planworld

PLANMECA CUSTOMER MAGAZINE 2017

IDS 2017 REVIEW EDITION

planworld

PLANMECA CUSTOMER MAGAZINE

Please contact us by email at editor@planmeca.com

Editor-in-Chief
Daniel Purssila, tel. +358 20 7795 176
daniel.purssila@planmeca.com

Editors
Sanna Tolmunen
Aleksandra Nyholm

Layout
Perttu Sironen

Publisher
Planmeca Oy
Asentajankatu 6
00880 Helsinki, Finland
tel. +358 20 7795 500
editor@planmeca.com
www.planmeca.com

Imprint
Lönnberg Oy, Helsinki, Finland

Cover
Planmeca at IDS 2017

CONTENTS

We hope you will join us as we guide dentistry into a brilliant digital future!

Great new launches at IDS 2017

THE beginning of our year revolved around IDS 2017. Held in Germany's Cologne every two years, the International Dental Show is the biggest and most significant event in our industry.

It was great to once again have so many people visit our stand! We have been working hard to further develop our comprehensive all-in-one solution and went to great lengths to provide the best possible IDS experience.

We included a spectacular **Planmeca Dream Clinic** show at our stand to illustrate the power of our integrated overall solution. The show made use of a large rounded screen to create an immersive environment for visitors and highlight our extensive product offering. Our aim is to provide everything needed at a dental clinic – from equipment to software to services.

THE NEXT GENERATION OF CBCT IMAGING

Our **Planmeca Viso™** CBCT unit was without a doubt among the most impressive products launched at IDS 2017. The new unit introduces a renewed workflow which elevates the entire imaging experience to a new level. Volume placement is now done virtually from the unit's control panel utilising integrated cameras and a live video view.

PRECIOUS THINGS COME IN SMALL PACKAGES

The release of our new **Planmeca Emerald™** proved that a small intraoral scanner can make a big impact. The scanner's small size, outstanding accuracy, and exceedingly fast scanning speed make it a true game-changer that dental professionals will not want to live without.

OPERATIONAL ANALYTICS AT YOUR FINGERTIPS

To ensure that decisions are always based on the best possible information, we also introduced a new way of looking at clinic operations at IDS. The web-based **Planmeca Romexis® Insights** analytics service allows clinics and group practices to utilise data better than ever before. Users can take advantage of interactive dashboard views at any time and base evaluations, operative planning and predictive maintenance on clear visualisations of usage statistics.

ELIMINATE MOVEMENT ARTEFACTS

In imaging, there has been an ongoing struggle to eliminate artefacts caused by patient movement. We are very excited to introduce the solution to this long-standing problem – the **Planmeca CALM™** algorithm for patient movement correction. It will not only save time for clinicians but also guard patients from unnecessary exposures. Planmeca CALM is already available as an update for all **Planmeca ProMax® 3D** units and will also be included in the new Planmeca Viso unit.

ALWAYS ONE STEP AHEAD

Those mentioned above are only a few of our new launches – we presented innovations in all of our main product categories at IDS. You can find out about all of them on the pages of this magazine. Get ready to discover the latest and greatest dental products available in dentistry today – from imaging to CAD/CAM and from software to dental units.

Heikki Kyöstilä
President

Cool

Neutral

Warm

Composite mode

Planmeca Solanna™ operating light

For brighter workdays

OUR new dental operating light Planmeca Solanna™ provides perfect visibility over the entire treatment area while offering adjustable brightness and colour temperature. It is the ideal choice for brighter workdays.

THE advanced LED technology and mirror optics of **Planmeca Solanna™** guarantee a large illumination field, which provides excellent visibility to every corner of the treatment area – minimising the need to adjust the light head during treatment.

"Our new operating light is a fantastic addition to our product family. In dental care, every detail matters and this is exactly why we wanted to bring this great solution to the market," states **Jukka Kanerva**, Vice President of Planmeca's Dental care units and CAD/CAM division.

Planmeca Solanna's uniform light intensity ensures minimised shadows regardless of the distance from the treatment area, and the sharp edges of the light beam make the light easy on patients' eyes. Planmeca Solanna's special composite mode enables safe use of composite materials and prevents unwanted pre-polymerisation.

"This operating light has been developed and designed for users of all sizes, sitting or standing. Its exceptionally long arm ensures optimal working conditions for operations of all kinds. Planmeca Solanna truly holds to its promises with its many adjustable features," Mr. Kanerva says.

The interface has been placed on the innovative handles of the light for easy control. The detachable and autoclavable handles can also be washed in a washer-disinfector. The pioneering handles combined with the dustproof light capsule and seamless one-piece back cover guarantee optimal infection control. Planmeca Solanna can also be connected to the **Planmeca Romexis®** software to get reliable information on the use of the light.

Deliveries of Planmeca Solanna will start later in 2017.

Planmeca Emerald™

WE have expanded our extensive CAD/CAM product range with a new light intraoral scanner. Planmeca Emerald™ is a small, lightweight, and exceedingly fast scanner with superior accuracy. It is an ideal choice for smooth and efficient chairside workflows.

THE compact and extremely light **Planmeca Emerald™** intraoral scanner makes intraoral imaging easy for dentists and highly comfortable for patients. Its small size and seamless design guarantee a great patient experience.

"This revolutionary product makes chairside workflows effortless. The accuracy of the impressions meets the most demanding needs with a fully integrated colour scanning option," remarks **Jukka Kanerva**, Vice President of Planmeca's Dental care units and CAD/CAM division.

The scanner's lightweight structure and user-friendly form ensures optimal ergonomics. Visibility always remains clear with the active antifog feature of the scanner's tip mirror. Infection control is impeccable due to the autoclavable tip and seamless design.

Planmeca Emerald also has an easy and simple plug-and-play solution that makes it easy to share between operatories. The scanner can be easily integrated with any Planmeca digital dental unit for unmatched convenience. It can even be controlled from a dental unit's foot control, leaving the user's hands free for scanning and patient treatment at all times.

Planmeca Emerald's cable is equipped with a USB 3.0 connector for the fastest possible data transfer. The scanner is compatible with the **Planmeca Romexis®** and **Planmeca PlanCAD® Easy** software for constant access to real-time scanning data.

"Small in size, light in weight, outstanding speed, and superior accuracy – also in full natural colours. I'm confident that with these features Planmeca Emerald will become one of the most precious tools in the world of intraoral scanning," Kanerva concludes.

Deliveries of Planmeca Emerald are estimated to start in Q3, 2017.

The next wave of chairside milling

With two excellent new milling units, Planmeca is set to shape the future of chairside CAD/CAM dentistry.

Planmeca PlanMill® 40 S

Power meets precision

WE introduced the **Planmeca PlanMill® 40 S** milling unit last fall. The unit allows for fast and efficient milling directly at dental clinics. With its enhanced performance and numerous smart features, the unit offers the most advanced milling experience the dental market has seen.

The **Planmeca PlanMill 40®** S milling unit has been designed for the chairside fabrication of metal-free dental restorations and appliances. It combines superior usability with accurate high-speed milling.

"Planmeca PlanMill 40 S has introduced a level of quality, precision, and performance that has not yet been seen in the industry," states **Jukka Kanerva**, Vice President of Planmeca's Dental care units and CAD/CAM division.

With its state-of-the-art design, smart tool paths, expanded range of applications, automated tool changer for 10 tools, and intelligent maintenance features, Planmeca PlanMill 40 S is set to offer the most complete milling experience available today.

"The S in the product's name stands for Smart – which is exactly what the unit brings to the table," Kanerva illuminates.

"From usability to performance, the new unit has been built to achieve the smartest and most efficient milling experience in the field."

The Planmeca PlanMill 40 S unit will replace its predecessor Planmeca PlanMill 40 in the company's product line. The new unit is already available for deliveries.

Planmeca PlanMill® 30 S

Chairside milling is for everyone

THE new **Planmeca PlanMill® 30 S** entry-level milling unit furthers our mission to make CAD/CAM dentistry accessible to all. The unit has been developed for dental businesses looking for an efficient, accurate, and cost-effective milling solution.

The new **Planmeca PlanMill 30® S** is a highly accurate milling unit which guarantees a professional entry to the world of CAD/CAM technology. The unit has been designed for the chairside fabrication of metal-free dental restorations and appliances.

"Planmeca PlanMill 30 S is a great addition to Planmeca's CAD/CAM selection. It's a high-speed single-spindle unit with state-of-the-art design. It is cost-effective without compromising quality," says **Tuomas Lokki**, Senior Vice President of Planmeca.

The milling unit is equipped with a rotary axis for milling blocks of choice, and a fixed tool changer for three tools.

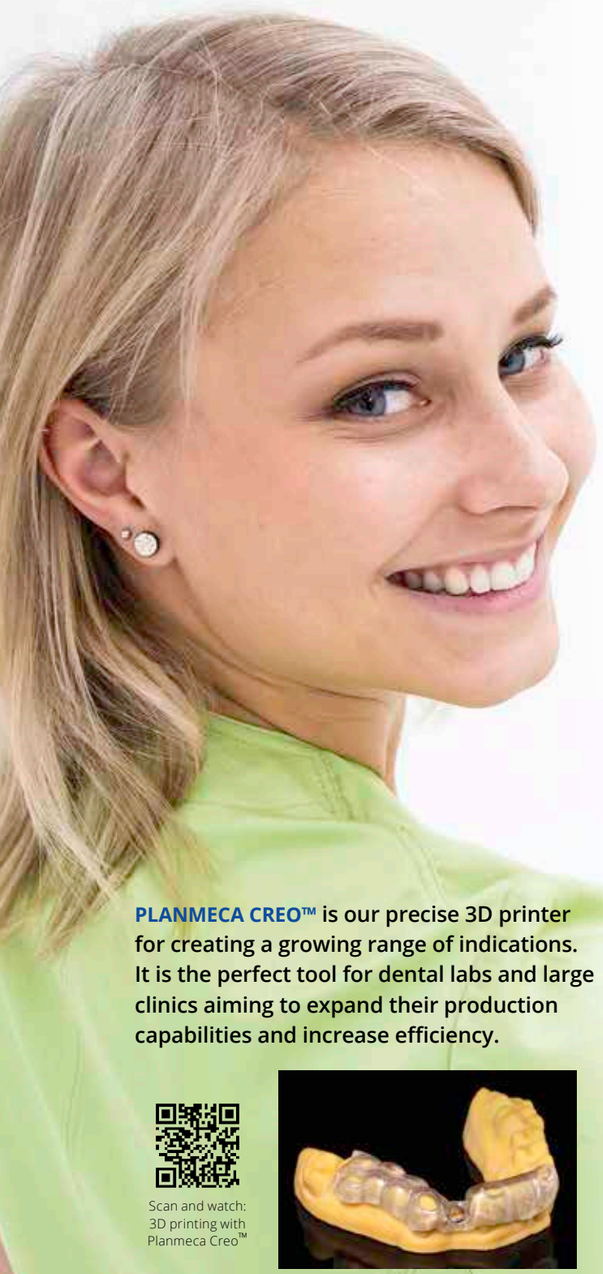
The unit integrates seamlessly with Planmeca's intraoral scanners and **Planmeca Romexis®** software suit.

"Our **Planmeca FIT®** chairside system offers dentists a completely integrated and digital workflow from intraoral scanning to 3D designing and efficient chairside milling. And now dentists can make a choice between two options – the single-spindle Planmeca PlanMill 30 S or the dual-spindle Planmeca PlanMill 40 S milling unit," Lokki sums up.

Deliveries of Planmeca PlanMill 30 S are estimated to start in Q3, 2017.

Planmeca Creo™

New possibilities with 3D printing



PLANMECA CREO™ is our precise 3D printer for creating a growing range of indications. It is the perfect tool for dental labs and large clinics aiming to expand their production capabilities and increase efficiency.

Scan and watch: 3D printing with Planmeca Creo™

PLANMECA CREO™ is a versatile 3D printer for creating dental models and surgical guides with true precision and efficiency. In the near future, the device will also support the creation of other dental objects of intricate detail, such as dental splints.

"3D printing is the way of the future, as it permits labs and larger clinics to expand their production capabilities and increase efficiency," says **Jukka Kanerva**, Vice President of Planmeca's Dental care units & CAD/CAM division.

Planmeca Creo uses DLP technology which stands for Digital Light Processing. This means it is a light-curing 3D printer that utilises a digital projector as a light source – the main benefit being that printing times are not affected by the number of models printed. The projector will cure the entire print area (130 x 81.5 mm) with the same effort.

Planmeca Creo creates objects out of UV curable resin. The 3D printer's surgical guide material is a Class 1 medical material and has been approved for use in contact with soft tissue, bone, and blood. The contact is restricted to under 30 days.

The printer has its own dedicated software which is included as part of all deliveries. Integration with the **Planmeca Romexis®** all-in-one software is in the works. The **Planmeca Romexis® Clinic Management** module will also support Planmeca Creo in the future. This will enable efficient remote monitoring of ongoing printing jobs and their estimated completion times.

"We feel that 3D printing is set to take on a much more substantial role in dentistry and cannot wait for our customers to see what Planmeca Creo is capable of," Kanerva concludes.

INDICATIONS:	
DENTAL MODELS	AVAILABLE
SURGICAL GUIDES	AVAILABLE
DENTAL SPLINTS	COMING SOON
CASTS	COMING SOON
TRAYS	COMING SOON
TEMPORARY FILLINGS	TBA

Fully digital implant workflow

with the Planmeca Romexis® Implant Guide module

PLANMECA ROMEXIS® is the leading software platform for dentistry. It supports all types of dental imaging and offers an extensive range of tools for all specialities and specialists. Planmeca Romexis now also enables a fully digital implant workflow as the software allows users to design their own implant guides for the first time.

TAKING an implant plan to actual surgery is now easier than ever, as the **Planmeca Romexis®** software includes all the required steps for a fully digital implant workflow. All steps can be controlled and completed in the all-in-one Planmeca Romexis software, from planning to manufacturing.

The workflow has been completed with a new tool – the **Planmeca Romexis® Implant Guide** module for designing surgical implant guides. This elevates implant planning to another level as virtual plans can now be brought to reality accurately.

"The Planmeca Romexis Implant Guide module allows flexible design and cost-effective use of surgical guides," states **Helianna Puhlin-Nurminen**, Vice President of Planmeca's Digital imaging and applications division. "Users can create guides with a few simple steps and the open format STL file for the design can then be printed with a 3D printer – such as the new **Planmeca Creo™**."

The fully digital implant workflow in Planmeca Romexis now consists of as follows:

- Smile analysis and patient motivation in the **Planmeca Romexis® Smile Design** module
- CBCT imaging with **Planmeca ProMax® 3D** X-ray units
- Matching CBCT images with any surface model of the teeth in the **Planmeca Romexis® 3D** module
- Virtual crown design in the integrated **Planmeca PlanCAD® Easy** software
- Prosthetic-driven implant planning in the **Planmeca Romexis® 3D Implant Planning** module
- Implant guide design in the Planmeca Romexis Implant Guide module
- 3D printing of guides with the Planmeca Creo 3D printer

"As a truly open system, Planmeca Romexis allows all standard format images to be imported to the software for creating a virtual patient – a combination of different types of 3D images. If necessary, completed guide designs can also be exported in the STL file format. This allows users to always flexibly select their preferred workflows and tasks," Puhlin-Nurminen summarises.

Planmeca Romexis® Insights

Operational analytics for dental clinics

THE web-based **Planmeca Romexis® Insights** analytics service introduces a new way of looking at clinic operations – it allows clinics and group practices to take advantage of interactive dashboard views at any time and base evaluations, operative planning and predictive maintenance on clear visualisations of usage statistics. Planmeca is the first manufacturer in dentistry to offer a comprehensive IoT solution.

Benefit from device statistics visualising usage to identify low utilisation of resources.

EVEN small dental clinics generate large quantities of data each day. The **Planmeca Romexis® Insights** service has been designed to combine these data into informative views that facilitate evaluating clinic operations intelligently. For the first time ever, dental managers can benefit from real-time information on how their equipment operates – including a comprehensive usage history with rich interactive dashboards.

"Device connectivity and real-time usage reporting has become common in many industries typically labelled as IoT," states Planmeca Senior Vice President **Tuomas Lokki**.
"Our products have included local network connectivity for over a decade and we have built the Planmeca Romexis Insights service utilising this experience. As the first manufacturer to offer an IoT solution in dentistry, we want to empower our customers to prepare for the demands of tomorrow's competitive landscape."

Planmeca Romexis Insights presents a wide range of device analytics for tracking usage, trends, and patterns over time. Clinics can view device status and receive alerts as well as monitor patient counts and in-chair time for Planmeca dental units equipped with patient detection sensors. Milling and X-ray unit usage counts and device status are also available.

The service also includes extensive features for supporting business intelligence and improving efficiency:

- Interactive UI with drill-down graphing and adjustable timelines
    - Usage patterns for recognising areas suitable for optimisation
    - Overviews for identifying quiet and busy hours
    - Time period comparisons for spotting trends
- Comparisons of true equipment usage with receivables accounts
- Real-time device status and history
- Reports on consolidated utilisation for multiple offices – especially valuable for group practices

Planmeca Romexis Insights is an open system and also supports products from other manufacturers. As an online service, it can be used on any supported browser, including on smartphones.

"Planmeca Romexis Insights is yet another example of Planmeca's all-in-one concept and our strong commitment to help customers maximise the value of their investment for many years to come. The service is largely made possible by our future-proof products which deliver tomorrow's features today. To be successful we must always stay one step ahead – together with our customers," Lokki illuminates.

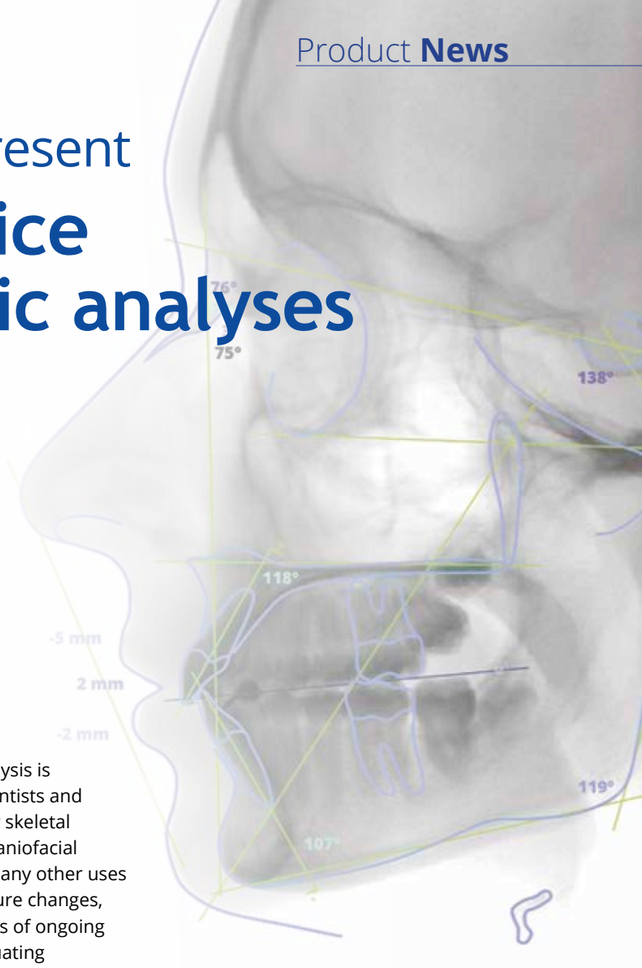
Use interactive graphics to quickly gain an understanding of performance and trends for a clinic or an entire group practice.

Use X-ray acquisition counts to review radiology as a revenue stream.

Track milling jobs and milling status.

Planmeca and CephX present

New online service for cephalometric analyses



PLANMECA has teamed up with CephX Technologies LTD to offer a new service for automatic cephalometric tracing and analysis. Utilising machine learning technology and artificial intelligence, the service has been designed to help the daily work of orthodontic practitioners around the world. It automatically delivers cephalometric tracing and analyses with a few clicks and in a matter of seconds when integrated into the Planmeca Romexis® dental imaging software.

PLANMECA and CephX Technologies LTD have launched an automatic cephalometric tracing and analysis service for the **Planmeca Romexis®** software. The new service utilises CephX's intelligent AlgoCeph algorithm – a sophisticated application of artificial intelligence and machine learning technology based on thousands of manually traced cephalometric images.

The integration of AlgoCeph into the Planmeca Romexis software dramatically streamlines orthodontic practitioners' work. After image capturing in the software is completed, an automatic cephalometric analysis can be ordered with a few clicks and received in a matter of seconds.

The service can also be used directly online from a dedicated website which has been designed for Planmeca users who have yet to upgrade to the new Planmeca Romexis software version 4.6.

"Machine learning technology has tremendous potential in the world of radiology," states **Ville Salonen**, Product Manager, Planmeca Digital imaging and applications. "We are very excited to help users of our products save time and focus on patient treatment by offering them access to such a pioneering service. The future of orthodontics is now just one click away!"

Cephalometric analysis is commonly used by dentists and orthodontists to study skeletal relationships in the craniofacial complex. It also has many other uses such as predicting future changes, monitoring the success of ongoing treatment plans, evaluating a patient's dentofacial proportions and assisting doctors in the recognition of abnormalities. For these reasons, cephalometric analysis is crucial when developing and evaluating proper treatment plans for patients.

The challenge has been to provide analyses in a reliable and cost-effective way as patient's expectations increase and competition in the market grows. CephX's AlgoCeph algorithm saves valuable time for practitioners, reduces human error and contributes to better efficiency and improved patient handling right from the first appointment. Rather than spending valuable time on training, supporting and monitoring the work of others, practitioners can rely on sophisticated software drawing on one of the largest cephalometric databases in the world and focus on the value-generating throughput of patients.

"The world of orthodontics is evolving rapidly, as it provides patients continuous improvements in care," states **Daniel Abraham**, Chairman of CephX Technologies LTD.

Get cephalometric analyses at planmeca.cephx.com

"Our first priority has always been to help practitioners focus on that – providing them with peace of mind regarding their cephalometric analyses."

"This is also the main reason we have teamed up with Planmeca and incorporated AlgoCeph technology into the Planmeca Romexis software," Abraham continues. "We are proud to be able to deliver what I believe is a substantial market revolution. We look forward to providing many more beneficial innovations in the near future based on this technology and cooperation."

If you are an orthodontic practitioner and wish to provide your patients better care through simple and immediate Ceph analysis, visit *planmeca.cephx.com* today!

New Planmeca Viso™ CBCT unit

Presenting the next generation

COPY DANIEL PURSSILA
IMAGES PLANMECA OY

PLANMECA introduced the company's new CBCT unit at IDS 2017. Planmeca Viso™ is a perfect combination of premium image quality and high-end usability.

Project Manager
Lauri Seppälä

IT all began with a question: What should the CBCT imaging unit of the future be like?

"Some years back, the leading CBCT experts at Planmeca sat down to brainstorm in an attempt to determine the exact characteristics of our new ideal unit," Planmeca X-ray division Project Manager **Lauri Seppälä** recounts.

Visions were expressed and ideas exchanged. Slowly but surely a more complete picture started to form, and before long an actual product development project was ready to commence. After previously setting standards with its **Planmeca ProMax® 3D** product family – originally introduced at the turn of the millennium – Planmeca would once again prepare to raise the bar in the field of dental imaging.

Seppälä's role was to remain at the centre of the process at all times, making sure everyone was headed in the desired direction. "For a project to advance smoothly, it is crucial that the right things happen at exactly the right time," Seppälä summarises. "Great achievements can be accomplished when talented individuals are all the same page and share a common goal."

STANDING ON THE SHOULDERS OF GIANTS

Designing a high-tech product such as a CBCT unit always requires a wide range of qualified experts: from mechanics and electronics engineers to software and industrial designers as well as usability specialists. As an established CBCT powerhouse, Planmeca fortunately already had all the needed expert knowledge in-house.

"Planmeca is one of the top CBCT unit manufacturers in the world, so we were already familiar with the demands of designing a new X-ray unit. The project was essentially a matter of putting all the pieces together smoothly," Seppälä illuminates.

The development team could heavily lean on the Planmeca ProMax 3D units which are still among the leaders in their respective market segments and have remained at the cutting-edge.

"The sophisticated technological innovations of Planmeca ProMax units provided a solid foundation for further development," Seppälä explains.

Naturally, much of what continues to make Planmeca ProMax 3D units so exceptional also applies to the new **Planmeca Viso™** unit – outstanding image quality, premium durability, and the **Planmeca Ultra Low Dose™** imaging option, for example.

"At this point it almost goes without saying that all our X-ray units offer premium image quality at an optimal dose," Seppälä points out. "And, as is also the case with Planmeca ProMax units, Planmeca Viso is a true workhorse that will perform excellently even through longer days of imaging".

USABILITY AT ITS FINEST

But there are also differences. For example, Planmeca Viso offers a revolutionised imaging workflow. Patient positioning and FOV adjustments are now done virtually from the control panel utilising the unit's integrated cameras and a live video view.

What this means is that the operator of the unit can see the patient's live video image from the control panel or workstation for positioning. Users can place the volume freely from the video view as well as determine its appropriate size.

> Planmeca is one of the top CBCT unit manufacturers in the world, so we were already familiar with the demands of designing a new X-ray unit"

Additionally, the new unit provides increased patient space, but due to shorter acquisition times patients have less time to move during imaging – resulting in even fewer artefacts. The new **Planmeca CALM™** algorithm for patient movement correction further ensures successful results every time. Single scans from the jaw to the frontal sinus are also possible which eliminates the need for stitching.

Planmeca Viso even introduces an entirely new way of capturing **Planmeca ProFace®** photos. With four integrated cameras aimed at the patient from different directions, ProFace photos can now be acquired without rotating the scanner.

OPTIMAL RESULTS WITH EASE

Versatile features are important as they enhance productivity and determine how a unit can be used. However, even the most impressive advancements must be built around a solid foundation.

"Although it is often tempting to talk about specifications and functions, at the end of the day we feel that the ideal CBCT unit is pretty simple to define – it is one that is effortless to own and easy to acquire excellent images with," Seppälä summarises.

"And that's exactly what Planmeca Viso is ultimately about."

Utilising smile design software

and CAD/CAM for creating a mock-up and final restorations

8

CASE REPORT BY AKI LINDÉN (CDT)
IMAGES JUHA KIENANEN AND AKI LINDÉN

TREATMENT planning and smile design have been performed with traditional techniques for years in aesthetic dentistry. In recent years, various software programs have emerged offering useful new tools for digital design. When compared to traditional techniques, the main advantages of digital design lie in speed, flexibility and improved communication between the patient and the treatment team.

Summary

Patient: A 32-year-old woman with hypoplastic pitted amelogenesis imperfecta.

Treatment: Patient photos and smile design software were used for treatment planning and creating a digital mock-up. A digital impression was captured with an intraoral scanner. A digital mock-up design was used in CAD software for designing a wax-up. After preparations, a digital impression was taken again and the final veneers were designed with CAD software and created with a milling unit.

1

DIGITAL SMILE DESIGN

During the first patient visit, preoperative face photos were taken with a Canon EOS 6D camera (*Fig. 1*). Two photos were taken of the patient – one face photo of a smile (*Fig. 2*) and one retractor image (*Fig. 3*).

The photos were both carefully taken from the same angle using a camera stand. The distal distance between the maxillary central incisors was measured with a calliper for the calibration of the image. The appropriate shade for the new teeth was also determined (BL3 – *Fig. 4*, the third colour from the left).

Next, the patient's smile photo was imported into smile design software. The patient's facial proportions were analysed – including the smile line, central line and papillary line (*Fig. 5*).

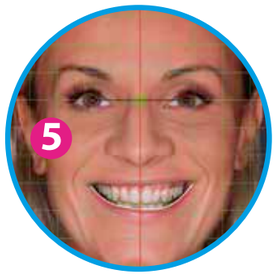
The different treatment possibilities were explained to the patient visually with the help of the software's silhouette tool (*Fig. 6*). The patient was able to take part in the treatment planning process by visually expressing their expectations of the final result (*Fig. 7*). Ultimately, the decision was made to treat eight anterior maxillary teeth instead of the initially planned six as the patient's wide smile revealed more teeth than average. The more comprehensive treatment was also more in line with the patient's expectation of the result (*Fig. 8*).

To finalise the design, the patient's retractor image was superimposed on top of the smile image, which enabled viewing and modifying the gingival area (*Fig. 9*).

2

3

4



5

6

7

9

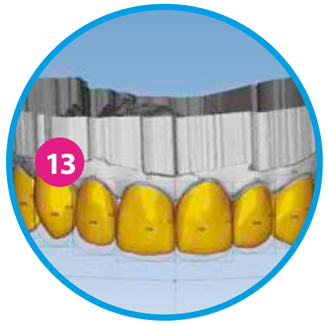
CREATING THE WAX-UP

A digital impression of the patient's pre-op dentition was taken using an intraoral scanner (*Fig. 10–11*). Both the upper and lower arches were scanned and the digital impressions were immediately available for wax-up design. The smile design silhouette was exported from the smile design software to the CAD software for wax-up design (*Fig. 12*). The silhouette was adjusted on top of the digital impression and used as a guideline for creating veneer designs in the software. The tools in the CAD software were used to design and finalise the digital wax-up *(Fig. 13*).

Next, the digital wax-up was 3D printed for mock-up creation. A silicone key was prepared from the 3D printed model. Using the silicone key and 3M ESPE Protemp™ 4 Temporisation Material, a mock-up was created for the patient's mouth (*Fig. 14*), with fit and functionality checked. At this point, the patient had the opportunity to experience the design of her new teeth and understand the altered look and feel (*Fig. 15*).

PREPARATIONS AND TEMPORARY VENEERS

After confirming the proper fit, the patient's teeth were prepared (*Fig. 16–17*) and the preparations were scanned, again using an intraoral scanner. Next, temporary veneers were created with the same silicone key and 3M ESPE Protemp™ 4 Temporisation Material. The temporary veneers were tried on the patient and fixed by spot-etching.



CREATING FINAL RESTORATIONS

Once the temporary veneers were successfully fitted, the final veneers were created from IPS e.max CAD blocks using a milling unit. The restorations were finished by layering ceramics (e.max Ceram) onto the labial and incisal parts for maximum aesthetics (*Fig. 18*).

To conclude a successful treatment process, the final restorations were cemented. A photo of the end result was also taken (*Fig. 19–20*).

CONCLUSION

Digital smile design significantly improves the communication between the patient and the entire treatment team. More predictable results make patients more confident as they can trust that the outcome will be in accordance with their expectations. Patients are also pleased to be actively involved in their own treatment and that they are able to take part in the design process right from the start. As a result, patient case acceptance is improved.

Digital smile design provides several benefits compared to traditional smile design with different wax-ups – it is easier, more comfortable for the patient and more time-efficient.

1 Planmeca Romexis Smile!

Acknowledgment
Katja Narva, DDS, PhD, Specialist in Prosthodontics

Utilised equipment and software
- Planmeca Romexis® Smile Design software
- Planmeca PlanCAD® Premium software
- Planmeca PlanScan® intraoral scanner
- Planmeca PlanMill® 50 milling unit

ABOUT THE AUTHOR

CDT Aki Lindén has an extensive history in aesthetic dentistry and fixed prosthetics as he has worked in his own dental laboratory in Helsinki for over 20 years. Mr. Lindén is a recognised Opinion Leader for Ivoclar Vivadent in Finland for which he regularly serves as an instructor and lecturer. Mr. Lindén is also a member of several aesthetic dentistry societies, such as *the Scandinavian Academy of Esthetic Dentistry (SAED), the American Academy of Cosmetic Dentistry (AACD),* and *the Society for Color and Appearance in Dentistry (SCAD).*

ZAGREB'S Poliklinika Bagatin has found Planmeca dental equipment to be the perfect match for the clinic's stylish facilities and versatile expertise.

IMAGES POLIKLINIKA BAGATIN

Poliklinika Bagatin **chose exceptional quality and support**

"WE are the leading Croatian clinic specialising in plastic surgery, dental medicine, and dermatology. We differentiate ourselves in the market and maintain the status of a favourite beauty destination. During our 20 years of existence we have become a synonym for top quality service by global standards.

Wishing to provide nothing but premium service, we choose only technology and equipment that have a proven seal of quality which at the same time represent the most modern scientific achievements.

Our two clinics offer over 250 services in 7 different specialisations. Our first clinic specialised in cosmetic surgery was founded in 1995 and is located in downtown Zagreb. **Dinko Bagatin**, whose specialty is general and plastic surgery, and **Tomica Bagatin**, plastic surgeon of the head and neck, believe it increases the quality of life for people who require it.

Our dermatology, dentistry, and cosmetology departments are located just above the DoubleTree by Hilton Hotel Zagreb. In over 900 square meters our clients have available to them an ultramodern laser centre, body shaping centre, dermatological department and, of course, our dental centre. This is our newest department which places emphasis on aesthetic dentistry, prosthetic dentistry, and implantology. Our dental team provides the highest standard of dental service thanks to our partner Planmeca with their innovative technology and products.

Planmeca's 45 years of excellence in health care technology gives us security and reliance. They have exceptional quality, technical support, and a unique system which connects all dental equipment that we use. Together we are always one step ahead!"

Dreams become reality – Planmeca at IDS 2017

IDS 2017 was held at the end of March in vibrant Cologne, Germany. With 155,000 visitors from 157 countries, the exhibition was bigger than ever before. As one of the largest exhibitors at IDS, Planmeca was proud to introduce a wide range of innovations to elevate the daily workflows of dental professionals to an entirely new level.

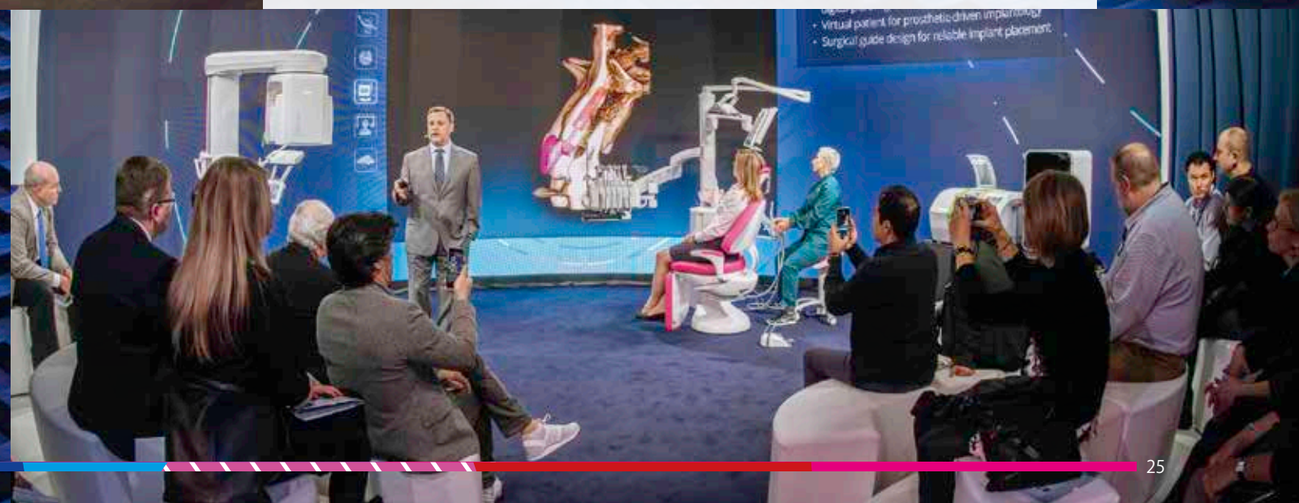
IDS is the high point of the dental industry's event calendar every odd year. Forever preceded by an aura of mystery, the trade show is always sure to include product releases that will shape the future of dentistry – with each exhibitor more anxious than the last to reveal the latest and greatest they have to offer.

Planmeca was proud to once again be among the most prominent exhibitors at the event. We made use of our huge stand to present our full range of innovations, both previously existing and new. With exciting launches in all main product categories, there was plenty for visitors to explore and discover throughout the week.

"We think that our new products are game-changing because the ultimate goal is efficiency in the dental clinic," said Planmeca Senior Vice President **Tuomas Lokki**. "If we can help clinicians improve their daily workflows, I am confident they will trust us to guide them into the future." »

COPY DANIEL PURSSILA
IMAGES PLANMECA GROUP'S ARCHIVE

IDS 2017



DARE TO DREAM

Our close to 800 m2 stand largely revolved around the novel **Dream Clinic** show – an impressive audiovisual portrayal of a complete implant workflow. The show utilised a spectacular rounded screen to create an immersive environment for visitors – allowing them to sit down for a moment and enjoy a glass of champagne together with the show. As seating was limited in the intimate setting, curious onlookers often gathering at the edges of the curtains to observe what was going on. Shows were held steadily throughout the day both in English and German.

The Dream Clinic show featured all the latest Planmeca products and highlighted the full potential of our integrated overall solution. Built around the powerful **Planmeca Romexis®** software platform, our sophisticated treatment workflow allows users to complete all steps themselves or flexibly outsource any part to external partners.

There were immersive activities to take part in elsewhere at the stand as well. For example, visitors were welcomed to try on a VR headset and virtually place Planmeca equipment into a clinic environment. This provided them with a unique way to see what their ideal clinic would look like.

Of course, Planmeca products were not only featured on-screen or virtually – our entire product line was also on display on the IDS floor for visitors to get better acquainted with.

ONE SOFTWARE FOR ALL NEEDS

With so many new product launches, Planmeca users have much to look forward to in 2017 – and beyond. Dentistry is transforming as digital innovations continue to push the envelope of what's possible. Built around a single software platform, our product offering forms a whole that is even more than the sum of its parts. The future is already here for those prepared to embrace it.

IDS 2017

> It makes me proud to be able to say that we truly care about both our customers and their patients."

COPY ALEKSANDRA NYHOLM
IMAGES PLANMECA USA & PLANMECA OY

For Planmeca USA's new president

dentistry's digital future is already here

AS Planmeca USA's long-standing President Robert Pienkowski retired, the company's Vice President of Sales Brett Hines took his place at the helm. Hines himself says he is ready to take the company to the next level.

PLANMECA USA'S new President Brett Hines has never been one to shy away from a challenge. Through an extensive career in sales Hines has acquired an in-depth understanding of the North American dental market and is well-versed in both Planmeca and its high-tech dental equipment. Now he has been tasked with leading the entire North American branch of the company into the future.
As the newly minted President gets ready to take the lead, read what he has to say about what's new, now and next for Planmeca and the entire dental industry.

YOU'VE RECENTLY BEEN NAMED THE NEW PRESIDENT OF PLANMECA USA. HOW ARE YOU SETTLING INTO YOUR NEW ROLE?

The appointment is definitely bringing some unique challenges and experiences – but I am more than ready to take them on. Bob Pienkowski helped Planmeca founder **Heikki Kyöstilä** launch the company's North American wing almost 30 years ago, and he has done such a great job since that stepping into his shoes won't be entirely easy. The company has such a great foundation, people and products, however, that I'm confident I can lead us to new heights the same way Bob has – hopefully for another 30 years!

WHAT'S CHANGING FOR YOU AS PRESIDENT OF THE COMPANY?

My whole career has been centred on sales and sales training, and as Vice President of Sales I was honoured to work with the best sales team in the world. Now, as President of Planmeca USA, I will be working with all aspects of the company and hope to facilitate growth while keeping an eye on the customer experience.

WHAT SETS PLANMECA APART FROM OTHER MANUFACTURERS IN THE DENTAL INDUSTRY?

To me, the strength of the entire Planmeca product portfolio lies in the integration of hardware and software all down the line. The ease of use and upgradability of our devices is not only built in the design, but is supported by a powerful and flexible one-software solution – **Planmeca Romexis®**. The many tools and functionalities of Planmeca Romexis cover everything from patient management to device monitoring to diagnostics and treatment. Having that software platform supporting all operations can unclutter your dental office and take it into the digital age of today.

Even though technology and the market are constantly changing, there is one thing which always remains the same – the human concern for health. At Planmeca we understand this, because as people we share the same concern. This has in turn given rise to ground-breaking health innovations such as the **Planmeca Ultra Low Dose™** protocol, which enables CBCT imaging at a lower patient dose than in conventional panoramic imaging – without compromising image quality. It makes me proud to be able to say that we truly care about both our customers and their patients.

WHAT DO YOU SEE ARE THE CHALLENGES IN TODAY'S DENTAL INDUSTRY? WHAT'S CHANGED?

Technology and digitalisation are really changing dental care and the world right now. Consequently, access to the latest information and expertise is more important than ever.

Another development that is rapidly changing dental care is the growing demand for same-day dentistry. The patient's time is valuable, and if given a choice, anyone is going to want to get that crown the same visit. Patients want same-day restorations, and dentists are really starting to listen. That's why complete chairside CAD/CAM solutions such as **Planmeca FIT®** have been fantastic for dentists.

WHAT DOES THE FUTURE LOOK LIKE FOR PLANMECA INC.?

The future of Planmeca is absolutely bright! Planmeca has always been at the forefront of dentistry, and we are truly living in exciting times in the dental industry right now – so stay tuned!

WATCH THE INTERVIEW:

DR. KLEANTHIS MANOLAKIS

Dentist brothers from Greece **find the perfect FIT**

COPY DANIEL PURSSILA
IMAGES PLANMECA OY AND MANOLAKIS DENTAL CLINIC

GREEK dentist brothers Kleanthis and Alexandros Manolakis share more than blood – they are also united by their dental clinic as well as a passion for the profession.

THE brothers Manolakis have a strong background in digital dentistry. They have been utilising CBCT imaging as part of implant and prosthetic treatments as well as using surgical guides already for years.

A few years ago, Kleanthis and Alexandros decided to take their practice – Manolakis Dental Clinic in Thessaloniki, Greece – to the next level by entering the CAD/CAM world.

"Our vision was to develop a fully integrated CAD/CAM procedure at our dental office over the next couple of years," Kleanthis illuminates.

After looking at available options, the Manolakis brothers decided that the **Planmeca FIT®** system for chairside CAD/CAM was the right choice for them. They have complemented the system's **Planmeca PlanScan®** intraoral scanner and **Planmeca PlanMill® 40** milling unit with the design software **Planmeca PlanCAD® Premium**.

A FAST START

Kleanthis and Alexandros have been using the Planmeca FIT system at their clinic for over a year now. Kleanthis states that it has been a fast start for them.

"Our experience has been that the whole system is very mature and it is quite easy to get very acceptable clinical results with a relatively small learning curve."

His brother agrees: "There is a learning curve, which is something we knew and anticipated – but because of the user-friendliness, it goes by quite quickly."

With their new system up and running smoothly, the brothers have taken on a leading role as CAD/CAM dentists in Greece. Their clinic is the first in the country to offer a Planmeca chairside CAD/CAM workflow. Kleanthis says that this has already sparked much interest.

"Everybody has been very interested in getting more information on this technology. They have been impressed because we can reduce the treatment time in a tremendous way and offer same-day restorations."

Indeed, patients of Manolakis Dental Clinic have responded to the new technology very well – so well that it has come as a bit of a surprise to the clinicians.

"Our patients have been very enthusiastic about it," Alexandros illuminates. "I did not initially expect this effect, to be honest. They really appreciate that they don't need to have impression material in their mouths and that they can, more or less, take part in the design process."

"The restorations are produced right in front of their eyes and they are very excited about it. This was an aspect that surprised me quite a lot," Alexandros notes.

BETTER CARE WITH SOFTWARE

All steps of the Planmeca FIT workflow are easily controlled and accessed through the **Planmeca Romexis®** software platform. With all treatment data immediately available on all workstations, the software allows scanning, designing, and milling to take place simultaneously.

Alexandros values Planmeca's all-in-one approach and considers it to be a huge benefit: "I don't want to have different software for each procedure, software that often doesn't communicate with each other. I like to have one platform to do all of my work with – this is very important to me."

Kleanthis has also been very pleased with Planmeca Romexis and enjoys the software's steady performance: "I'm a little bit afraid of software systems – I'm not a software specialist, so I feel very comfortable working with such a solid and professional software platform."

Working with Planmeca FIT has made daily life at Manolakis Dental Clinic easier and more interesting. Specifically, the brothers appreciate the fact that Planmeca FIT is an open CAD/CAM system which allows seamless communication in all situations.

"A very strong advantage in my eyes is that this is an open system, which allows us to share our digital files with our lab. We can do part of the work in our office and have part of it done in a lab in Greece – or in any other part of the world," Kleanthis states.

Alexandros concurs: "It's a system that gets regular updates also, and so as technology moves on the system evolves continuously as well."

CHANGING DENTISTRY

In the beginning, Alexandros thought that acquiring a chairside CAD/CAM system would be a good way for his clinic to be more cost-efficient. However, after using Planmeca FIT for some time he has come to the conclusion that this was an incomplete assessment – and that the system has had a bigger effect than he could have imagined.

"Planmeca FIT has changed the way I perform dentistry – in the restorative part as well as in the implantology part. It allows me to do restorations I couldn't do before or would take a long time to do."

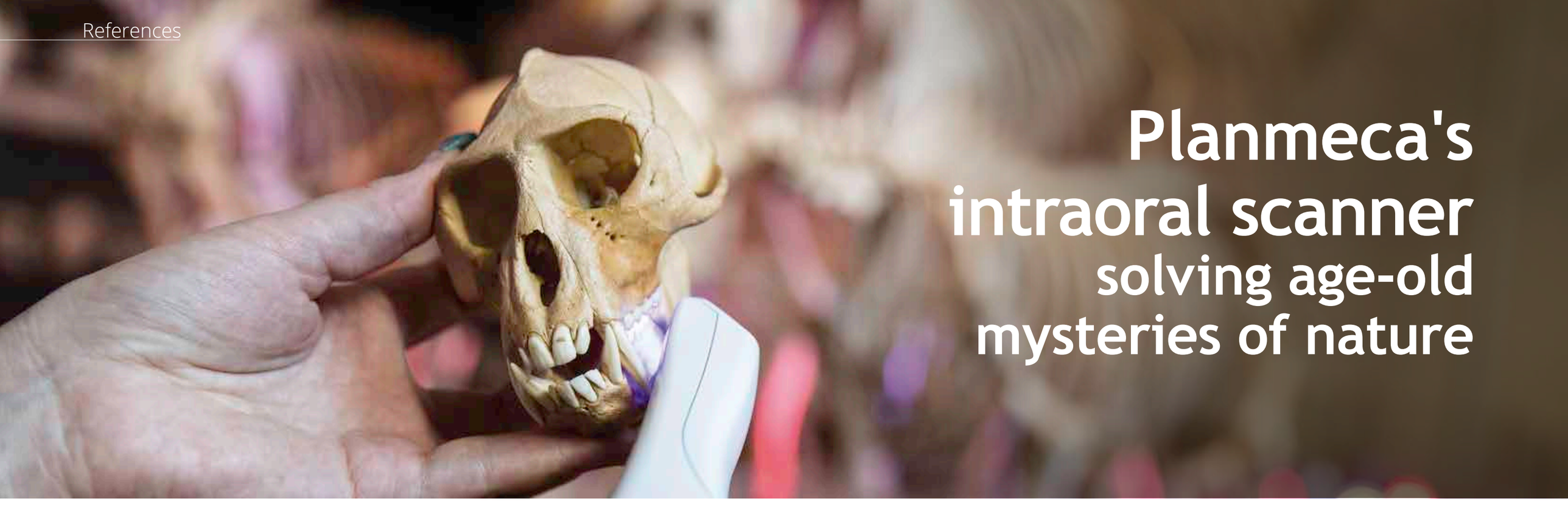
"Now I can provide same-day service which both benefits my patients and opens up new horizons and possibilities. The ability to manufacture implant-supported restorations in our office was a key point for me. By scanning the appropriate scan-bodies intraorally, the Planmeca FIT system allows me to design and fabricate full-ceramic crown-abutments with a custom anatomic emergence profile. It's a different kind of dentistry that I perform today," Alexandros concludes.

The present looks bright, but the Manolakis brothers already have even bigger plans in mind. Kleanthis reveals that over time they are looking to expand their clinic even further.

"In the future we would probably like to acquire our own 3D imaging device and be able to further expand our diagnostic and treatment possibilities."

"We feel very comfortable with Planmeca as a company and definitely believe that it is an excellent partner in terms of new technologies and excellent quality," Kleanthis sums up.

DR. ALEXANDROS MANOLAKIS



Planmeca's intraoral scanner
solving age-old mysteries of nature

COPY SANNA TOLMUNEN
TRANSLATION ALEKSANDRA NYHOLM
IMAGES JUHA KIENANEN

PLANMECA'S intraoral scanner has become the new favourite tool of many scientists in unraveling the mysteries of nature. Researchers have been particularly fond of the Planmeca PlanScan® scanner's compact size, precision and speed, which make the scanner the ideal tool for the digitisation of samples.

RESEARCHER Henry Pihlström is holding a small bat skull in his hand, eagerly demonstrating its tiny canines. The Finnish Museum of Natural History is widely known for its enormous skeletons which serve as a source of inspiration for both the young and the old. This time we are being taken on a private tour of the museum and also getting a glimpse of the world behind the exhibition – the bone collections of the museum.

We have come to the Museum of Natural History to interview Senior Museum Technician **Janne Granroth** about the collections and their purpose. Granroth takes us through a maze of corridors to a cool room underneath the museum premises. I wrap myself in my coat, but Granroth and researcher Pihlström seem unaffected as they dig among the treasures of the collection in their shirtsleeves while the cool air protects the collection. I look at the bones around me and find myself thinking how I never would've have guessed this is where I'd end up when I first came to work for Planmeca.

RINGED SEALS BRING PLANMECA SCANNER TO RESEARCHERS

But what brings us from Planmeca to the Natural History Museum on this autumn day? Let's go back in time a little bit. In spring 2015, Planmeca received a call from the University of Helsinki. Renowned researcher of evolutionary developmental biology **Jukka Jernvall** was in need of a device suitable for his research.

Jernvall is well known for his ground-breaking work on the evolution of teeth, and indeed, according to him, "teeth are a window on the past a million years ago". At the time of contacting Planmeca, he and his team were researching the history of the Saimaa ringed seals and the development of their teeth.

For this purpose, Jernvall needed a way to record his sets of teeth digitally, but the imaging tools that were available to him then were slow, with their accuracy also leaving something to be desired. As a result, Jernvall made the call to Planmeca to get his hands on a **Planmeca PlanScan®** intraoral scanner.

The scanner quickly proved itself both fast and accurate, while its compact size made it easy to carry along to any research site. With the help of Planmeca's expertise, the **Planmeca Romexis®** software was also fine-tuned at the university to suit the ringed seal teeth – ringed seal teeth being rather different from human teeth, after all.

The collaboration soon revealed even wider applications for the scanner, and so the word began to spread. Since then, the Planmeca scanner has been used in palaeontology – i.e. the scientific study of prehistoric life especially through fossils – to examine the teeth of pandas, ancient cave bears, polar bears, and even mice and swine.

Today, many Finnish palaeontologists use Planmeca 3D imaging devices and software in their work, which is garnering international attention in the field as well. It is also precisely this fascinating branch in the world of Planmeca which has now brought us to the bone collections of the museum.

FOSSIL RESEARCH GOES DIGITAL

A pile of enormous moose antlers are reaching for me from a nearby box. I half expect a moose to raise its head from the heap, but the bones stay firmly put. "We have samples from all groups of vertebrates here in our collection," says Granroth. "Here you'll find fish, reptiles, amphibians, and birds as well as bones and skeletons from mammals, which constitute the majority. Many samples consist only of the skull, but others feature the full skeleton. Some samples even retain the skin."

I take a look inside another room, where the skin of a red panda stares at me with its eyes, now reduced to mere black holes. Researcher Henry Pihström asks what we would like to photograph as he lifts up some ape skulls from the collection. Meanwhile, Senior Museum Technician Granroth has taken out the skull of a white whale, whose empty eye sockets now seem to be looking at me with anticipation.

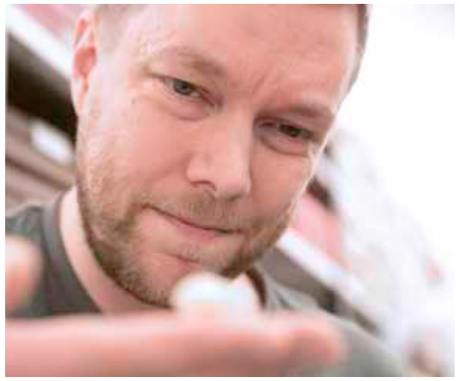
"The samples here are mainly intended for research, university teaching and general information purposes, but are especially relevant to scientific research. Researchers will come down here to do some investigation or scan samples with your devices," Granroth describes.

The bat skulls presented by Pihlström are an example of samples scanned with Planmeca PlanScan. The smallest bats have skulls so small and thin that most scanners cannot handle them, however here, too, the Planmeca scanner delivers. Indeed, the tiny skull of the vampire bat looks more like it belongs on the wall of a dollhouse than to the infamous bat of the legends and makes Pihlström's hand look enormous by comparison.

"A lot of researchers who visit us are using your devices. One day we hope to have systematically digitised our entire collection," Granroth says. "Ideally, we would eventually have an online system where the serial number of every sample would correspond to a digital impression, as this would enable us to share the material with researchers all over the world."

TEETH AS SUBJECT OF EVOLUTIONARY AND DEVELOPMENTAL RESEARCH

A couple of weeks have passed since our visit to the Museum of Natural



On the left, researcher Henry Pihlström holds a tiny bat skull.
On the right, Senior Museum Technician Janne Granroth examines a collection of bones with Pihlström.

Researcher Jacqueline Moustakas-Verho scans the teeth of a now extinct cave bear.

History when we are once again surrounded by fossils. This time we are meeting with researcher **Jacqueline Moustakas-Verho** at the Kumpula Manor in Helsinki. Built in the 1800s, today the manor hosts the geologists of the Natural History Museum, while the manor is now a botanical garden.

Moustakas-Verho says it was Jukka Jernvall who inspired her to move to Finland from the United States six years ago. Jernvall's work on teeth made a particular impression on Moustakas-Verho and convinced her that she wanted to work with the acclaimed researcher. I think to myself how I never knew research into fossil teeth was a big deal in Finland – something which excites people all around the world to such an extent it can even persuade them to move up here to the North.

"The University of Helsinki is one of the leading institutions in the world on fossil teeth research. People come here to investigate teeth from all over the world, like France and Japan," Moustakas-Verho enlightens me.

Her own road to Finland took her from Boston University to the University of California, Berkeley before she finally arrived at the University of Helsinki.

"At Boston University I learned a lot about the evolution of birds and dinosaurs. Then for my PhD I moved on to UC Berkeley, where I got into evolutionary biology. There I became particularly interested in evolutionary and developmental biology, which is the study of how plants and animals evolve into the living things they are, and so ended up researching turtles."

"At Berkeley, there was this professor who was in the habit of leaving interesting evo-devo papers on my desk. It was among these that I then found a study by Jernvall on tooth development in mice which absolutely fascinated me! It really opened my eyes and made me realise that I had to work on teeth. So I wrote to Jernvall about looking to do my postdoctoral studies somewhere, and he said that I should come to Finland. And so that's how I ended up investigating extinct cave bears with professor Jernvall's evo-devo research group at the University of Helsinki Institute of Biotechnology," Moustakas-Verho summarises her path to Finland.

Moustakas-Verho says teeth are an excellent subject for researchers of evolutionary and developmental biology because once the teeth are formed, they change shape only by wear.

"I like teeth in evolutionary biology because they can often tell you what the animal has been eating and how the teeth have adapted to the diet. It's interesting to find out why this animal is shaped differently from that animal."

LIGHTWEIGHT SCANNER TRAVELS WITH RESEARCHER

For the cave bear study, Moustakas-Verho says she and her research group at the Institute of Biotechnology used the Planmeca scanner to model teeth from e.g. brown bears, black bears, sun bears, polar bears and giant pandas, which they then compared to similar teeth models from the cave bear.

A central role in this research was played by Professor **Alexander von Nordmann's** 19th century collection of cave bear bones and skulls, which is stored at the Kumpula Manor. The research of Moustakas-Verho revealed that the molars of the cave bear were the most complex of all bears, which indicates that its diet was nearly entirely herbivorous.

Moustakas-Verho takes us again to the bone collections of the manor. The old floorboards creak beneath our feet, but the cave bears are undisturbed by the noise. The bones remain motionless in their glass cabinets. To me, the enormous teeth of the ancient cave bear look as if they could easily have chewed more than just grass. Moustakas-Verho takes the jaw bone of a cave bear in her hand.

"I was introduced to the Planmeca scanner through Jernvall and researcher **Yoland Savriama**. They and their team were doing research into ringed seals, and I even scanned a few seals for Jukka. After that I wanted to try the device on cave bears. I had previously tried another scanner, but it was too heavy to travel with. The Planmeca scanner, meanwhile, worked really well, and I eventually took it with me all the way to the National History Museum in Denmark to scan polar bear samples," Moustakas-Verho relates as she starts up a computer with Planmeca PlanScan attached to it.

On the walls, the pictures of researchers of decades past observe the proceedings, and as the light from the scanner sweeps over the surface of the teeth to produce a digital impression on the computer screen, I am for a moment touched by a sense of the past and the present coming together seamlessly. I doubt whether the collector Alexander von Nordmann could ever have imagined in the 1800s what prehistoric research would look like today.

Planmeca France's Brice Saint Jalmes

believes in high technology and continuous learning

BRICE SAINT JALMES took over the French branch of Planmeca Group last summer. Since then, he has been busy managing Planmeca's network of French distributors as well as preparing for the opening of the company's beautiful new premises in Nantes.

COPY ALEKSANDRA NYHOLM
IMAGE JUHA KIENANEN

IN August 2016, Brice Saint Jalmes was appointed Country Manager at Planmeca France, a subsidiary of Planmeca responsible for the company's distribution network in France. In his ten months with the company, Saint Jalmes has infused the French office with both new ideas as well as in-depth knowledge of the financial sector. Read about his thoughts on his first year with the company and what he has envisioned for the future.

LAST YEAR, YOU WERE APPOINTED COUNTRY MANAGER AT PLANMECA FRANCE. HOW HAS YOUR FIRST YEAR BEEN FOR YOU?

"Exciting! I've had several projects to manage and was able to dive into the work from the get-go. As my background is mainly in finance, I did have to familiarise myself with the industry, our partners and our range of products very quickly. However, thanks to my capable team in France, our wonderful partners and management at Planmeca Finland the transition was very smooth, and I'm looking forward to another good year!"

WHAT'S CHANGED FOR YOU IN YOUR NEW POSITION WITH THE COMPANY?

"Before joining Planmeca, I worked for nine years in investment banking, corporate finance and private equity. In my new position, my role is to manage and support Planmeca's distribution network in France. This includes among other things providing our dealers with the resources they need in terms of sales and technical support, product knowledge and training. My experience in management and economics allowed me to quickly get to grips with the work, but has also enabled me to bring new ideas to the table."

WHAT'S CURRENTLY HAPPENING AT PLANMECA FRANCE? WHAT'S NEW?

"We're just about to open our stunning new flagship office and showroom in Nantes. The new premises are not only a showcase of our technology and products, but feature conference and technical training facilities which will enable us to offer relevant training for both distributors and customers. At the same time, we are also investing both time and human resources in really talking to dental practitioners to find out what they want and need from us. I firmly believe listening, learning and training are the way of the future for us."

WHAT DO YOU THINK GIVES PLANMECA THE EDGE IN FRANCE?

"The design of our products and their interconnectivity through the dynamic **Planmeca Romexis®** software platform have been particular selling points. The **Planmeca Compact™ i** dental units and **Planmeca ProMax®** X-ray units have been especially strong in their respective categories and give us a leading position in France. At the same time, I'm very excited for the new products revealed at IDS 2017 to enter the market. Products like the lightweight and supremely fast **Planmeca Emerald™** intraoral scanner and the simply stunning **Planmeca Viso™** CBCT unit generated a lot of good buzz at IDS."

HOW DO YOU SEE THE FUTURE OF THE FRENCH DENTAL MARKET?

"Although the political climate in France has been changeable of late, the key drivers of the market look good in the long term. The dental equipment market in France grew in 2015 and 2016 more than the French economy, and the demand for both dental care and same-day dentistry is on the rise. Dentists today are not only professionally, but personally interested in new technology, and this is an interest we naturally share as well."

WHAT DOES THE FUTURE LOOK LIKE FOR PLANMECA IN FRANCE?

"Very good! Our product offering is solid, and we expect a lot from the new products presented at IDS as well. In France, Planmeca is perceived as one of the most innovative companies in the market – and rightly so. We are a high technology company and as such share our customers' interest in both technological advancement and how it can be implemented in patient care. And these are not just our words, mind you – it's what our customers really think of us."

Planmeca France opens new high-end premises in Nantes

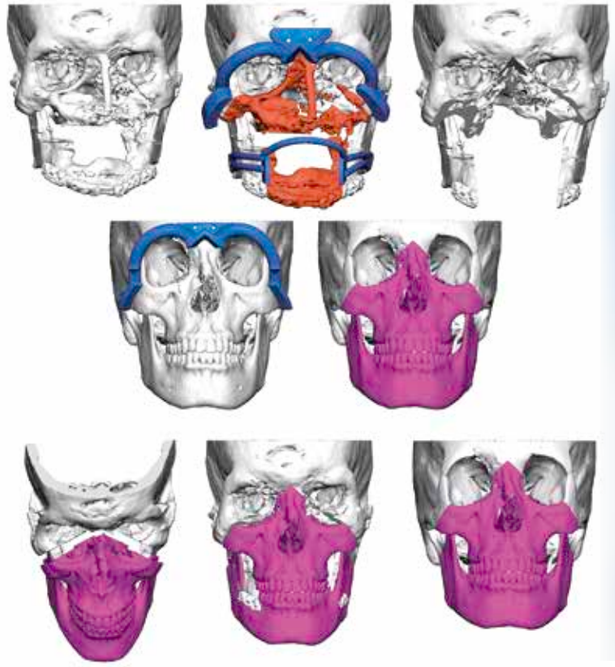
On 15th June, close to 100 distributors, partners and customers joined Planmeca leadership in celebrating the opening of Planmeca France's new premises in Nantes. The new flagship office was inaugurated by Country Manager Brice Saint Jalmes alongside management from Planmeca Finland.

In addition to the sophisticated office, guests were shown around the premises' spectacular showroom showcasing Planmeca's high technology products. The new premises also include high-end conference and training facilities which will enable the company to organise dentistry and product training on location.

COPY SANNA TOLMUNEN
IMAGES SAMPPA FJÄDER & PLANMECA OY

> It is a privilege to have a company like Planmeca in Finland, as it provides us with support and sophisticated technology – ultimately helping patients"

Dr. Patrik Lassus (left) and Dr. Jyrki Törnwall (right) collaborated with Planmeca in planning the demanding operation.



NB: These images are illustrations and do not represent the actual patient or donor.

Planmeca ProModel™

part of first facial tissue transplant procedure in Nordics

THE first facial tissue transplant procedure in the history of the Nordic countries was performed in early 2016 at the Hospital District of Helsinki and Uusimaa (HUS) in Finland. Planmeca contributed to the demanding and rare operation, which was the 35th of its kind in the world to date.

THE facial tissue transplant surgery itself took 21 hours and was carried out by a group of 11 surgeons as well as 20 nurses and other experts. The operation consisted of transplanting the patient's upper and lower jaw, lips and nose as well as segments of their skin, midfacial and tongue muscles, and the nerves of these muscles. The head of the surgical team, Dr. **Patrik Lassus**, emphasised that the objective of the operation was to transplant facial functions, not external features.

3D PLANNING OF THE OPERATION WITH THE PLANMECA PROMODEL™ SERVICE

The **Planmeca ProModel™** service was part of the demanding procedure. It is a unique service for designing and creating patient-specific implants, surgical guides and skull models from CBCT/CT images. 3D technology decreases surgical time and produces significantly more precise results when compared to traditional methods. This makes operations increasingly safer for patients.

The facial tissue transplant procedure was planned preoperatively utilising 3D technology. The planning consisted of modeling donor tissues and determining how they match the recipient. Surgeons Patrik Lassus and **Jyrki Törnwall** designed the 3D printed surgical guides together with Planmeca's CAD/CAM designer.

Planmeca's innovation substantially decreased the operating time – saving hours compared to similar procedures previously carried out elsewhere in the world. Conserving time is one of the key aspects of surgery, as longer operations increase the risk of complications. In transplant cases, it is also of paramount importance to accelerate the restoration of blood flow.

"Based on literature, we know that it can take 3 to 4 hours to trim bones. In this particular operation, it took Patrik [Lassus] and myself under 10 minutes to place the transplant. This led to a drastic reduction in the duration of the surgery while also significantly improving the accuracy of bone placement," described Dr. Jyrki Törnwall, one of the operating surgeons, at the press conference on the operation.

Planmeca participated in planning the facial tissue transplant right from the start, led by CAD/CAM Design Manager **Jani Horelli**.

"We had the opportunity to join the surgeons in making medical history. In the end, we reduced the surgery time by 3 to 4 hours and successfully completed the operation with the help of 3D planning for the first time in the world. It was a great job by all involved," stated Horelli.

At Planmeca, planning the operation began around three years ago. Careful steps were taken in preparing for the upcoming procedure.

"Planmeca's part consisted of two phases. First, we designed the surgical guides together with Dr. Lassus and Dr. Törnwall as well as determined the kinds of segments that would be surgically removed from the recipient and transplanted from the donor. At this point, we were anticipating a scenario which would realise once a donor was found," Horelli recounted.

"The second phase began immediately once we received word of a suitable donor. An X-ray image of the donor was taken at the hospital and the imaging data was utilised in the 3D designing. We also simulated the operation together with the surgeons. Following this, the components were designed and manufactured at Planmeca headquarters and transported to the hospital, where they were taken directly to the operating room."

"All 3D designing is carried out exactly according to the anatomy of the donor and the recipient. When time is limited and there are significant risk factors involved, there is no room for error," Horelli concluded.

3D DESIGNING OF OPERATIONS BECOMING MORE COMMON

Using virtual surgery to simulate procedures is an increasingly important part of surgery today. 3D technology is also constantly improving. Planmeca works in close cooperation with hospitals and surgeons to develop and improve the field. For example, Planmeca's collaboration with the Hospital District of Helsinki and Uusimaa spans nearly a decade – the facial tissue transplant procedure being a prime example of the benefits of this relationship.

"Planmeca's role has been essential to our work for years – we have been able to utilise computer simulations to create saw guides which allow us to saw at a specific orientation and to an exact depth, as well as remove facial structures – which we know match the donor – at a precise angle," Dr. Törnwall noted.

"Surgeons and us engineers both see tremendous potential in this kind of collaboration. Certain surgical procedures have become more efficient as a result of our work – and also safer for patients. The field continues to advance at a fast rate and it is very interesting to witness this evolution first hand. I am proud to be part of a highly skilled Finnish community of specialists. It feels meaningful to take part in improving the lives of people who have encountered serious illnesses and disabilities," Horelli reflected.

"It is a privilege to have a company like Planmeca in Finland, as it provides us with support and sophisticated technology – ultimately helping patients," Dr. Törnwall summarised.

Clinica Berg improves performance **with Planmeca dental units**

IMAGES CLINICA BERG

DR. EDGAR BERG has been using Planmeca Compact™ i dental units at his private practice in Temuco, Chile, for over a year now. The experience has been a positive one and has provided Dr. Berg and his staff with instant benefits.

"WE have two **Planmeca Compact™ i Touch** dental units at our dental clinic and one **Planmeca Compact™ i Classic**. We have now had the units for over a year. They have improved our performance and made our staff more committed to the clinic.

I visited Planmeca's production facilities in Helsinki, Finland, before acquiring the units. Planmeca is a globally recognised strong brand and its Chilean distributor is also reliable. When I compared Planmeca's units to available options from other manufacturers, the decision came down to the design and features of the units.

The over-the-patient delivery system functions very nicely compared to other brands and the movable spittoon is highly convenient for patients – especially elderly ones. The electric micromotor of the units also works very well. In addition, the dental unit light can be turned on and off without touching it which has been a very handy and hygienic function.

The comfort of the patient chair's **Ultra Relax™** upholstery makes a real difference when compared to other dental units. Patients also find the modern and elegant design appealing.

Overall I would say it is very comfortable and relaxing to work with these units."

> The comfort of the chair makes a real difference"

ABOUT DR. EDGAR BERG

Dr. Berg is a Dental Surgeon specialising in periodontics and oral implantology. He graduated from the University of Concepción in 1986 and today runs a private practice in Temuco, Chile. Dr. Berg is also an undergraduate and postgraduate lecturer at Universidad Mayor, as well as an International Team of Implantology (ITI) Fellow.

COPY SANNA TOLMUNEN

Kyöstilä and Nakao became Honorary Doctors of Medicine

A TOP HAT and a sword might sound like a thing of the past, but in Finland they are still a sign of great recognition in the academic world. The doctoral hat and sword are given to everyone getting a doctorate as prestigious symbols. In the university the doctor's hat symbolises freedom of science. The sword is luckily not used for fighting on a battlefield, but as a spiritual symbol for the noble task of defending the truth. Conferment of an honorary doctorate is the highest honour a university can give to a person.

HEIKKI KYÖSTILÄ AWARDED AN HONORARY DOCTORATE BY THE UNIVERSITY OF OULU

Planmeca Group's President and founder, **Heikki Kyöstilä**, was recently awarded an honorary doctorate of medicine at the University of Oulu, one of the largest universities in Finland. Kyöstilä was awarded the honorary doctorate in recognition of his contribution to the field of dentistry and oral health and its development.

"Quality education and research are the cornerstones of expertise and development. Planmeca Group has collaborated with the University of Oulu ever since dentistry education started there in 1973. I am very honoured to be recognised by the university this way," Kyöstilä said.

The University of Oulu confers honorary doctorates to people who have distinguished themselves on the fields of science represented in the university, and many of them have collaborated significantly with researchers of the university. In addition, invitations are made to those who have distinguished themselves significantly in other ways in the society and for the benefit of operations of the University of Oulu. The university conferred 23 honorary doctorates altogether at their conferment ceremony in May 2017.

Image: Noora Slotte / Studio P.S.V.

Planmeca Group's President and founder, Heikki Kyöstilä

Image: Esko Keski-Oja

President and CEO of GC Corporation, Makoto Nakao.

MAKOTO NAKAO BECAME HONORARY DOCTOR OF THE UNIVERSITY OF TURKU

The University of Turku, located in southwestern Finland, awarded long-term President and CEO of GC Corporation, **Makoto Nakao**, an honorary doctorate of medicine. As one of the world's largest companies producing and developing oral healthcare materials, GC Corporation is another important actor in the field of oral health.

University of Turku grants honorary doctor titles and the related insignia to people who are considered to be deserving of such an acknowledgement based on their scientific or cultural achievements or on their merits in promoting science, arts or culture. University of Turku conferred 12 honorary doctorates altogether in their conferment ceremony in spring 2017.

COPY ALEKSANDRA NYHOLM IMAGES NOORA KYÖSTILÄ & JUHA KIENANEN

NIDE raises the bar for dental education worldwide

Nordic Institute of Dental Education

THINGS are taking flight at the Nordic Institute of Dental Education. In its first years, the company has held over 20 courses and hosted participants from over 30 different countries. Next, NIDE is looking forward to taking its brand of high-quality dental education even further.

THE Nordic Institute of Dental Education (NIDE) is a joint venture by Planmeca and the University of Turku. Founded in 2014, the company offers lecture courses and hands-on training in the most current topics in today's dentistry, and held its first courses in May 2015. A lot has happened since then. By now NIDE has organised 23 successful courses and hosted over 2015 participants from 35 different countries – including Belgium, Croatia, Egypt, Finland, China, Morocco, New Zealand, Norway, Portugal, Russia and Zimbabwe.

NIDE CEO **Jenni Pajunen** says the first years of courses has been exciting. "Building a whole new type of organisation like NIDE has been both demanding and rewarding," Pajunen explains. "It has meant a lot of long hours for our team, but now the hard work is paying off."

And indeed it is – the feedback from the courses has exceeded all expectations and the cooperation between Planmeca and the University of Turku is running smoothly. Thanks to its unique concept, NIDE is able to draw on both the academic expertise at the university and the technological knowledge at Planmeca – not to mention Planmeca's cutting-edge dental technology.

A MODERN APPROACH TO DENTISTRY

NIDE organises continuing education courses both at Planmeca headquarters in Helsinki, Finland, and the University of Turku in Turku, Finland. Last October, NIDE even organised a course in Shanghai, China.

NIDE's courses cover a wide range of topics from digital imaging and CAD/CAM to aesthetic and restorative dentistry, with the educational approach firmly rooted in digital dentistry. Of these, the courses on 3D imaging and CAD/CAM have been especially popular, but indeed all courses have received praise from participants. Visitors have particularly appreciated the practical skills they have acquired in the courses, the expertise of the lecturers, and NIDE's forward-thinking approach to dentistry overall.

"When a dental professional leaves our course saying they have learned something which has improved their processes somehow, that is the best feedback we can receive," says Pajunen of the positive response. "It's feedback like that which really drives us forward."

DENTAL EDUCATION OF INTERNATIONAL DISTINCTION

NIDE's quality of education has also gained international recognition. In May 2016, the company became the first Nordic education provider to be recognised by the American Dental Association's prestigious Continuing Education Recognition Program (*ADA CERP*).

Pajunen says the distinction is a testament to NIDE's competence and success as a provider of quality dental education. "ADA's evaluation process is very rigorous and the qualifications for approval are strict. The CERP recognition serves as confirmation both to us and our customers that we really are doing something very, very right."

Moreover, the University of Turku offers European Credit Transfer and Accumulation System (ECTS) credits for all NIDE courses, enabling participants to get their NIDE studies acknowledged in their home countries as well. Add to that NIDE's new courses in Russian and French and it is clear why and how the company has become a force to be reckoned with in the global dental education community.

ENVISIONING A FUTURE OF INNOVATION

Indeed, the future looks bright for NIDE. Although the focus is presently on refining the current course offering and consolidating NIDE's position in the market, the company is constantly eyeing new options and potential areas of growth – both geographically and content-wise. Visions exist of e.g. blended learning concepts and expanding further into the international market.

As new technologies continue to emerge in the dental industry, CEO Pajunen wants NIDE's curriculum to reflect these changes, but emphasises at the same time that all teaching must be based on technology that is tried-and-tested. "An absolutely crucial part of our product is that all our teaching is evidence-based and that our lecturers are well-versed in the technology being presented. With new technologies this gathering of evidence and experience can – and should – be a long process," Pajunen explains.

"That said, we also want speakers who are constantly looking ahead – dental experts who are comfortable working in the digital era and with the technological innovations that are fast becoming the new standard in dental care." Accordingly, NIDE's speakers are carefully selected from the most experienced lecturers in dentistry worldwide as well as Planmeca's own ranks of highly qualified product specialists. This pairing gives all NIDE courses the ideal combination of practical experience, academic knowledge and modern thinking.

A UNIQUE COMBINATION OF LECTURES AND LEISURE

Dental education is a growing sector in dentistry, but in a field of many players, NIDE stands out of the crowd. "Our aim is not to put out something that is already on the market – another lecture course on imaging or CAD/CAM or whatnot," says Pajunen. "Instead, what we offer is an all-round experience – comprehensive and stimulating lectures combined with hands-on training and enjoyable leisure activities

in a one-of-a-kind location. A NIDE course is not just a lecture schedule – it is a complete package."

Pajunen says the unique combination of competence from NIDE, Planmeca, and the University of Turku is what enables NIDE to maintain a high standard of education. "We believe we have set the bar high for dental education worldwide – and we intend to keep it there."

Nordic Institute of Dental Education (NIDE)

- Continuing education courses for dental professionals from all around the world
- Lectures and hands-on training in Helsinki and Turku, Finland
- Courses offered in English, Russian and French
- ECTS credits for all courses from the University of Turku
- ADA CERP Recognized Education Provider

For more information on the courses offered and how to register, please visit: www.nordicdented.com or contact us at info@nordicdented.com.

> It's been the best conference I've ever been to. I'm so excited to go home and utilize this in my day-to-day work.

Dr. Karyn Becconsall
Oral surgeon
New Zealand

NEW COURSE

Implants from plan to scan

4–5 September 2017

Helsinki | 2 days | 13 CE credits

Lecturers:
Walter Renne DMD
Mark Ludlow DMD
UNITED STATES

NEW COURSE

Aesthetic restorations with CAD/CAM

7–8 September 2017

Helsinki | 2 days | 13 CE credits

Lecturers:
Walter Renne DMD
Mark Ludlow DMD
UNITED STATES

NEW COURSE

Digital implant workflow course

11–12 December 2017

Helsinki | 2 days | 13 CE credits

Lecturer:
Alexandros Manolakis
DMD
GREECE

Digital dentistry winter school

8–12 January 2018

Helsinki | 4.5 days | 26 CE credits

Combination of *3D imaging and diagnostics* & *Fundamentals of CAD/CAM* courses!

Lecturers include:
Bart Vandenberghe
DDS, MSc, PhD
BELGIUM

Aesthetic dentistry

7–8 June 2018

Helsinki | 2 days | 13 CE credits

Lecturers:
Irena Sailer Professor, SWITZERLAND
Vincent Fehmer MDT, SWITZERLAND
Pekka K. Vallittu Professor, FINLAND
Aki Lindén SDT, FINLAND

Sign up at:
www.nordicdented.com

PLANMECA | Turun yliopisto University of Turku

ADA C·E·R·P® | Continuing Education Recognition Program

Nordic Institute of Dental Education is an ADA CERP Recognized Provider. ADA CERP is a service of the American Dental Association to assist dental professionals in identifying quality providers of continuing dental education. ADA CERP does not approve or endorse individual courses or instructors, nor does it imply acceptance of credit hours by boards of dentistry.

Nordic Institute of Dental Education

Planmeca Newsroom

– all online content in one place

Our new online newsroom is the perfect place to keep track of all things Planmeca. In the Planmeca Newsroom you can find all online content in one place – from news items to press releases and blog entries to social media posts. ***Step into the official online world of Planmeca!***

Follow us on social media

Did you know that Planmeca and other Planmeca Group companies are active on a wide range of social media? You can follow our latest activities and join in on the discussions on the following channels.

PLANMECA
Twitter twitter.com/Planmeca
Facebook facebook.com/planmecaoy
Instagram instagram.com/planmeca_official
YouTube youtube.com/PlanmecaGroup
LinkedIn linkedin.com/company/planmeca-oy
Vimeo vimeo.com/planmecaoy

Planmeca is also active on the Chinese social media channels Weibo, Youku and WeChat.

PLANMECA USA, INC.
Twitter twitter.com/planmecausa
Facebook facebook.com/PlanmecaUSA
LinkedIn linkedin.com/company/planmeca-inc

PLANMECA UK
Twitter twitter.com/planmecauk
Facebook facebook.com/PlanmecaUK

PLANMED
Facebook facebook.com/planmedofficial
Instagram instagram.com/planmed_official
YouTube youtube.com/channelplanmedoy
LinkedIn linkedin.com/company/planmed-oy

LM-DENTAL
Twitter twitter.com/lm_instruments
Facebook facebook.com/lmdentalfi
YouTube youtube.com/LMDental

PLANMECA E4D TECHNOLOGIES
Twitter twitter.com/planmecacadcam
Facebook facebook.com/E4DTechnologies
LinkedIn linkedin.com/company/d4d-technologies

NORDIC INSTITUTE OF DENTAL EDUCATION
Facebook facebook.com/nordicdented
LinkedIn linkedin.com/company/nordic-institute-of-dental-education
Vimeo vimeo.com/user40307955

COPY LINDA ESSÉN
IMAGES LM-DENTAL

LM Dental Tracking System™

Instrument intelligence with unique identification technology

LM-DENTAL is one of the leading manufacturers of ergonomic dental instruments in the world. The company actively works with dental clinicians to ensure its product development remains at the cutting edge. This collaboration has revealed many challenges related to material handling and traceability – with increasing requirements for patient safety and documentation often emphasised. Logistics and instrument maintenance could also be managed better and more effectively. To help tackle these challenges, LM-Dental has developed a unique tracking system.

LM feel the difference

NEW INTELLIGENCE FOR DENTAL CLINICS

The **LM Dental Tracking System™** *(DTS)* is the first commercially available system in the dental industry to efficiently track and monitor dental instruments and materials using RFID technology. An advanced identification chip in the ergonomic LM-ErgoSense instrument allows them to be reliably traced at every step by simply scanning the tiny RFID chip. The built-in identification technology creates a unique dental tracking system together with our scanning readers and server software. The system optimises and streamlines material flows at dental clinics – both in maintenance and clinical care.

TURNING INTELLIGENCE INTO IMPROVEMENTS

The scanned dental instruments and materials are tracked with readers that record the location and status of all tagged materials. The information is sent to a server software that tracks and verifies activity cycles of tagged materials – allowing clinicians to trace where instruments and materials are as well as who has been using them and on whom. The software also generates easy analytical reports about the items registered in the system, which improves material handling, increases cost efficiency and helps to ensure that only safe and clean instruments are used. This elevates patient safety to a whole new level!

NEXT GENERATION DEVELOPMENTS

LM-Dental's aim in product development is to innovate together with clinicians. In addition to instrument intelligence and ergonomics, the LM-ErgoSense instrument offers new opportunities with its contemporary coating technology. The Sharp Diamond sharpen free periodontal and Dark Diamond non-stick restorative instruments are finally a reality.

ABOUT LM-DENTAL

LM-Dental develops, produces and markets high-tech dental hand instruments and their tracking system together with ultrasonic devices, orthodontic appliances and more. With the innovative product design and high-tech production technology we are the fastest growing manufacturer of hand instruments in Europe and the market leader in all Nordic countries. Our products are produced in Finland and Sweden and over 80 % are exported globally. LM-Dental has been part of Planmeca Group since 1999.

Key advantages of LM Dental Tracking System™

KNOW THE EXACT LOCATION OF ALL INSTRUMENTS AND MATERIALS

"All of our instruments have been tagged, which means we can keep track of them at all times – from their dispensation to utilisation, processing, sterilisation, and return to storage.

The LM Dental Tracking System ensures that we always have full control over the hygiene status of our instruments. We can also precisely document which of them students have been using and on which patients, as well as when they have been sterilised. We can define which instruments different students are allowed to use. We can even follow when and for how long students work on different patients.

Through analysing statistics on their flow, we can implement a standard procedure for periodic control of instruments, e.g. sharpening of scalers.

Overall, tracking instruments serves many purposes and can contribute to better and cheaper operations at a dental office – especially in larger settings."

Bo Danielsen (D.D.S., MBA)
Head of the School of Oral Health Care
University of Copenhagen, Denmark

Register your products online!

Have you heard that you can easily activate warranty coverage for your Planmeca products by registering them online?

To register, you only need to enter a products serial number and installation date as well as a valid email address. Registration is available in multiple languages.

Register your products today at www.planmeca.com/register!

PLANMECA

Asentajankatu 6 | 00880 Helsinki | Finland | tel. +358 20 7795 500 | fax +358 20 7795 555 | sales@planmeca.com | www.planmeca.fr

10027180/0617/en