility a department of Xamk, the Southeast Finland technical college, operates, known as Elektroniikan 3K-tehdas (or Electronics 3K-factory). Darekon has had flexible cooperation with them for a long time.

"Darekon's relocation is a very good thing for us," says **Hannu Leinonen**, plant manager at 3K-tehdas. "In Elektronia we do product development, testing and small scale production, especially prototypes. We also train people and arrange, for instance, tailored courses for manufacturing staff. Operating in the same building as Darekon makes it possible to increase our cooperation."

**Harri Reinikainen**, production manager at Elektroniikan 3K-tehdas, describes the many production, test equipment and service possibilities of the compact factory.

"A selective soldering machine is our latest acquisition that replaces manual soldering in many cases," says Reinikainen. "We will also have a new component placement machine later this year. We have an X-ray machine that can make X-ray photos of even large boards. With the X-ray we can for instance analyse the functioning of the manufacturing process of challenging boards. It is also in many situations an excellent tool for quality assurance and troubleshooting."

Reinikainen also presents a handsome EMC test chamber they have built themselves at the facility. It can be used for testing radio frequency interferences of various electrical devices such as industrial electronics, computers and power supplies.

**Elmar Bernhardt**, testing and design manager at 3K-tehdas, explains that the test chamber is like a directional antenna and the cone shape of the chamber directs the radiation from the device being tested to the receiver at the tip of the cone. Other test equipment includes a vibration tester that is like a big loudspeaker – just without the cone – together with two weather chambers and many smaller testing tools.

## Advantage for the city in the long run

"It is easy to understand Darekon's decision to relocate its manufacturing facility from Savonranta to Savonlinna city," says **Heikki Kokki**, CEO at Savonlinnan Yritystilat Oy. "Relocating the whole facility is a big project for a company and it was done only after thorough consideration and for good reasons."

"We are satisfied that Darekon wants to continue its operation in Savonlinna and I believe that the city centre is for several reasons a better operational environment for them than Savonranta. In the Elektronia facility there is currently forming a real concentration for the electronics industry. It is certainly useful for both Darekon and the other companies operating in the facility."

"I believe and hope that Darekon will grow and prosper in its new location and create new jobs in Savonlinna. It is an important and positive thing for Savonlinna city." ■


More options for a big client

# PRODUCTION VOLUME FOR EKE-ELECTRONICS IS FAST EXPANDING

> We have nothing but positive things to say about Darekon's relocation."

EKE-Electronics is a world leader in integrated IP based intelligent train automation and train management systems. The company designs, develops and manufactures control, information and communication systems for trains – EKE-Trainnet systems – that improve train safety, travelling comfort and operation efficiency.

### Relocation solves the worries

"EKE-Electronics is the biggest client at Darekon's Savonlinna facility and we are growing very rapidly at the moment," says **Ari Lokka**, supply chain director at EKE-Electronics. "We have nothing but positive things to say about Darekon's relocation."

"During the years I have observed the Savonranta facility's challenges in recruiting, expanding the premises and managing the logistics. Everything has gone well but Savonranta is a migration loss area, commuting distance is long for many people and the area isn't developing, so it doesn't tempt people to move there. Savonlinna city opens a completely new dimension in recruiting personnel and managing logistics – in Savonranta the transport company truck only visited a couple of times a week."

"The third thing, at least for us, is the considerably increased production volume and thus need for more space. Responding to this would soon have been a challenge for Darekon. Relocating to Savonlinna solves all these three issues we have been considering."

### Let's travel sustainably by train

EKE-Trainnet systems has a history of more than 30 years and it has a strong position all over the world. The firm started in cooperation with VR (the Finnish national railroad company) and first deliveries were made in 1987. Today tens of thousands of EKE-Trainnet systems are used in tens of countries on all continents.

"Our production volume has increased by at least 50 percent since last year and for the next year the same 50 percent expansion is expected," continues Lokka. "One can say the volume has doubled or tripled since a couple of years back. In Savonranta we would have run out of space but now everything is fine."

The only issue Lokka thinks still remains is that of flight connections to Savonlinna. The city is not a growth area so what will happen to the airport? There has been early discussions about closing it. During the opera festival it will, of course, be in operation but EKE-Electronics needs flight connections all year.

As a solution Lokka states that there is of course a train connection to Savonlinna. Since the firm works in the rail industry it may be best to use the train service in the future. ■

## Grand speeches and fancy words or real deeds?

# HOW IS A CLIENT WON?

Does the client have a need for our services and do those needs match our production capabilities? Could we possibly cooperate and develop that into a partnership? The client relationship can't be forced and every solution must begin with open discussion.

All of us unfortunately recognise the aggressive telemarketers and, particularly older people in the countryside, have met the sales people that sell things such as eave gutters or well washing or today's favourite products, solar panels. They often have a hidden agenda and the consumer is vulnerable. In business between companies the situation is much better.

### How to find a new client?

"Every company is looking for new clients but it is not always so easy," says **Petri Kettunen**, sales director at Darekon Oy. "It is always a question of needs and matching them. It is usually easy to set up a meeting and then it is good to find out at the very beginning if a possibility to cooperate can be seen. The meeting will then be shorter or longer."

"If a possibility can be found, then we start assembling the puzzle. Several people will participate and look for ways to realise the possible cooperation – how to work together. There is a unique solution for each client, always individual, arising from the client's situation, products and needs."

"I often ask straight out, what is the client's situation, are they happy with their current agreements or is an improvement needed. I ask about products and present a possible model of how things with us might operate. In many cases I can present some reference that is in some way comparative with their situation. Would they be interested in similar ways of operating?"

### A friend's hint or client's initiative

In Kettunen's opinion it is better if the client is the initiator or they are in a position to receive Darekon's suggestion. With most of them there have been previous discussions but there are exceptions.

"Before the holidays I was in a meeting with a client and aside the good conversation he asked if I know of a workshop that has started using electronics," says Kettunen. "I phoned the workshop immediately after the meeting and managed to set up a meeting with them the next morning. After a quarter of an hour's discussion the client was willing to see our manufacturing facilities on the spot."

"In another case I received a call from a client to whom we have quoted every now and then over the years but never had any business with. Now they have had some changes and the caller asked if we are interested in cooperation."

### Why does the client choose us?

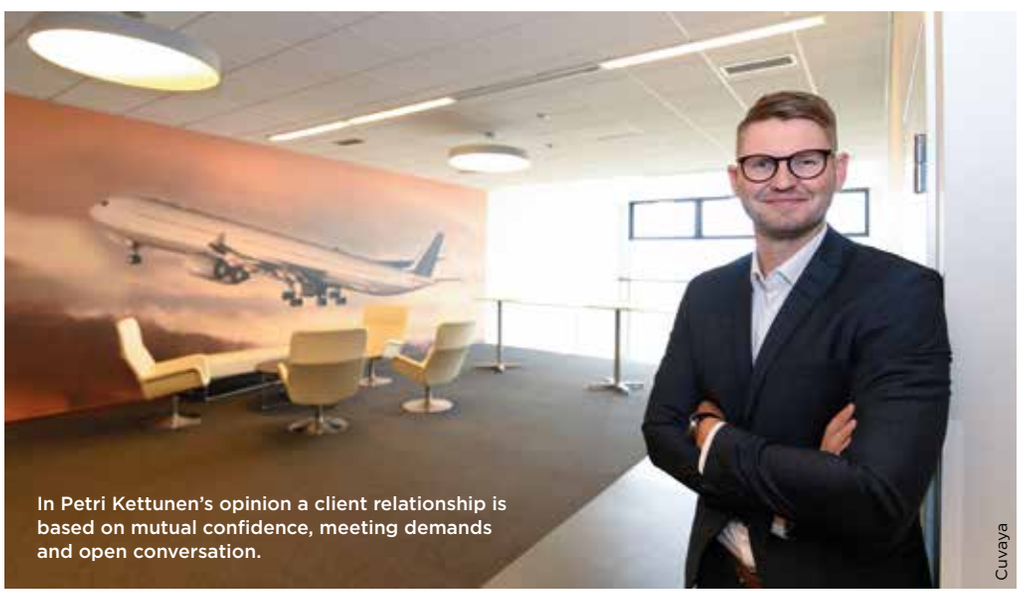
In the discussion with a potential new client there must be some "beef", as Kettunen puts it. The traditional line of "we are customer oriented" just isn't enough. Darekon of course has four manufacturing facilities, readiness to offer box build entirety together with lifetime services, from a five board proto series to thousands of units in production, but mere facts are not always enough.

"It is a big decision on whose sled to jump," says Kettunen. "The buyer has a lot in the game if he or she makes the wrong choice. It is better for everybody that demand and supply meet. The sales person also has responsibilities. I dare to tell the client quite frankly if some other solution than us would, in my opinion, be better for them."

"If the client's needs are very small, I may recommend – with a name – some supplier that is concentrated on small and quick deliveries. I recently made a Pareto analysis of our clients and found out that 20 percent of the clients bring 87 percent of the revenue. One must not make the tail any longer, preferably shorter."

"Darekon's most important competitive advantages are reliability and flexibility. We keep to what we promise and live together with the client both up and downhill. We always try to find a solution together and play a team game."

"Logistics are essential! If one resistor is missing, the product doesn't move anywhere. People are even more important! Everybody at Darekon making clients' products is sure to do his or her best — using up to date tools." ■



In Petri Kettunen's opinion a client relationship is based on mutual confidence, meeting demands and open conversation.

Cuvaya

# Sustainable business – sustainable development

ISO 9001
ISO 13485
ISO 14001

Contract manufacturing of medical equipment and industrial electronics. Continuous development with the customer at the heart, digitalisation and sustainability are the signs on Darekon's road as a contract manufacturer.

Profitable growth for almost 35 years has been possible because the customer has always been number one. Motivated staff, versatile services and comprehensive quality management system help us to operate economically, flexibly and proactively.

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