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Modern technical documentation adds security and forms the company brand **p. 8** Plant Design is like completing a Jigsaw Puzzle **p. 11**



HOME OF ENGINEERING & EXPERTISE



3D SCANNING was used to design the sorting plant for Nordkalk. 3D scanning brings reliability to the design and it speeds up both the design and installation phase.

Dometal from South Western Finland has a strong growth rate. Resources are devoted to the core of the business which is in designing and manufacturing high quality agricultural machinery.



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WE WANTED to provide our clients with a modern documentation process and flexibility by introducing DITA Content Management System (CMS).

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Pulling and staying factors

EDITORIA

he year 2020 has started off on a positive note for the Comatec Group. We have sold our expertise in both Finland and abroad. And most importantly, after a cautious economic forecast that marked the end of 2019, the contracts we secured are long term, multi-year projects. This puts pressure on us as an employer to develop positively. Based on a good reputation, attractiveness as an employers and competitiveness amongst the job seekers, when competition for talent is fierce for the company means to match it.

At the Comatec Group, we believe in longer term work and well-being basics rather than cashing in on quick winnings. In addition to the pull factors, we are also talking about the staying factors. The things that make our staff want to come to Comatec and stay with us long term. We have around one third of our staff have been with us for over 10 years.

This valuable expertise especially in the field of engineering and metal, international operating environment together with clients with their interesting work projects, cooperation with educational institutions, and investing in the growth of the company along with developing employees skills are a strong factor for building the company's reputation.

With this foundation of rewarding work and employment, continuous leadership investment and a good workplace atmosphere. Alongside, investing in understanding and leveraging technological change as a part of our business environment, we are ready to continue building on this attractive workplace.

Not all factors are in your own hands, but the ongoing collective agreements also affects what the employer needs to consider. The potential absence of the extended working hours contracts, the renewed organisation of working time, the limits of that working time flexibility affects the way the employer builds itself. We have been fortunate enough not to be subject to strike actions during the negotiations and have negotiated with good faith with the union representatives.

However, we still have a task to do. Studies and reports from health organisations at work tell us the harsh facts. Fatigue at working and increasing absenteeism due to mental health issues are a reality today. We have not noticed a rise of these diagnoses and the sickness absence rate is moderately below 2%. However, we are aware of the growing problem and are working to ensure that the workload and the means to manage that workload are in order.

There are many explanatory factors, but one important factor is the impact of the emotional atmosphere in the workplace on people's commitment, energy and wellbeing. A positive internal employer image and employee experience of their own work does not require miracle, it is based on employer-employee relationships, affirmation, mutual trust and appreciation. This is the very basics in which we will continue to invest in.

When the internal image of the employer is rebuilt in terms of well being and pull factors, we are well on our way to building an external employer image that is attractive.

Tampere, February 2020.

Marja Semi HR Director Comatec Group

Maja Seuri

Dometal has strong roots in soil

THE BACKGROUND OF DOMETAL

Dometal is a family-owned company founded in 1997 which manufactures high-quality agricultural machinery in Loimaa, Finland. The company is now owned by the CEO and three brothers whose father established an agricultural machine workshop in the 1980's. The company has strong roots in agriculture.

The company has grown considerably both organically and from acquisitions. It's consolidated turnover this year will be around 18 million euros with approximately 100 employees. The growth continues to strengthen as the company has made significant acquisitions in recent years. In 2013, Potila Tuotanto was acquired from Kiikoinen, which now has another factory. In 2015, the seed drilling machine business of Vieskan Metalli was acuired, so recently the focus has been on developing a new generation of seed drilling machines.

CEREX 400

Thanks to its agricultural background, the company's

Dometal from South Western Finland has a strong growth rate. Resources are devoted to the core of the business which is in designing and manufacturing high quality agricultural machinery. Dometal invests heavily in not only product development and testing but also in modern production technology such as robotics. The company's business strategy is always to provide the customer with a modern, high-quality and competitive solution made from the best available materials. Supporting services such as documentation, technical calculations and risk management rely on the partnership with Comatec.

TEXT Taina Syrjänen **PHOTOS** Dometal and Taina Syrjänen

product development is very practical. The products and solutions can be tested in their own fields because many of the employees and owners are also farmers.

Dometal's CEO **Mikko Mäkimattila** is also a partner who brought his expertise in exports. Dometal currently exports to 20 countries which accounts to about half the production. Harrows and seed drilling machinery are the main product featuring technology that stands out from the competition. It also has clear export potential. Dometal has a distributor in Finland and a subsidiary in Hungary. The other countries of operation have importers and resellers.



ometal has grown from a million in turnover to nearly 20 million euros over a 20-year period. In recent

years, there has been brand renewal, acquisitions and new machines launched.

"The company tries to function with a small number of employees, we multitask a lot. In the last few years, we have made a couple of major acquisitions, renewed our brand and additionally we launched our next generation of seed drills last September. These have effectively employed our small group of staff. After a short breather, the next projects are already in sight," says **Vesa Mäkelä**, Dometal's Product Development Manager.

Following the acquisition of the seed drilling business from Vieskan Metalli, development investments have been recently focusing on seed drills where we see a large potential for growth

A SEED DRILLING MACHINE IS A COMPLEX TECHNICAL MACHINE

There are many types of seed drilling machines available from simple, mechanically operated machine to a highly technical, fully electric seed and fertiliser adjusting machine.

"We have a basic seed drilling machine that is as mechanical as possible, which has no electricity besides the lights. The other extreme is where the machine is fully controlled and automated electronically. At best, data is collected from the field and saved to a virtual cloud space which allows the amount of fertiliser and seeds to be adjusted," says Vesa.

"Farmers sows between 30 to 40 cycles throughout their working life. So you need to invest a lot in sowing seeds as the success of the farm depends on it."

"Of course, the success of the harvest is based on several other factors of which sowing is only one part. Crop production, fertilization, harvesting and weather conditions are all contributors to success," explains Vesa.

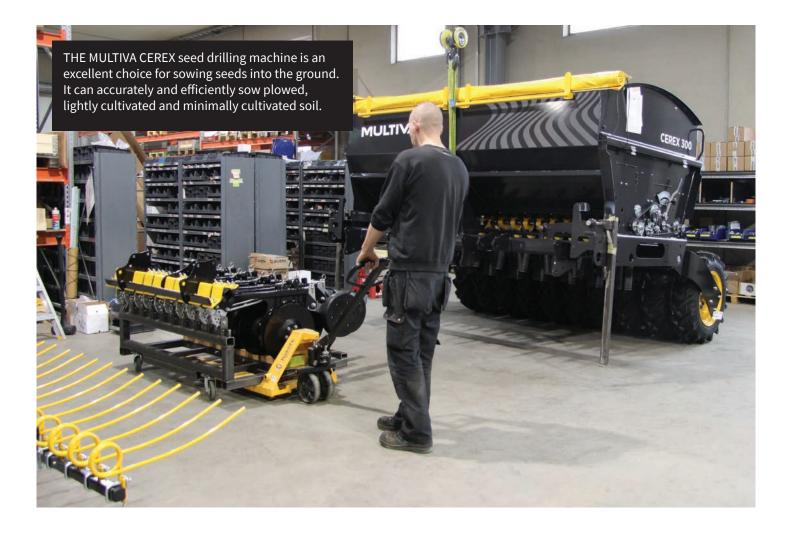
"Our Multiva Method ensures that sowing is successful. In addition to the seed drills, other Multiva products also include tilling machines and trailers. We have the expertise to design a machine and a practical perspective on it because we are famers ourselves – and so are many of our employees," Vesa added.

"We can test the machines on our own fields. We are not only designing machines that can successfully sow but we are developing a cultivation method."

"In Central Europe they generally use just seed drilling machines. The Nordic countries since the 1960's have been sowing and fertilising at the same time because the growing season is short. This way the fertiliser is placed close to the seed, which utilises the fertiliser quicker allowing a quicker growth to the seed."

"The new seed drilling machines





are entirely our design. We have been able to add solutions which farmers value. This can be seen in the fact that production was sold out as soon as the product was launched in Autumn," announced Vesa

HIGH QUALITY MACHINES, HIGH QUALITY DOCUMENTATION

The cooperation between Dometal and Comatec started small in 2007 but has expanded over time to its present state.

"We noticed that we could not do everything alone, so we decided to utilise Comatec for a risk management and safety study, Vesa recalls from the early days of the cooperation."

"Expanding our product line to a whole family of products has increased the requirement for documentation. It used to be Word-based which was very cumbersome," Vesa declares.

"We are a growing business and

the number of countries we are exporting to is growing, so it's been important to translate the instructions to more and more languages. Each product in the line has a 100page document, which needs to be translated into multiple languages. Our Word-based system could not cope with this demand."

"The CMS system development work started at Comatec and seemed like a perfect solution for us. Today, all our new project documentation is in a structured form based on Comatec's CMS system," Vesa disclosed.

"Our cooperation with Comatec started with a six-month documentation task regarding one of the seed drilling machines. It has since grown to its current levels. Now, the third product is in the process of documentation and the benefits of structured documentation are emerging."

"Comatec provides all the documentation for us on a turnkey basis, as we have no additional resources. We have not yet implemented the system for our own use, although we can do it at any time if we wish, since everything was designed for us in that system."

"So far, we are focusing on designing the machinery, which is our expertise. We commission all the risk management, technical calculations and documentation to Comatec. Comatec is a flexible partner and it is a one stop shop for us."

Finally, Vesa explains "The largest benefit for us with Comatec's documentation is that it's of high quality, understandable and easy to read. I am very satisfied with the language of these documents".

Modern technical documentation adds security and forms the company brand

Technical documentation is an important part of our clients' product quality. It adds to the security of the product, and improves usability, but also falls under the statutory requirements. Furthermore, high quality content and layout of technical documentation is important in creating the company image. We have noticed that documentation is often done sporadically using basic Office tools, and identified a clear need to develop documentation to ensure high quality. We wanted to provide our clients with a modern documentation process and flexibility by introducing DITA Content Management System (CMS).

TEXT Taina Syrjänen PHOTOS Taina Syrjänen ja AdobeStock

n 2017, we started to develop the documentation business in Comatec with the aim to help our clients implement technical documentation in a new way. We established a separate documentation team, led by **Tomi Salmivuori**, under the Expert Services business unit in Comatec.

"We introduced a structured documentation system that is not dependent on any specific system. Together with our business partner, DoX Systems, we have developed our own Comatec CMS, that we now use for technical documentation," Salmivuori says.

"At the same time, our documentation team has been growing. We now have well over a dozen Documentation Specialists, and the plan is to continue our growth in the coming years. We have also extended the use of Comatec CMS to our Polish office, and we aim to increase the use of the system further. We have established our position in the documentation field, and the demand for our services is building up steadily."

COMATEC CMS

The Comatec CMS is a structured documentation system based on LW DITA architecture. The content is divided into modules and written only once following the principles of single sourced information. For example, when a new product model is released, just the new or changed modules need updating, and the rest can be reused as such. The system also easily manages all illustrations, different language versions, revisions and graphic design. Localisation is easy as the needed materials are linked together in publications. Also the visual image of a company is easy to manage with style sheets. If the image needs updating, the style sheets are easy to update, and no need to go through several documents manually.

The Comatec CMS is flexible and user friendly. It works in a browser and is web as well as SaaS based. If there is a sudden need to edit a manual, it can be done anywhere, anytime.

"We develop the system in cooperation with Comatec, based on the feedback and wishes of their clients. We're adding a significant new feature next year," reveals Mikko Tauriainen from DoX Systems.

COOPERATION WITH DOX SYSTEMS

When Comatec's documentation service began to develop towards structured documentation, DoX Systems were selected as the system vendor. Comatec has Comatec CMS as a content management system. The DoX System can produce all the material for the clients, partners or other stakeholders including marketing materials and newsletters.

"As a system vendor DoX Systems does not provide a documentation service. When our customers are interested in content production we recommend Comatec's CMS", explains **Mikko Tauriainen**, the CEO of DoX Systems.

"The system operates in an internet browser. It comes with an API interface ready to import data from virtually any system. From DoX CMS system you can export the data to almost any other system. In addition, the system does not need to be installed onto a workstation as it can be used on an internet browser. All you need is the website address, username and password, which are required for access.

In DoX CMS, document content is divided into modules, you can think of the modules as Post-It notes with different content. If you want to create an A4 document, you can select the Post-It notes, the modules that suit the document and the document is finished. These Post-It notes are then available for use with other documents should they be required. When the document is published, the correct layout and format are selected based on the documents intended use.

"The cooperation between Comatec and DoX Systems is a mutually beneficial dialogue. We have received good ideas for development from Comatec that we have introduced to the system. We have made every effort to support and help Comatec to succeed in its own customer service. I think we have a very open collaboration", says Mikko Tauriainen.

"During 2020, a new feature will be the ability to import video files into DoX CMS. In addition, we will be releasing a major addon this year, which we hope to be able to announce in Spring 2020".

For more information: www.dox.fi





FROM LEFT: In front Senni Klami, Tomi Salmivuori and Piritta jalkanen. behind Tuukka Turunen, Kate Suominen, Johanna Ahlstén-Roimela and Johanna Syrjämäki. **ABOVE:** Timo Kilpeläinen and Heini Murto.

COMATEC CMS IS A STAND-ALONE SYSTEM

The most important feature of the CMS is that it's not dependent on any other systems. The structure can be brought to the CMS from other similar systems, which makes it easy to change the used system. The client is not dependent on this particular system we use, nor is our service dependent on the system the client uses. The Comatec CMS does not require a large investment from the client. Comatec can use the CMS and produce all the documents for the client, but the client can also choose to use the CMS themselves. We can always find a method of using the CMS that suits our clients' needs. All the information within the CMS is the intellectual property of the client.

CLIENTS CAN BENEFIT FROM THE EXPERTISE OF THE COMATEC DOCUMENTATION TEAM

In addition to the CMS, the client also benefits from the vast experience of the Comatec team.

"Whether you need process development, design for new materials, or updates on existing content, our experienced documentation team can help you. We design and write content as well as create publications for every kind of technical document: user, maintenance and installation manuals, spare parts publications, education materials etc. We can also provide the illustrations," adds Salmivuori.

"Our clients are different kinds of machine and equipment manufacturers, and so we have extensive experience ranging from smaller individual machines to larger production lines."

COOPERATION WITH NOUVEAU

Comatec and Nouveau cooperate for the translation of documentation. Translations are made directly into Comatec's CMS (content management system) for the required languages. The cooperation has begun in some cases straight from the customer. Now we have collaborated for such a long time that Comatec is recommending Nouveau to customers to its own customers who might benefit from this service and Nouveau is doing the same for Comatec.

"The cooperation works well for both parties" agrees both **Leo Alcenius**, from Nouveau and **Tomi Salmivuori** from Comatec.

According to Leo Alcenius, Nouveau is a Finnish global translation agency that translates over a

hundred language pairs each year. The teams are always built depending on the language requirements of the project. The projects are always managed from Finland, whether its one language or several. Our work is always based on our translation being understandable and optimal for the target audience.

Our goal is to build long term cooperation's with our customers. This way we get the best quality on both sides. Comatec is also based on long-term cooperation with its partners. Salmivuori states "this gives the best outcomes for our clients".

Lisätietoja: <u>www.nouveau.fi</u>

Plant Design is Hompleting a Jesay Puzzle

A Sorting Line Designed by Oucons for Nordkalk

Nordkalk's mine located in Parainen has long traditions in limestone mining. Marblelike limestone has been mined locally since the 17th century and the company has been incorporated since 1898. Every year, the total amount of mined material is around 2 million tonnes of which ends up in lime productions in the region of 1.3 million tonnes. The remaining 700,000 tonnes of so-called gangue, which is used amongst other things in road production. Half of lime produced is delivered directly to a local cement production factory and the other half is used as raw material for food and metal industries.

TEXT Marianne Valta PHOTOS Nordkalk Oy Ab

he limestone's journey begins in Parainen with an open-cast quarry and continues to the coarse crushing plant

situated a 100 metres underground. From the crushing plant, two conveyors transfer the aggregate through a primary screen to the sorting plant which is above ground. It then moves along four lines where it is sorted by size. On the sorting lines, any raw material which is not suitable for production is separated optically, whereas the screened material is analysed further to check the composition to allow for a quality end product.

"We deal with aggregates that have their own challenges with regards to the conveyors and the sorting plant. In addition, the environment is very humid which adds a strain to the steel structures. The lifespan of the lines is only around 1015 years. The lines are replaced alternatively in order to equalise the investment costs," explains Nordkalk's Maintenance Manager **Sami Lindström**.

THE FIFTH LINE OF THE SORTING PLANT RENEWED

The latest investment in Parainen was the so-called fifth line. The fifth line is the one that sorts coarse rock and it was near the end of its lifespan. For example, spare parts for the equipment were difficult to source making it hard to operate and maintain the line.

Oucons, a member of the Comatec Group, was selected as the main designer of the line during a call for tender in September 2018. Installation began in November 2019, and commissioning was completed at the turn of November and December.

"Placing new equipment and the necessary parts of the structure in the existing environment is always a challenge. Space can be tight and parts are lifted to the installation site via a separate hatch. Issues cannot be avoided completely but overall everything went smoothly without any big problems, thanks to successful planning and are local main contractor. The final phase was perfecting the optical sorter to distinguish between the stone grades, now the line is operating at full capacity," Lindström explains.

MODERN DESIGN METHODS

Oucons has a long experience with the design of material handling systems, conveyors and associated steel structures.

"As the site's plant designer, we were responsible for situating of the main equipment, the design of the supporting structures and maintenance levels. When designing for challenging environments the strength of the structure, installability and available space must be taken into account," says Timo Viljanen, the Business Manager at Oucons.



The plant design begins with a pre-design phase, during which data is collected, sketches drawn for the supports and other arrangements, and the structures were given dimensions. During the design phase, the details of the structures are finalised. Then the production and installation schematics for the site's main contractor.

Whilst planning the new line a 3D scan and photographs were utilised instead of the traditional tape measure and sketchbook.

"Modern design programs and practices are a prerequisite for a successful plant design. For example, Nordkalk's new sorting line had to be installed in a confined space, which required a very precise design. The 3D model allows the structures to be designed at the correct size, which speeds up the actual installation process. The lines used for processing aggregate are under a heavy strain. We were able to utilise our knowledge in material handling to design the funnel structure at the end of the line along with the dimensions and vibration analysis of the support structures," Viljanen adds.

THE RESULT OF A NUMBER OF FACTORS

Nordkalk was responsible for the tendering and the selection of the equipments suppliers. For design purposes, Oucons received information such as location, size and opening direction of the service hatches from the equipment vendors. Good results were achieved through smooth cooperation between different suppliers.

"Compared to the previous sorting line, this new ones seems to have improved in functionality. Especially for maintenance purposes, large maintenance levels increases the ergonomics and safety at work. The next investment is likely to take place in a few years time and our goal is to unify our equipment to match the new line. At the moment, the equipment is from a variety of ages and suppliers which adds an extra challenge for sourcing of spare parts," says the Proactive Maintenance Designer Johan Pelto from Nordkalk.

Also Oucons is pleased with the result.

"Thanks to good cooperation, we received comprehensive base information from the equipment suppliers, and were able to examine the lines and structures before the actual design work began. This is the first time we have worked with Nordkalk's plant in Parainen, and it was important to study the plant carefully. Sometimes it's good to use existing solutions but other times it's good to make new recommendations for fixing or supporting structures," says Viljanen.



3D MODEL BRINGS RELIABILITY TO LINE DESIGN

3D scanning was used to design the sorting plant for Nordkalk. During the scanning, the camera equipment captures the desired area in relation to a specified reference point.

"As a result of the scan, we received a comprehensive 3D model of the area in RCS-format as well as illustrative panoramic photos. The 3D model was introduced into the design environment and was used for inspecting collisions and fitting structures to the existing environment," states Timo Viljanen from Oucons.

3D scanning brings reliability to the design and it speeds up both the design and installation phase.

"Without the scanned data, it would have been necessary to carry out a time-consuming on-site measurement using traditional methods including tape measures and sketchbooks. Automatic measurements also help reduce the likelihood of measurement errors. The sorting line equipment and the structures we had planned fitted together perfectly, which significantly sped up and made the installation easier," stated Viljanen.

Comatec started operations in Va

"A new Comatec location opened on January 15, 2020 in Vaasa. The Vaasa office serves local customers locally. All of the Comatec Group's expertise is at the disposal of our customers," says Pasi Kaarto of the Vaasa office. companies in the marine, process and energy industries. We specialise in electrical, automation and mechanical engineering. There are also companies manufacturing AC drives in the Vaasa region, which we can serve especially in electrical testing and mechanical engineering areas," Pasi explains.

"We work either with the client as part of the client's project or participate in the project from the office as per the client's wishes. We can provide client project with

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"Here in Vaasa, we target

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project manager and designers as needed."

Now we are in the process of recruiting electrical, automation and mechanical designers. We are also looking for someone to manage the project and electrical testing

AAAAZ

engineers. Pasi says, "we have received plenty of applications, and now I've completed the interview rounds."

"We need even more talent, so we will be doing another round of recruitment this spring."

"On the 13.5.2020 there is an Ostrobothnian Industry event in Seinäjoki at Seinäjoki Areena. We are there to promote Comatec in Ostrobothnia, and of course we are now highlighting the fact that customers can get our services locally from Vaasa."

"In particular, we hope to

meet clients with requirements for electrical, automation and mechanical engineering as well as project management."

"Come and meet us at Comatec's stand A 517. We can discuss opportunities for cooperation," Pasi notes.

Appointments

The following appointments have been made within the Comatec Group:

MARJA SEMI HR Manager KEIJO HÄMÄLÄINEN Director, Sales and Business Development KARI PULKKINEN ERP Project Manager MIKKO MÄKINEN Engineering Manager, Electrical and Automation Engineering MIKKO LAANINEN suunnittelupäällikkö Comatec Automationilla Imatralla MARKO TIAINEN Department Manager, Joesuu office PASI KAARTO Engineering Manager, Electrical and Automation Engineering TOMMI OJALA Business Unit Manager, IoT Solutions HARRI HEIKKILÄ Project Director

Safety engineering

Comatec's Safety Engineering service offers a wide range of expertise in different areas considering safety aspects for a variety of sectors. We will provide you with comprehensive technical expertise in both product and occupational safety management. In order to provide a comprehensive safety service, we also have access to Comatec's documentation and technical calculation services.

Safety Products

- Safety and compliance from the beginning
- Targeted requirements
- The meeting of requirements
- Risk Management
- High quality safety documentation

Benefits

- Cost effective
- Conformity to regulations
- Taking products safely to the market

A Safe Workplace

- Hazardous objects identified and protected
- Working methods recognized and secured
- Personal protective equipment selected and proper tools
- Compliance with legislation

Benefits

- Reduced sick leave and interruptions to production
- A more comfortable working environment
- Assurance that compliance requirements
 have been met

Machine Safety Services

- Clarification of Requirements
- Product safety tasks required by the EEA (CE Marking) and other market areas
- Compliance
- Functional safety
- Safety surveys
- Training

Other Safety Services

- HSE services
- Customer's organization safety support
- Safety Workshops
- Life cycle analysis
- Consultations

Do you need Safety engineering services? Ask more:

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