

planworld

PLANMECA CUSTOMER MAGAZINE 2015

ONE SOFTWARE – ALL SOLUTIONS



6

The completely renewed Planmeca Romexis®

12

Planmeca Romexis® Smile Design revealed

18

Pioneering Planmeca Ultra Low Dose™ protocol

PLANMECA
Better care through innovation

Planmeca Romexis® 4.0.R

One software – all solutions

Imaging and CAD/CAM in one system



The completely redefined Planmeca Romexis® 4.0

Discover Planmeca Romexis® 4.0 – the brains behind Planmeca's products. Built around an improved user-friendly interface, the new version of the unequaled all-in-one software combines 2D and 3D imaging with the complete CAD/CAM workflow, while also providing innovative connectivity with Planmeca equipment.

Welcome the new era of digital dentistry!



Find more info and your local dealer
www.planmeca.com

PLANMECA



Planmeca Oy Asentajankatu 6, 00880 Helsinki, Finland. Tel. +358 20 7795 500, fax +358 20 7795 555, sales@planmeca.com

planworld

PLANMECA CUSTOMER MAGAZINE

Please contact us by email at
editor@planmeca.com

Editor-in-Chief

Maarit Vannas, tel. +358 20 7795 306
maarit.vannas@planmeca.com

Editors

Daniel Purssila
Laura Siira

Layout

Perttu Sironen

Publisher

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

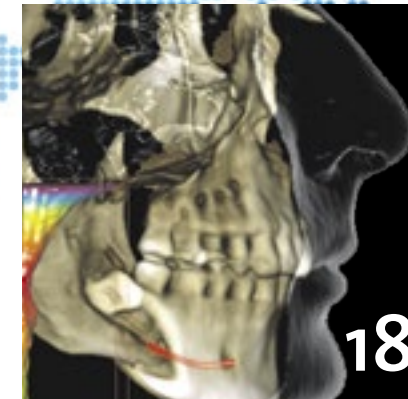
Imprint

Libris Oy, Helsinki, Finland

Cover

IDS Highlights 2015

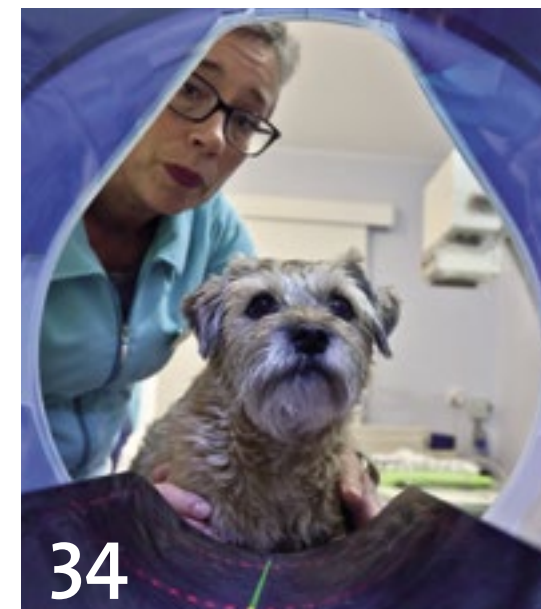
All rights reserved. The contents of this magazine are copyright and must not be reproduced without the written permission of the publisher. For permission requests for reproducing the contents, please contact the Editor-in-Chief.



18



38



34



26

CONTENTS

| | | | |
|----|--|----|--|
| 5 | Exciting Planmeca innovations at IDS 2015 | 29 | New imaging capabilities for Planmed Verity® introduced |
| 6 | Product News | 30 | Planmeca broadens its scope to the field of educational business |
| 17 | GC President visits Planmeca | 33 | Planmeca expands into the veterinary and medical technology businesses |
| 18 | Pioneering Planmeca Ultra Low Dose™ protocol | 34 | Strong growth of veterinary dentistry |
| 20 | CBCT with CAD/CAM technology: The perfect combination | 36 | A genuinely new, ergonomic hand instrument: LMErgoSense |
| 22 | Access Planmeca product information – wherever you are | 38 | King of Sweden introduced to a new standard of dental technology at Planmeca |
| 24 | Creating a modern practice with digital dentistry | | |
| 26 | Crisp images of the upper neck with Planmeca's CBCT device | | |



The Planmeca stand at IDS 2013.

Exciting Planmeca innovations at IDS 2015

Dentistry is at an exciting crossroads. The digital dental revolution has already begun and soon 3D technology is going to transform the entire field. In a fully digital workflow, it will be of paramount importance that all devices and software work together completely seamlessly. This reality is at the core of all Planmeca product development.

The **International Dental Show** in Cologne, Germany is a great chance to get a first-hand look at our latest innovations and leading dental technology. We are extremely proud to welcome several new additions to our extensive product lineup this year.

Our revolutionary all-in-one software platform **Planmeca Romexis® 4.0** is the brains behind all our products. It provides extended connectivity with Planmeca dental equipment, and is also the first software in the world to combine 2D and 3D imaging and the entire CAD/CAM workflow. Planmeca Romexis 4.0 introduces a radically improved user interface, as well as a complete selection of features designed for the needs of different specialists – welcoming the new era of digital dentistry.

The future will not only be digital, but also increasingly mobile. Our user-friendly **Planmeca mRomexis™** image viewer has been designed for flexible multiplatform use. The mobile application presents our market-leading usability to Android users for the first time – and is also available for iOS devices and as a browser-based desktop application. Planmeca mRomexis is the ideal solution for fast and light viewing of images, as it allows users to stay on top of their workflow even when on the go.

Planmeca 4D™ Jaw Motion is the only true CBCT integrated solution for tracking, recording, visualising and analysing jaw movement in 3D. It provides valuable visualisation and measurement data of mandibular 3D movements in real-time.

The tracking system will soon be available as an option for the **Planmeca ProMax® 3D Mid** and **Max X-ray** units – opening up new dimensions in diagnostics.

Planmeca Romexis® Smile Design is an intuitive software program that allows dentists to easily create harmonious new smiles for patients in a matter of minutes. It is a powerful tool for smile designing, visual communication and treatment planning. The software will reduce the possibility of misunderstandings and increase case acceptance.

These are some of the exciting new innovations we will be presenting at IDS – but there is also much more to discover. We are going to guide dentistry into the future like no one else can: Planmeca has always been a forerunner in building a rich ecosystem of devices, software and services. Our unrivaled product portfolio covers everything needed in a high tech dental clinic: all 2D and 3D imaging modalities together with digital dental units, CAD/CAM systems and comprehensive software solutions.

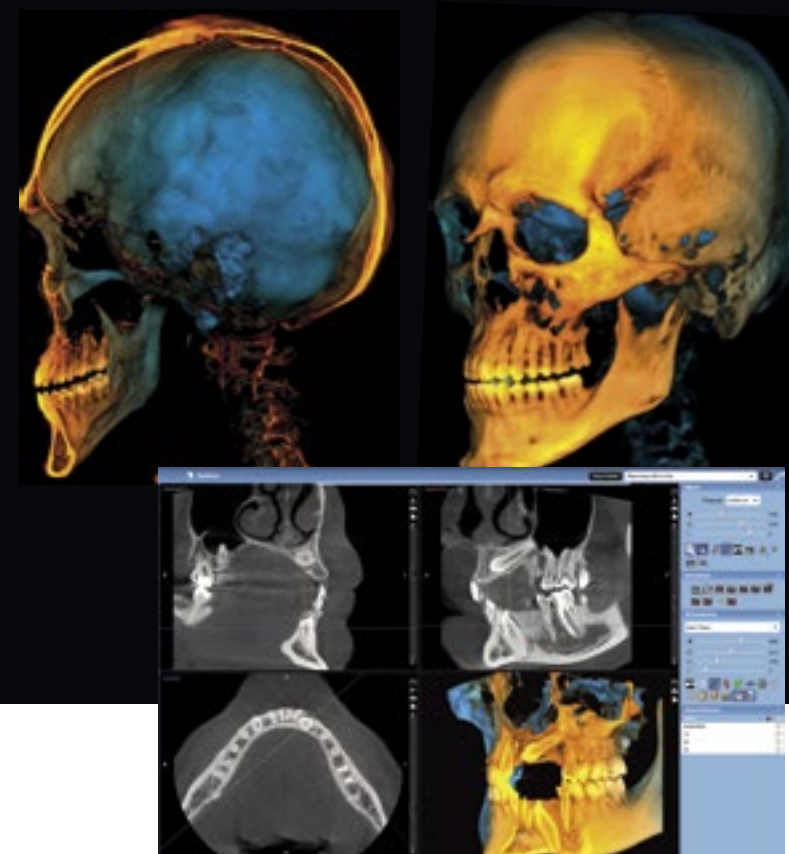
Our strong commitment to R&D ensures that we will remain at the cutting edge of our industry and our dedication to continuous development enables us to offer the most inspiring working environment for dental professionals worldwide.

I am looking forward to
another great year for dentistry!

Heikki Kyöstiä
President

Planmeca Romexis® 4.0

– a completely renewed all-in-one software



Planmeca Romexis® is the first dental software in the world to combine 2D and 3D imaging and the complete CAD/CAM workflow, while also providing extended connectivity with Planmeca dental equipment. The new version 4 of the software introduces an improved user interface that will ease the daily workflow of dental professionals around the world. Available for Apple Mac OS and Microsoft Windows, Planmeca Romexis 4.0 allows Planmeca products at a dental clinic to work together seamlessly.

The revolutionary **Planmeca Romexis®** software platform offers a multitude of tools and features to meet the demands of different specialists. Version 4 of the software redefines the all-in-one experience, further improving user-friendliness and presenting a wide selection of enhanced modules. Optimised for Full HD screens, the fresh new look and design of the software corresponds with the fluid usability that has come to define Planmeca products.

First-class usability

Planmeca Romexis 4.0 delivers a user experience that is second to none. Its innovative dashboard interface utilises a flexible tile-based layout, helping users streamline their workflow and do more

with fewer clicks. The software now dedicates more room for patient images, while its redesigned toolbars enhance usability.

In addition, the **Planmeca Romexis® 3D Implant Planning** module has been upgraded with several awaited tools, including implant alignment, safety areas with alerts, as well as a custom abutment designer. Version 4 also adds many essential functional enhancements, most importantly its 3D object browser – a feature that allows easy management of annotations and implant simulation elements.

A true all-in-one experience

“We have strived to build a complete ecosystem of devices, software and

services that communicate with each other smoothly. Planmeca Romexis has always been integral to this process, as it is essentially the brains behind all our products,” remarks Ms. **Helianna Puhlin-Nurminen**, Vice President, Digital Imaging and Applications division at Planmeca. “The new software version is a great step forward in providing users with an even smoother workflow. With Planmeca Romexis 4.0, the future of digital dentistry has arrived.”

Planmeca is a forerunner in developing a complete range of solutions for dental professionals. The Planmeca Romexis software platform is at the heart of this endeavour – supporting the most versatile range of 2D and 3D imaging modalities and integrating the entire chairside CAD/CAM workflow from intraoral scanning to prosthetic designing and milling in one software. The **Planmeca Romexis® Clinic Management** module further provides extensive connectivity and real-time information of Planmeca dental units, X-ray devices and milling units. ■

Planmeca Romexis® Clinic Management

now supports all Planmeca digital dental units, Planmeca ProMax® 2D and 3D X-ray units and the Planmeca PlanMill® 40 milling unit



NETWORK



The pioneering **Planmeca Romexis® Clinic Management** software module now offers real-time information and monitoring of Planmeca's dental units, X-ray devices and the **Planmeca PlanMill® 40** milling unit, bringing unique benefits and services to their different user groups:

- Dentists can store their personal dental unit settings (chair positions and instrument settings) to Planmeca Romexis Clinic Management and access them from any dental unit at the clinic.
- Dental assistants, who are also often responsible for infection control, can make sure that infection control procedures have been performed properly.
- Planmeca PlanMill 40 users can monitor the status of the milling units, as well as keep track of the estimated completion times of their tasks.
- Members of the technical staff can remotely monitor the entire clinic in real time. All dental, X-ray and milling unit usage information is also recorded to a database, which provides valuable information when solving technical problems. Remotely performed mass dental unit software updates result in significant time and cost savings.
- Clinic managers receive reliable information on dental unit usage hours, as well as the number and type of completed milling jobs and taken X-ray images. This data can be used to improve clinic efficiency and it is also valuable when planning new investments. ■

Stay mobile with the
Planmeca mRomexis™
image viewing application

New
**Planmeca
mRomexis™**
for iOS, Android
and browser



Planmeca mRomexis™ is a fast, easy and light image viewing application designed for flexible multiplatform use. It enables quick access to images, allowing dental professionals to conveniently communicate with other specialists and patients wherever they are. Planmeca mRomexis is available for the iOS and Android mobile operating systems, and as a browser-based desktop application.

Building on the success of the popular **Planmeca iRomexis™** mobile application, **Planmeca mRomexis™** is the ideal solution for fast and easy viewing of 2D and 3D images, **Planmeca PlanScan®** 3D optical impressions and **Planmeca ProFace®** facial photos. It introduces several fresh features, such as a recent images list, multiplatform support and multiplanar reconstruction views of 3D images. Planmeca mRomexis helps users stay on top of their workflow, ensuring that the images most relevant to their next task are always readily at hand.

Planmeca mRomexis allows users to access images in the **Planmeca Romexis®** database on a local network, or carry

images with them on their mobile devices. Images can also be flexibly shared via the secure **Planmeca Romexis® Cloud** image transfer service.

"When designing Planmeca mRomexis, we put a strong emphasis on usability", comments Ms. **Helianna Puhlin-Nurminen**, Vice President, Digital Imaging and Applications division at Planmeca. "The application ensures easy and straightforward sharing of vital images for users who are often on the go – allowing them to always stay informed."

The iOS and Android versions of Planmeca mRomexis are available on iTunes and Google Play. ■



Download the Planmeca mRomexis™ application for iOS and Android from the App Store or Google Play.



Planmeca PlanScan®

is the world's first dental unit integrated intraoral scanner

Planmeca's full range of open CAD/CAM solutions for dentists and dental technicians includes the world's first dental unit integrated intraoral scanner – **Planmeca PlanScan®**. The scanner's unique integration with Planmeca dental units guarantees a smooth workflow, as real-time scanning data is now immediately available from the chairside tablet device. Scanning can also be controlled from the dental unit's wireless foot control for hands-free operation.

A smooth scanning workflow

The ultra-fast and accurate **Planmeca PlanScan®** can now be easily integrated with any digital Planmeca dental unit. Thanks to the dental unit's Full HD tablet device, the dental team has constant and optimal access to live scanning data. This allows them to focus on the treatment area without any distractions. The scanner also provides practical sound guidance to ensure optimal data capture.

Unique foot controlled scanning

What also sets Planmeca PlanScan apart from other scanners is that it can be conveniently controlled from the dental unit's wireless foot control, leaving the user's hands free for scanning and patient treatment at all times. The foot control allows easy toggling between prep, opposing and buccal views, so that the dentist can focus on scanning without interruptions. Hands-free operation also guarantees impeccable infection control.

Easy and flexible use

Planmeca PlanScan has been designed for an efficient workflow – it is used just like any other dental instrument and shared effortlessly between different

users. The plug-and-play scanner can also be easily installed in different dental units and different rooms. The flexible licensing system enables different CAD/CAM work phases (scanning, designing and manufacturing) to be performed simultaneously by different users. "This is a truly innovative product that guarantees a smooth and effortless chairside workflow and lets dentists concentrate on their patients. The system is built on our **Planmeca Romexis®** software

platform – the first software in the world combining CAD/CAM and X-ray imaging. This means that all images and scans are conveniently available through one user interface", says Mr. **Jukka Kanerva**, Vice President, Dental Care Units and CAD/CAM at Planmeca. "Together with our other **Planmeca CAD/CAM™** solutions, Planmeca PlanScan contributes to better patient care and helps to increase the clinic's productivity." ■

Planmeca ProSensor® HD

elevates the standard of intraoral dental imaging

Planmeca further strengthens its position in the intraoral imaging market with a new addition to its product portfolio. The **Planmeca ProSensor® HD** intraoral sensor offers a unique combination of image quality, patient-centred design and usability. It sets a new standard for intraoral dental imaging – ensuring successful results in all treatment situations.

Planmeca **ProSensor® HD** is an innovative new intraoral sensor that provides users with many key benefits. It produces outstanding images in a matter of seconds, while providing usability that assures smooth operation at all times. The intraoral sensor is fully compatible with both Mac OS and Windows.

Cutting-edge image quality and usability

With an image resolution of over 20 lp/mm, Planmeca ProSensor HD offers true HD quality. Supporting detailed

diagnosis, the intraoral sensor with a fibre-optic layer captures sharp, low noise and high contrast images. The wide dynamic range of the sensor guarantees consistent results.

Planmeca ProSensor HD is always easily at hand. It can be integrated into the **Planmeca ProX™** intraoral X-ray unit, or connected to through Ethernet or a USB port. The sensor has a sophisticated magnetic connector that is easy to attach using only one hand, while the white colour of the sensor's cover enhances visibility to ease positioning. The elegant control box with a distinguished design is equipped with a colour-coded LED light, providing instant visual feedback of the imaging procedure.

Durable patient-centred design

Planmeca ProSensor HD has been designed with patient comfort and durability at mind. Capturing an image takes only a few seconds and the sensor's rounded edges make imaging procedures

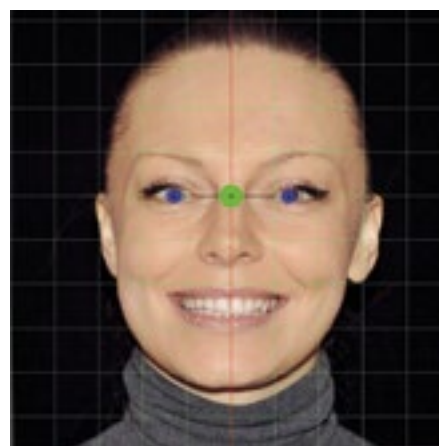
comfortable for patients. To fulfil all intraoral imaging needs, the sensor is available in three different sizes.

Planmeca ProSensor HD has been built to last. For optimal endurance, the sensor cable includes only two wires and Planmeca's special five-year warranty program ensures that the sensor is a safe investment.

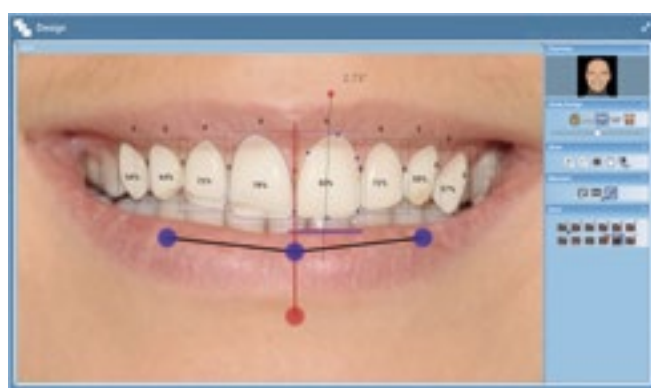
"Planmeca ProSensor HD is a refined combination of usability, design and image quality," notes Ms. **Helianna Puhlin-Nurminen**, Vice President, Digital Imaging and Applications division at Planmeca. "The intraoral sensor's clever design details ensure an efficient workflow, while also taking patients' needs into consideration. Planmeca ProSensor HD provides outstanding images without compromise – quickly, easily and consistently." ■



Planmeca Romexis® Smile Design allows dentists to create harmonious new smiles for patients



1 Align and calibrate



2 Diagnose and design



3 Simulate and present

Planmeca has made a strong commitment to improve the daily workflow of dentists all over the world. The newest addition to the company's vast product portfolio is **Planmeca Romexis® Smile Design** – a powerful and intuitive software program developed for smile designing, visual communication and treatment planning. It revolutionises dentists' communication with other specialists, dental labs and patients – resulting in a higher rate of case acceptance, as well as an improved realisation of created designs.

Planmeca Romexis® Smile Design allows dentists to design new smiles using a simple 2D facial smile photo and intelligent teeth silhouettes. As is the Planmeca standard, the software enables a workflow that is characterised by its ease-of-use. Designing a smile is a straightforward process – it takes only a matter of minutes and can be done with a few clicks.

Exceptional ease-of-use

All the needed tools for designing warm new smiles are included in Planmeca Romexis Smile Design, as the software allows manipulation of the position, shape and dimensions of teeth – individually or as a group. Planmeca Romexis Smile Design automatically shows the dimensions and ratio of tooth height to width and also provides all the required measurement tools for analysing proportions of the teeth and face. Modifying teeth has never been as easy and designs can be completed precisely according to patients' distinctive needs. The result is a photorealistic simulation of a patient's new harmonious smile.

Improved communication

Planmeca Romexis Smile Design is a powerful tool for marketing, patient education and communication. The software actively involves patients in the designing process and allows them to see the full potential of their smiles beforehand. Foreseeable results help to build trust and decrease uncertainty, as patients can rest assured that the outcome of the treatment will match their expectations.

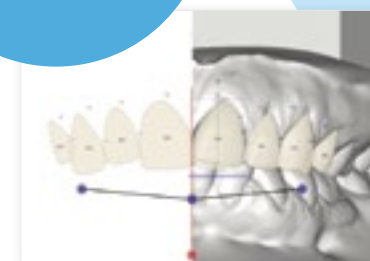
Planmeca Romexis Smile Design also provides dentists with the means to visually and numerically communicate with other specialists and dental laboratories in determining the correct treatment options for patients. Interdisciplinary collaboration improves the quality of care significantly and reduces the possibility of misunderstandings. Designs can be printed out or securely sent to patients, dental labs or other specialists via the **Planmeca Romexis® Cloud** file transfer service.

Compatibility with CAD/CAM and orthodontic software

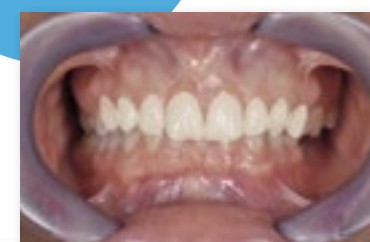
Planmeca Romexis Smile Design is more than a visualisation tool, as finalised 2D designs can act as a visual guide or reference for physical mockup designing, as well as final restoration. "Completed smile designs can be easily connected to a 3D reality, as they can be exported on to **Planmeca PlanCAD® Easy, Planmeca Romexis® 3D Ortho Studio**, or any other orthodontic or CAD/CAM software," says Ms. **Helianna Puhlin-Nurminen**, Vice President, Digital Imaging and Applications division at Planmeca. "Planmeca Romexis Smile Design is an invaluable link between treatment planning and implementation, as it revolutionises the way dentists communicate with labs and specialists visually."

Planmeca Romexis Smile Design is available for Windows and Mac OS. It is sold as a standalone version, as well as a module for the **Planmeca Romexis®** all-in-one software.

Export the design on to CAD/CAM and orthodontic software for visual reference in the design process



Precise treatment planning
Import and align a retractor image for gumline design



Planmeca announces advanced Planmeca 4D™ Jaw Motion

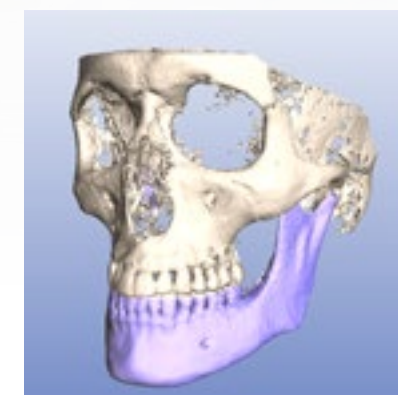
Planmeca is expanding its extensive product range with an unmatched method for tracking jaw movement. The standard-setting **Planmeca 4D™ Jaw Motion** system offers incomparable visualisation and measurement data of mandibular 3D movements in real-time. It will be available as an option for the **Planmeca ProMax® 3D Mid** and **Max** X-ray units.

Planmeca 4D™ Jaw Motion is the only true CBCT integrated solution for tracking, recording, visualising and analysing jaw movement in 3D. Utilising CBCT imaging and **Planmeca ProMax® 3D ProFace** cameras, Planmeca 4D Jaw Motion tracks and visualises jaw movements in real-time, requiring no additional hardware in the process. Captured 3D visualisations are displayed in the **Planmeca Romexis®** imaging software without delay, allowing immediate diagnostics. All data can also be recorded for later use and analysis.

With Planmeca 4D Jaw Motion, it is possible to measure and record the movement path of one or more points of interest in a 3D image. For occlusion analysis, digital dental models can be aligned with a CBCT image. All movement and measurement information can be exported to 3rd party software in an XML or CSV format for analyses and treatment planning.

"Planmeca 4D Jaw Motion provides users with extremely valuable quantitative data regarding lower jaw movement, as well as other information unattainable with a static 3D image", states Ms. **Helianna Puhlin-Nurminen**, Vice President, Digital Imaging and Applications division at Planmeca.

Planmeca 4D Jaw Motion can be used for temporomandibular disorder (TMD) diagnostics, mandibular movement analysis, articulator programming, as well as preoperative planning and postoperative treatment verification.





Planmeca's cutting-edge endodontic imaging mode – detailed images without noise or artefacts

Specifically designed for endodontic studies, Planmeca's advanced endodontic imaging mode provides perfect visualisation of even the finest anatomical details. It is available for all X-ray units belonging to the **Planmeca ProMax® 3D** family and is ideal for endodontics, as well as other cases that require imaging of small anatomical details, such as imaging of the ear. The program produces extremely high-resolution images with a very small voxel size (only 75 µm).

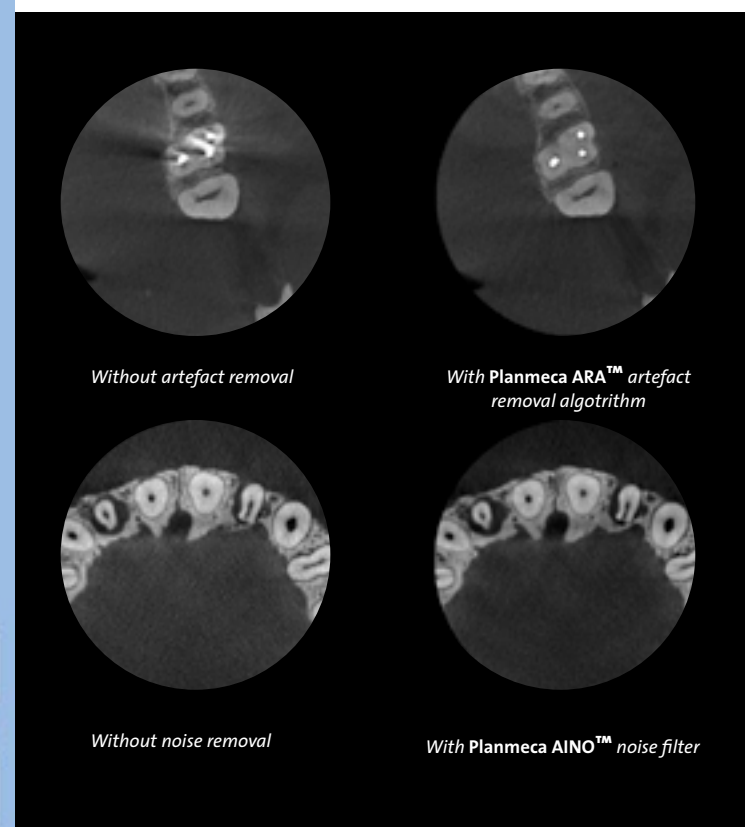
Thanks to the intelligent **Planmeca AINO™** noise removal and **Planmeca ARA™** artefact removal algorithms, noise-free and crystal-clear images are produced.

Planmeca ARA removes artefacts efficiently

Metal restorations and root fillings in the patient's mouth can cause shadows and streaks in CBCT images. The intelligent Planmeca ARA Artefact Removal Algorithm removes these artefacts efficiently from Planmeca ProMax 3D images.

Planmeca AINO removes noise from CBCT images

A particularly low radiation dose or small voxel size can cause noise in 3D X-ray images. The new Planmeca AINO Adaptive Image Noise Optimiser is an intelligent noise filter that reduces noise in CBCT images without losing valuable details. The filter improves image quality in the endodontic imaging mode, where noise is inherent due to the extremely small voxel size. It is also especially useful when using the **Planmeca Ultra Low Dose™** protocol, where noise is induced by the particularly low dose. Planmeca AINO also allows reducing exposure values and consequently the radiation dose in all other imaging modes. ■

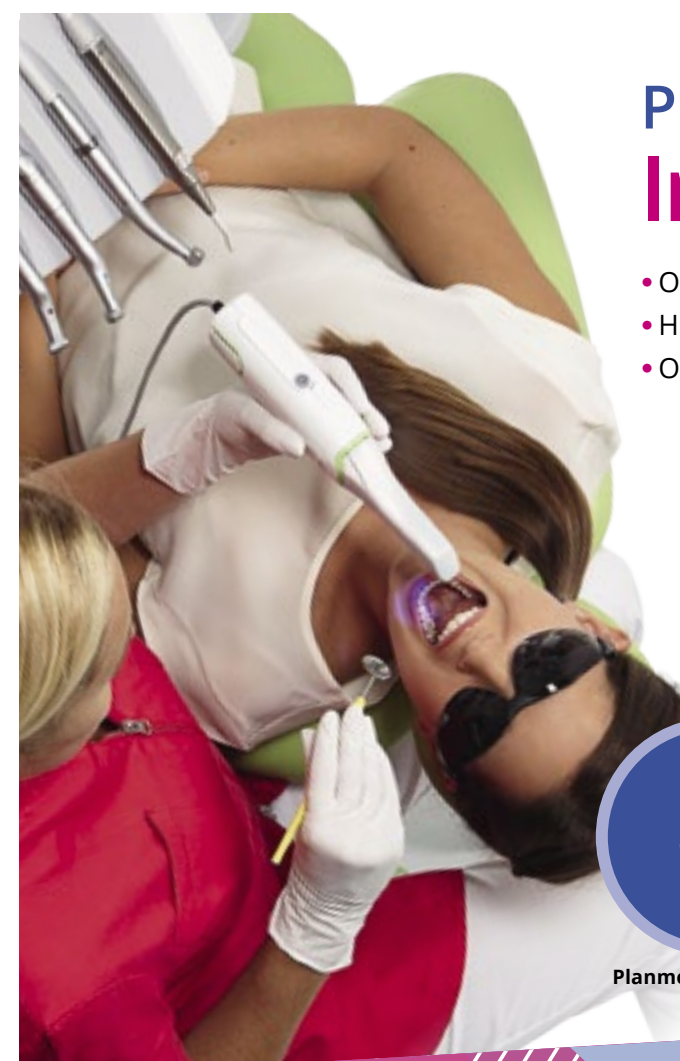


Misters **Makoto Nakao**, **Heikki Kyöstilä**, **Tuomas Lokki**, **Jouko Nykänen** and **Janne Kyöstilä**

'GC'

GC President visits Planmeca

Mr. **Makoto Nakao**, President of the renowned dental care product manufacturer GC Corporation, visited Planmeca headquarters in Herttoniemi, Helsinki in January. The visit was hosted by the President of Planmeca Mr. **Heikki Kyöstilä**, who presented Mr. Nakao with a preview of Planmeca's IDS highlights and innovations.

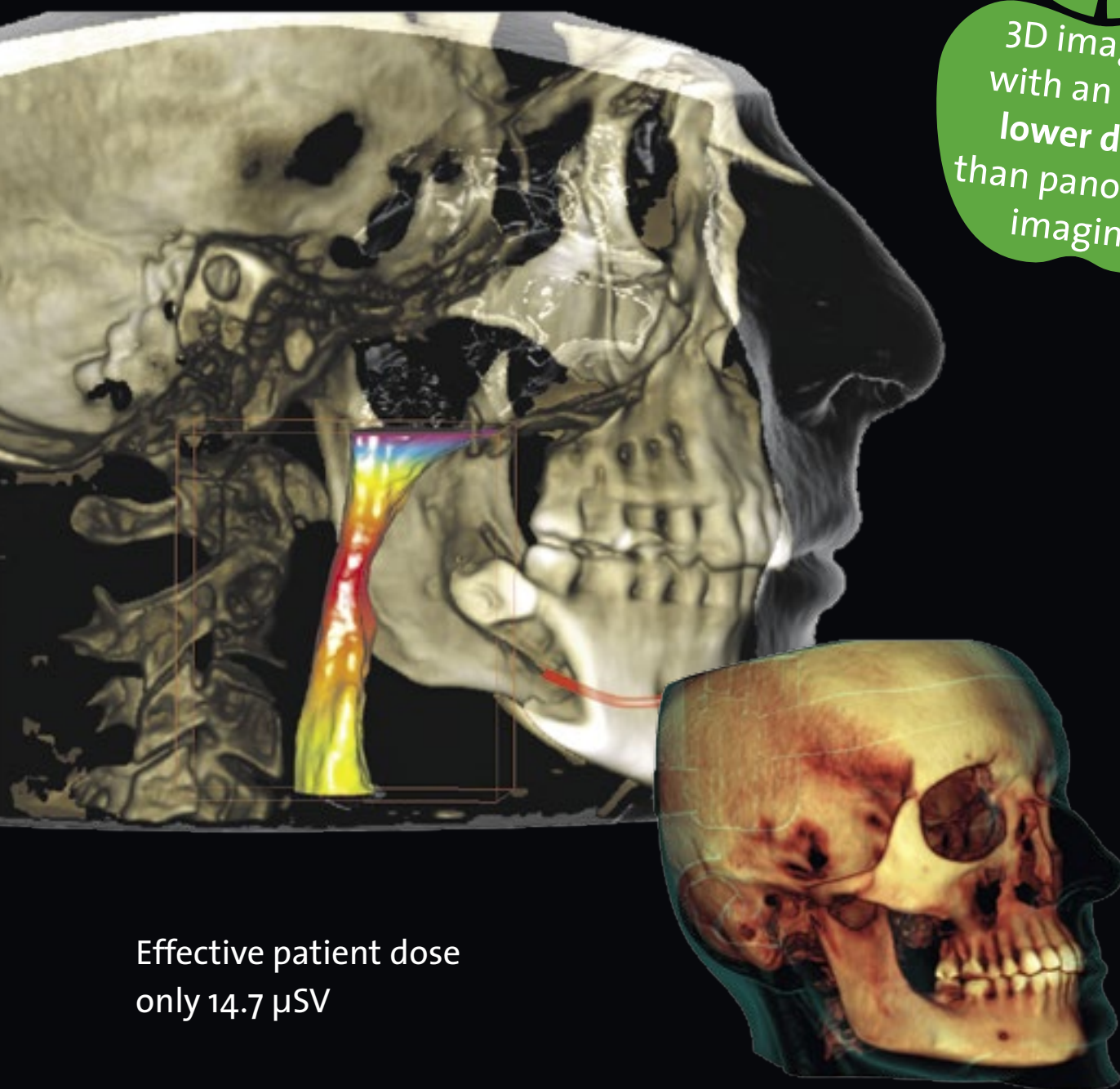


Planmeca CAD/CAM™ Chairside Integrated workflow

- Open solutions for all digital dentistry
- High precision for prosthetic works
- One software platform from scanning through design to milling

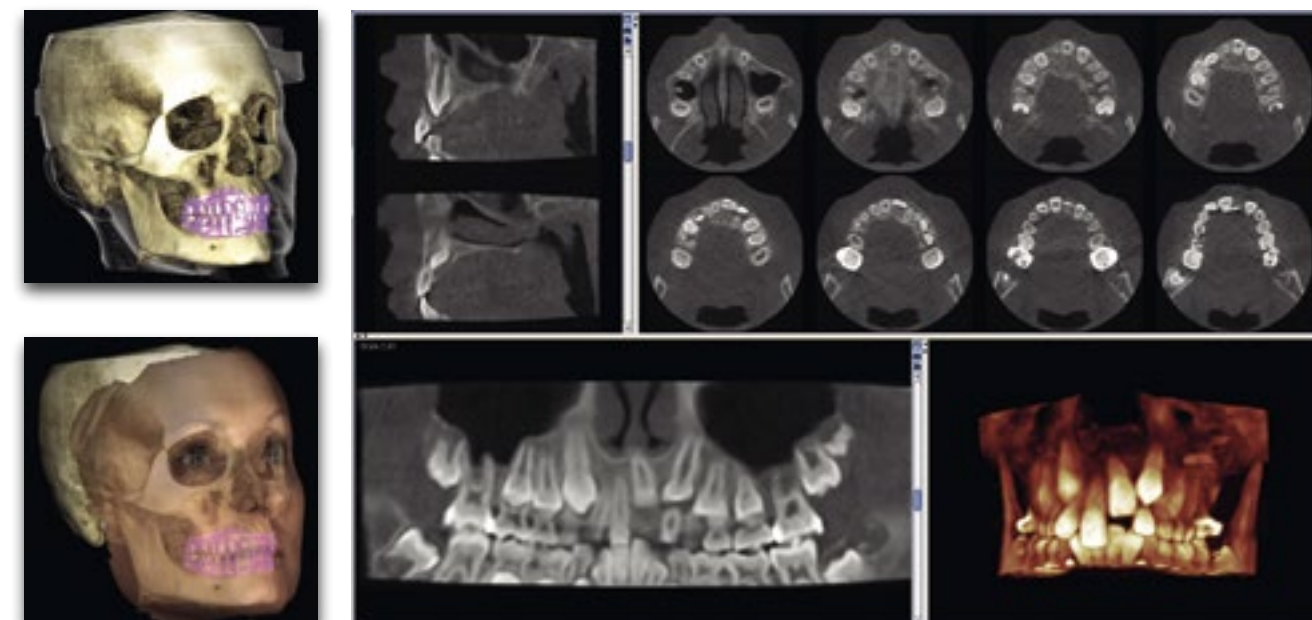


Pioneering Planmeca Ultra Low Dose™ protocol – An even lower patient dose than with panoramic imaging



3D imaging
with an even
lower dose
than panoramic
imaging

Effective patient dose
only 14.7 µSv



The Planmeca Ultra Low Dose™ imaging protocol lowers the effective patient dose by up to 75%

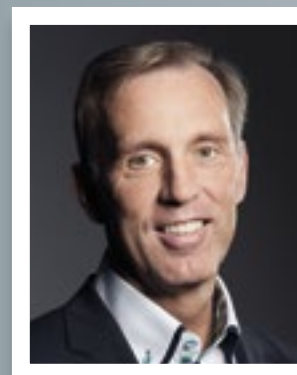
Planmeca ProMax® 3D units offer the unique **Planmeca Ultra Low Dose™** imaging protocol, which enables CBCT imaging with an even lower patient radiation dose than standard 2D panoramic imaging. This pioneering imaging protocol is based on intelligent 3D algorithms developed by Planmeca and yields a vast amount of detailed anatomical information at a very low patient dose.

The protocol can be used with all voxel sizes and in all imaging modes from Normal to Endodontic mode. Using the Planmeca Ultra Low Dose protocol reduces the effective patient dose by up to 75–80%.

Ultra low dose images are ideal for many clinical cases, such as:

- **Orthodontics:**
 - Defining the amount of bone around the root
 - Localising unerupted and impacted teeth before orthodontic treatment
 - Defining orthodontic landmarks for cephalometric analysis
- **Post-operative and follow-up images in maxillofacial surgery**
- **Airway studies**
- **Sinus studies**
- **Implant planning**

The Planmeca Ultra Low Dose™ protocol has changed 3D imaging completely



*Prof. Dr. Axel Bumann
DDS, PhD, Orthodontist, Oral
surgeon, Oral and Maxillofacial
Radiology, MESANTIS® 3D
DENTAL-RADIOLOGICUM*

We at MESANTIS® 3D DENTAL-RADIOLOGICUM produce about 7,500 CBCT images per year at eight locations in Germany.

Our main concern in X-ray imaging is to reduce the possible radiation dose as much as is reasonably achievable (ALARA principle). Traditional digital 2D X-rays at an orthodontist's clinic usually have an effective dose ranging between 26–35 µSv (ICRP 2007). Conventional CBCT images of the head with modern CBCT equipment show an effective dose ranging between 49–90 µSv.

The latest image protocol with a specific associated algorithm is called the **Planmeca Ultra Low Dose™** protocol. In medical terms, it allows radiologists to adjust imaging parameters individually according to the clinical needs of each case. The mA-values, in particular, can be individually adjusted and reduced for each patient, as it is required according to all international scientific guidelines. Therefore, it is possible to further

reduce the effective dose significantly by using the Planmeca Ultra Low Dose protocol. Depending on the field of view, nowadays CBCT equipment with a Planmeca Ultra Low Dose algorithm has an effective dose between 4 to 22 or 10 to 36 µSv.

Our patients and referring colleagues are always happy to hear that the effective dose for certain indications is now even lower than in traditional 2D X-ray imaging. Since last year we have been able to replace the common CBCT protocols with the Planmeca Ultra Low Dose protocol.

At MESANTIS® 3D DENTAL-RADIOLOGICUM in Germany, the Planmeca Ultra Low Dose imaging protocol is used either with a small or large field of view. Using the new protocol, a lot of patients can benefit from improved 3D diagnostics without being exposed to a higher radiation dose. ■

Prof. Dr. Bumann states that he has not received any financial reward or other benefit for this interview.

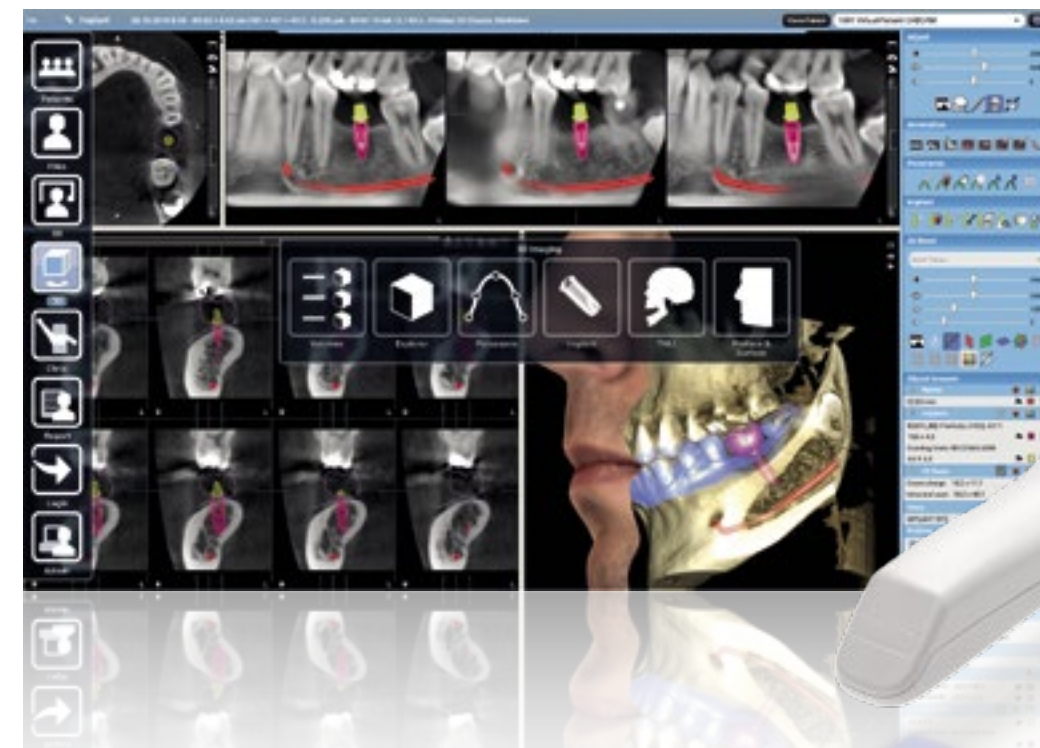
This article has been previously published in CAD/CAM, the International C.E. magazine of digital dentistry (North America Edition, Vol. 4, Issue 1/2014)

Planmeca ProMax® CBCT with CAD/CAM technology: The perfect combination



CBCT imaging is becoming the new standard of care for complete patient information. These images provide multi-faceted views of teeth and everything below the gum line, including the mandibular nerve canal, making them an invaluable tool for planning implant cases and other restorative treatments.

Now, consider combining this detailed information below the gum line with images from an intraoral scan, capable of capturing the highest resolution of data above the gum line. This combination of CBCT and STL data from CAD/CAM sources gives doctors the ability to provide the required information and tissue leveling for a crown down to an implant plan.



In most cases, the STL data can also be utilised by the lab to create the final surgical guide for placing the implant with unparalleled accuracy and speed. Temporary and final restorative crowns can be milled in-office in a matter of minutes or milled by a lab in as little as 24 hours. Planmeca's imaging and CAD/CAM technology have captured this concept with the **Planmeca ProMax® 3D** family of imaging units and the **Planmeca PlanScan®** and **Planmeca PlanMill®** systems, offering doctors the ability to acquire a data set with more detail than ever.

Streamlining the digital workflow

Digital dentistry is streamlining virtually every aspect of the restorative workflow. Traditionally, doctors submit a physical impression to the lab with the prescription and instructions written out on paper. This is gradually ceding ground to an entirely digital process where the patient's information and doctor's instructions are sent to the lab electronically via a digital impression system.

Planmeca PlanScan restorations can be delivered mere days after the laboratory receives the patient's intraoral scans, while the Planmeca PlanMill 40 in-office milling unit is making same-day dentistry a reality. The restorations produced by the PlanScan restorative system, along with the combining of the digital impression with CBCT scans, reduce the costs and treatment time associated with replacing a tooth, increasing the demand for digital dentistry exponentially.

For those who want to continue to

work with their labs, all of the patient information needed to produce a model-less restoration can be submitted digitally to a dental laboratory. At the same time, clinicians enter the patient's information and prescription data into their digital impression system's software prior to submitting each case. Because the Planmeca PlanScan system is an open system and the dental team can send the file in a standard DICOM format, exchanging patient data is easy between most systems through **Planmeca Romexis®** software.

Bringing today's dental practice up to speed with Planmeca Romexis® software and cloud service

While digital impression systems are realising a data standardisation solution, the digital X-ray, practice management, cone-beam computed tomography (CBCT) and digital treatment-planning systems found in today's dental practice require the same sort of attention. Because these systems lack interoperability, they are unable to efficiently communicate patient data and reach their true potential.

To truly maximise the efficiencies and cost savings offered by these technologies, interoperability is imperative among these dental systems that are becoming increasingly common in today's dental practice. As clinicians demand data standardisation, the transfer of the patient's information, X-rays, CBCT scans, digital impressions and prescription data between the dental office and the dental lab with the

simple push of a button is now possible with Planmeca Romexis® software and **Planmeca Romexis® Cloud**.

Maximising practice profitability with open architecture

Data standardisation is essential to driving down costs for patients, doctors and laboratories alike by establishing interoperability between intraoral scanners, CAD/CAM software and other dental systems. Ultimately, having a common standard that allows the disparate systems used in dental care to function as plug-and-play devices rather than requiring pricy IT solutions will reduce the costs of integrating these new technologies into dental practices and maximise the ROI of the equipment.

Planmeca's CBCT and CAD/CAM imaging systems, along with Planmeca Romexis digital treatment planning software, are using this idea to improve the efficiency, predictability and cost-effectiveness of dental restorations, making chairside dentistry a lucrative investment for dentists who wish to grow their practice and offer patients the latest in same-day technology. ■



Access Planmeca product information – wherever you are

COPY TIINA LEHTINEN AND HANNA YLIJÄRVI

Explore our whole product range

The *Planmeca Showroom* application for iPads and Android tablets

The free, multilingual Planmeca Showroom mobile application lets you explore Planmeca's dental units, imaging devices, CAD/CAM solutions and software online or offline with your iPad or Android tablet.

Take a virtual tour of our Helsinki headquarters showroom: find detailed product information and view clinical images, demo videos and animations. You can also send product brochures by email! ROI calculators are available as well.

The Planmeca Showroom application is available for download from the App Store and Google Play.

Read and share electronic brochures and user manuals

The *Planmeca Brochure Kit* and *Planmeca Manual Kit* for iPads, Android tablets and desktop use

Browse and read our latest materials from the Planmeca Brochure Kit and the Planmeca Manual Kit – online or offline. You can also choose to send a download link to selected materials by email. These free applications are available for download from the App Store and Google Play.

Even the desktop versions let you work offline (Mozilla Firefox or Google Chrome recommended). The desktop versions are available at:

- planmeca.com/brochurekit
- planmeca.com/manualkit

Download product images, brochures and user manuals online

The *Planmeca Material Bank* for desktop use

The Planmeca Material Bank is the online source for all public product materials related to Planmeca. You can download images, brochures and the latest versions of user manuals. Should you need a brochure or a second copy of a user manual, you can order one from the material bank.

Visit the Planmeca Material Bank at planmeca.com/materialbank.

Planmeca PlanScan® The ultimate scanning experience



- The world's first dental unit integrated intraoral scanner
- Constant chairside access to live scanning data from Full HD tablet device
- Wireless foot control for hands-free operation



Find more info and your local dealer
www.planmeca.com

PLANMECA



Planmeca Oy Asentajankatu 6, 00880 Helsinki, Finland. Tel. +358 20 7795 500, fax +358 20 7795 555, sales@planmeca.com

Creating a modern practice with digital dentistry



A year ago, Finnish dentist **Harri Lahti** fulfilled a long-time dream of his and started his own clinic. As Lahti wanted to invest in the newest dental technologies, he decided to acquire the complete **Planmeca CAD/CAM™ Chairsides** solution – from the **Planmeca PlanScan®** intraoral scanner to the **Planmeca PlanMill® 40** milling unit. Lahti's clinic is also equipped with Planmeca's dental units and X-ray devices.

COPY LAURA SIIRA IMAGES JOHANNES KAARAKAINEN



Lahti joined Planmeca at the Finnish Dental Congress and Exhibition to introduce visitors to the intricacies of CAD/CAM work. Image: Marjo Tapper

The idea of founding a modern digital dental clinic of his own had been simmering in **Harri Lahti's** mind for quite some time. He collaborated with Planmeca's Finnish distributor and subsidiary Plandent Oy to set up his new clinic, *Hymiö Hammaslääkärit* – roughly translated “the Smiley Dentists”.

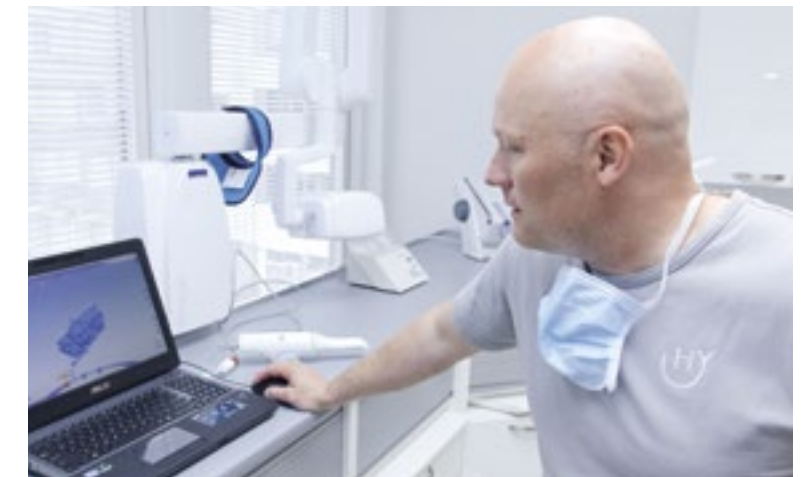
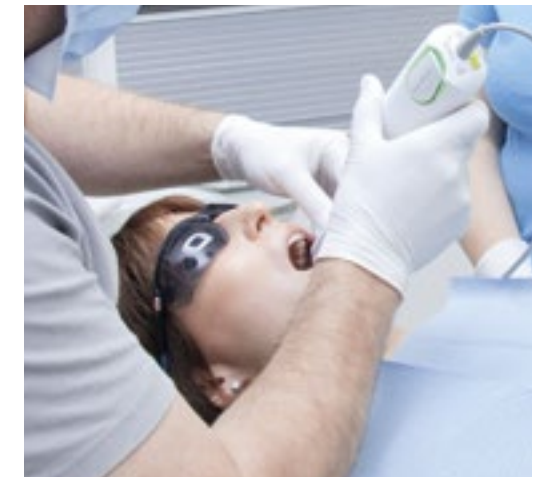
Plandent took on a comprehensive role in the clinic's designing process and also handled all equipment and software deliveries and installations. “Planmeca's products are stylish and Plandent has a youthful way of operating, which I like. The clinic designing service provided by Plandent was extremely useful. Also, I didn't want to shop around for each individual item in search of the cheapest possible price – getting everything from

the same place was more important to me. Overall this ended up being more affordable, and now I know where to call in problem situations”, Lahti explains.

Lahti's clinic has three treatment rooms and it is equipped with a wide array of Planmeca products, such as **Planmeca Compact™ i Touch** dental units, **Planmeca ProX™** intraoral X-ray units, as well as a **Planmeca ProMax® 2D S2** X-ray unit. “My Planmeca ProMax has worked very well – the quality of the X-ray images it produces is superb”, Lahti says. “I had some previous experience using Planmeca products, so I knew what I was getting. Many of my colleagues also recommended Planmeca, complementing the durable aluminium frames of their dental units, for example.”



Harri Lahti scans the teeth efficiently, with digital impressions immediately transferring to the **Planmeca PlanCAD® Easy** design software.



Planmeca CAD/CAM chairside – from intraoral scanning to high-precision milling

Lahti had decided that he wanted a full CAD/CAM solution – the **Planmeca PlanScan®** intraoral scanner, **Planmeca PlanCAD® Easy** design software and the **Planmeca PlanMill® 40** milling unit. He had previous CAD/CAM experience, so he knew the principle behind the system.

A CAD/CAM system enables faster and more efficient treatments, ultimately saving patients' time. “Same-day dentistry eliminates the need for temporary solutions, as it is possible to install an implant only a few hours after scanning and prepping a tooth.”

Lahti considers the biggest advantage of a smooth CAD/CAM workflow to be that it makes possible high-quality results that are also cost-efficient. “There haven't been any problems with the implants – they have all fit very nicely”, Lahti recounts. He has so far designed and milled smaller dental restorations at his clinic, while ordering removable prostheses, implants and crowns from dental laboratories. “Having different systems benefits patients. I have always recommended our CAD/CAM solution when appropriate.”

Impressed patients

The clinic's CAD/CAM work has made a great impression on Lahti's patients. “They have been astonished. I have often taken the extra time to show patients the images of their scanned teeth. They have been impressed by the efficiency of the workflow. Word of mouth is really the best marketing I can get – patients telling their friends about the dentist who designed their tooth with a computer”, Lahti laughs.

Lahti has also been very pleased with the **Planmeca CAD/CAM™ Chairside** concept. In particular, he is fond of the Planmeca PlanMill 40 high precision milling unit, which mills materials according to their properties – delicate materials are handled carefully and resilient materials more briskly. “Many people have commented on how great it is that a competitive option for CAD/CAM is finally available.”

The Planmeca PlanScan® intraoral scanner can now be integrated with Planmeca's digital dental units. This eliminates the need for a laptop in the scanning process, as the scanner can be directly connected to the dental unit. The scanning data can now immediately

be seen from a chairside tablet device. Planmeca PlanScan has been designed for an efficient workflow, as it can be shared between different users and treatment rooms and used just like any other dental instrument.

A functional CAD/CAM system has also allowed Lahti's clinic to optimise its workflow and distribution of work. “Our dental hygienist **Marjut Komulainen** has regularly worked on e-max and empress fillings, while dental assistant **Piia Hernesniemi** has been learning the intricacies of scanning. This enables us to improve our efficiency, as I can utilize the extra time by treating patients in another room”, Lahti states happily. ■



Crisp images of the upper neck with Planmeca's CBCT device

A few years ago, **Seppo Villanen**, a Finnish physiatrist specialised in pain management, visited Planmeca's stand at the Finnish Medical Convention and saw a CBCT image of a patient with an obvious sequela of a fracture in the neck area. This gave him the idea of using a dental 3D X-ray imaging device for imaging patients with neck problems. The idea turned out to be a success, and nearly 30 patients have now been imaged in cooperation with Pantomo Oy, a company offering dental X-ray imaging services.

COPY HANNA KORLIN IMAGES JUHA KIENANEN



Seppo Villanen, Specialist in physical medicine and pain treatment (on the right) and Radiologist **Raija Mikkonen**.

Seppo Villanen has his practice at medical center Mehiläinen, which is located in the Helsinki Metropolitan Area. The patients he has referred for a CBCT (cone beam computed tomography) examination have mostly been patients suffering from pain in the upper neck. "During a routine MRI scan of the neck, the upper neck is usually left outside the image, since the scan acquires transverse slices from the C3 vertebra downwards. What's more, a regular X-ray examination of the neck is routinely performed in a manner that also leaves the upper neck outside the image. CBCT imaging, on the other hand, covers the entire upper neck, from the base of the skull to the C4 vertebra, which is precisely the area that is often missing from routine studies."

Villanen's neck patients are sent to Oral and Maxillofacial Radiology Center Pantomo Oy for imaging with **Planmeca ProMax® 3D**, and the images are interpreted by radiologist **Raija Mikkonen**. "We have cooperated with Raija for years", says Villanen.

In most cases, CBCT imaging is done to support MRI imaging, since the methods complement each other. In some cases, however, a CBCT scan is all that is needed: "It does not provide an insight to soft tissues, but if the image is sufficient to provide an answer to the current question, other methods are not needed."

"One of the many benefits of CBCT imaging is the low radiation dose compared to e.g. a traditional CT scan."

Conversely, bony structures do not show up well in MRI images, and small bones can be easily confused with scar tissue. In a CBCT image, even small changes in the bone are plainly visible", describes Mikkonen.

Thin slices, low radiation doses and a natural head position

One of the many benefits of CBCT imaging is the low radiation dose compared to a traditional CT scan.

Moreover, the method produces very thin slices, with feasible thicknesses of 0.1 to 0.2mm. In hospitals, CT scans for traumas are usually performed with a slice thickness of 2mm, and MRI scans are sometimes performed with a slice thickness of up to 5mm.

"The thinner the slice, the more reliable it is when you are studying small things", says Villanen. "Thin slices have a better resolution and afford better measurements. A 2mm slice does reveal large fractures, but small avulsion fractures might remain undetected."

Furthermore, a CBCT scan can be post-processed to include all required slice thicknesses. "They can also be acquired in a high resolution CT scan, but that would produce an even higher radiation dose", describes Mikkonen.

Also the patient position is better in a CBCT scan than in a CT scan. A CT scan is acquired with the patient lying down, whereas in a CBCT scan, the patient is sitting up, allowing a more natural head position. "In a lying position, the load experienced by the head is not completely natural. All in all, radiologists should make

more use of functional imaging, so that patients could be imaged in their normal working positions, for example."

Fast imaging increases patient comfort

From the patient's perspective, a CBCT scan is quite pleasant – in addition to the low radiation dose, the procedure is quick. While a regular MRI scan takes about 20 to 30 minutes, and a functional MRI scan up to two hours, a CBCT scan is completed in less than a minute.

"Many patients have been surprised at the brevity of the scan", says **Mika Mattila**, a dentist specialised in radiology, who is in charge of imaging neck patients referred to Pantomo Oy by Villanen. "Planmeca's device has a handy cervical spine program that sets the device to the right position automatically. The only difference in patient positioning, compared to dental patients, is that the

head of neck patients must be turned with extreme caution."

The open patient positioning also pleases people with claustrophobia. "Some patients may be very relieved for not having to go into a tube for a scan."

CBCT images of trauma patients

Some of Villanen's CBCT patients have sustained a neck or head injury in an accident: car accident, horse riding accident, a fall, or by a heavy object falling on their head at a construction site. The patients range from 17 to 80 years of age, and the majority of them are women.

"Research shows that all other things being equal, women are more prone to injuries in a car crash than men." The position of the head is crucial in a crash, and women often make the mistake of first turning their head to see if the children in the back seat are okay.

You should not look back, but protect yourself", says Villanen.

Villanen and Mikkonen state that the upper neck is a relatively new area of interest in imaging and medicine. "The upper neck has been somewhat of a no-man's land, even though it is one of the most mobile joint systems in the body. A neuroradiologist examines the brain, while a radiologist usually examines the area below the C3 vertebra. Treatment of a neck injury patient is a challenging multidisciplinary effort that requires a clinician, a physiotherapist and a radiologist. If a brain or spinal injury is also suspected, the team needs a neurologist and a neuropsychologist as well."

A CBCT scan is an economical imaging method of which many insurance companies have agreed to cover the costs, describes Villanen.



COPY JUHAMATTI MALM

New imaging capabilities for Planmed Verity[®] introduced



CBCT image of a fibula with metal fixation, before and after metal suppression.



With the most significant upgrade yet to the Planmed Verity[®] extremity scanner, Planmed introduces a number of new features to its popular CBCT unit, along with an even better image quality. The new 2.0 version of the Planmed Verity[®] Manager software (VM2.0) also further improves usability, one of the core values of Planmed's design philosophy.



Images without artefacts

Metal implants causing different types of artefacts are always troublesome in medical imaging. With the VM2.0 software, artefacts caused by surgical screws and implants can now be reduced to a minimum by fine-tuning images by metal suppression. Hard and soft tissue resolution can also be improved with specific image reconstruction filters and kernels. Furthermore, it is now also possible to examine the original, metal-artefact-free 2D images used for 3D reconstruction for better diagnostic support. With VM2.0, you can always get the optimal image for different purposes, ranging from smooth 3D rendered images visualising complex fractures to sharper images for detailed bone structure analysis.

Closer to traditional CT imaging

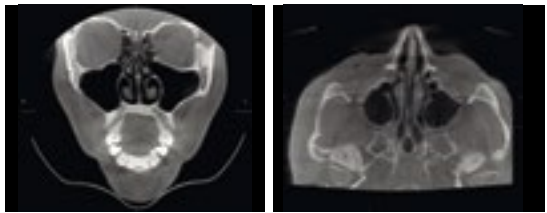
The VM2.0 software release adds flexibility to extremity imaging. Many of the features, such as metal suppression and the capability to do new reconstructions after image acquisition have so far only been available for more expensive whole body CT systems. With the new features, the Planmed Verity imaging workflow is closer to traditional medical CT imaging.

The new release has received extremely positive customer feedback; leading radiologists have praised the quality of the metal artefact reduction, for example, and they have also been impressed by the speed of image processing.

More innovations to come

Planmed Verity is gaining popularity around the world, and new features and methods are constantly being introduced to it. We at Planmed are excited to

collaborate with some of the world's leading radiologists and clinicians to develop even more innovative ways of imaging for the future.



One of our great innovations that will be available very soon is stitching – fusing together two images to allow users to increase the Field of View in Planmed Verity. Larger visibility around the anatomy of interest is beneficial in trauma analysis (e.g. wrist area) and in surgery planning. The image below illustrates a fusion of two images.



An example of image fusion around the hindfoot, midfoot and ankle.



Mika Mattila, Specialist in oral and maxillofacial radiology at Pantomo Oy, uses Planmeca ProMax[®] 3D to scan the patients referred to him by Seppo Villanen.

A new standard of resolution

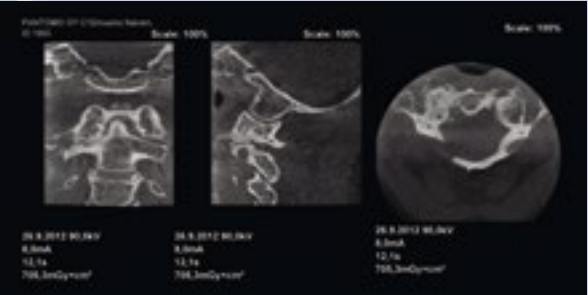
CBCT images are also useful in examining osteoporosis and degenerative changes, since thin slices provide an accurate insight into bone structure. "Compared to the resolution of CT images, CBCT images are on a whole new level", states Villanen.

The Planmeca Romexis[®] software suite is an effective working tool for radiologists: "The software is fast, visual and easy to use, and various measurements and scrollings work well. It produces high-quality paper printouts. It is also a very visual tool in the training of physicians and physiotherapists."

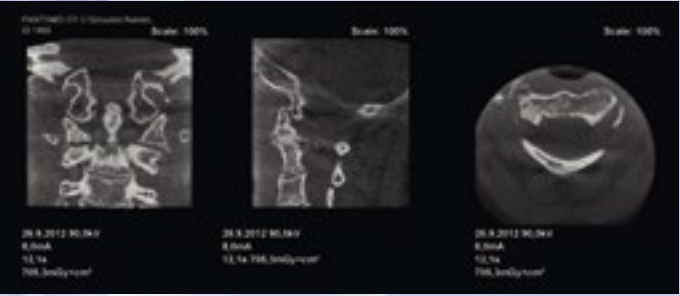
Pantomo too is very happy about this cooperation that has been going on for a few years now. What started as a pilot experiment now provides genuine benefits. "It is great to discover new applications for this imaging method, since we can now obtain additional information and examine the cause of a patient's problems", says Mattila.

Patient case

A 58-year-old woman, generally healthy. During the past two years, her neck has become so sore and stiff that she can no longer turn her head. Dizziness spells. A lot of soreness on the right side, at the vertebral level C1/C2. No inflammatory arthritis found.



Picture 1. Marked loss of height at the right atlanto-axial joint (C1–C2). Calcification and small bone cysts present in the bone under the articular surface. The structure of the bone is clearly visible.



Picture 2. Marked loss of height and osteophyte formation at the right atlanto-axial joint. A cyst under the articular surface on the side of the C2 vertebra.

CBCT imaging indications for the neck area

- Determining the bony anatomy of the upper neck on levels Co–C4 (not indicated for imaging ligaments)
- Fractures of the upper neck
- Avulsion injuries of the upper neck
- Differential diagnostics of arthrosis/rheumatoid arthritis of the upper neck
- Subluxation and abnormal rotation positions of the upper neck
- Internal structure of bone



Picture 3a. The dens has moved to the left in relation to the C1 vertebra. Osteophytes in the atlanto-axial joint.



Picture 3b. A large anterior osteophyte in the atlanto-axial joint.

Comparison table

| | CT scan | MRI Scan | CBCT Scan |
|-------------------------|------------------|-----------------|---|
| Imaging position | Lying down | Lying down | Sitting |
| Speed | Relatively quick | Slow | Quick |
| Radiation | Large dose | No radiation | Small dose |
| Area of image | Configurable | Configurable | Small (Co–C4) |
| Functional examinations | Possible | Possible | Possible, not yet tested |
| Slice thickness | 1mm | 2mm | 0.075–0.6mm |
| Artefacts | Teeth, metal | Metal, movement | Fast scanning, teeth do not disturb the image quality |



Planmeca broadens its scope to the field of educational business

COPY HANNA KORLIN AND DANIEL PURSILA

NIDE – the Nordic Institute of Dental Education – is a joint venture company Planmeca founded together with the University of Turku. It has been the logical next step in Planmeca's close and decades-long collaboration with the university world. Utilising Planmeca's technological innovations, as well as the University of Turku's strong academic pedigree, NIDE offers continued education courses to international dental professionals looking to strengthen their expertise.

Collaboration between the public and private sector can be notoriously tricky and challenging. However, when carried out carefully and open-mindedly, it can lead to outstanding results otherwise difficult to reach. With the Nordic Institute of Dental Education, Planmeca and the University of Turku have taken a brave step that promises to be fruitful. Founded in the summer of 2014, NIDE has already shown great potential.

"The Nordic Institute of Dental Education is in a prime position to provide value to both Planmeca and the University of Turku – and most importantly, our clients", states Ms **Jenni Pajunen**, CEO of NIDE. "Our first courses are organised this spring."

Sky-high goals

Pajunen has been running the company since its inception last summer. The process has been more akin to a marathon than a sprint, as the field of educational business is very competitive and newcomers have to patiently build from the ground up. Acquiring world-class lecturers and attracting participants to courses does not happen overnight – it requires extensive background work to

take place. After establishing the needed infrastructure, NIDE's first courses are now ready to take place. More course options could be introduced as soon as the fall of 2015, as the company continues to communicate with its stakeholders to develop its course offerings.

"Instead of providing rigid one-size-fits-all solutions, we want to identify groups who we can offer tailored courses to", Pajunen reveals. "We continue to take feedback into account when planning unique educational concepts to offer to different markets."

NIDE has been received very positively and has already generated much interest. The company has ambitious aspirations. "In addition to being an important part of Planmeca's educational business, we are aiming to become a leading company offering Finnish dental expertise", Pajunen states.

The goal is not far-fetched. Planmeca can supply NIDE with market-leading dental technology, as well as expertise to match it. In addition to acclaimed lecturers from the academic and clinical worlds, NIDE is going to utilise Planmeca's in-house talent in some of its courses. "We can provide a rare blend of cutting-edge technology and expertise as a part

of our curriculum", Pajunen summarises. "We also want to build on the strengths of Finland as an exotic travel destination that has a lot to offer to visitors. This includes its clean nature with excellent conditions for adventure travel, functional cities, a vibrant design and culture scene, and great connections to reach St. Petersburg and other capitals of the Baltic Sea region".

Putting Finnish dental expertise on the map

NIDE has utilised expertise from both home and abroad in moulding its course offering. "Finland has knowledgeable experts, but seeing as our country is rather small and NIDE is an international company, we want to branch out and benefit from foreign expertise as well."

Lecturers for NIDE courses are recruited in collaboration with the University of Turku and Planmeca. "We have an extensive network of contacts that has been formed through organising events, as well as working closely together with universities and professors", Pajunen tells. "Of course, bookings must be made well in advance, as the best lecturers tend to be very busy."



Ms. **Jenni Pajunen**,
CEO of NIDE

IMAGE Juha Kienanen

The quality of NIDE's courses is guaranteed by European accrediting standards – participants who complete courses are awarded with academic ECTS credits by the University of Turku. "If a topic is interesting, credits tend to have a secondary significance for participants", Pajunen notes. "But they certainly do attest to the high quality of our courses."

NIDE's courses also include extensive hands-on training. This gives participants the chance to test the technologies addressed. Some courses also incorporate laboratory testing as a part of the curriculum. "Our courses offer a solid balance of scientific content and clinical work", Pajunen emphasises.

Planmeca Digital Academy – all educational activity under one umbrella concept

Education has always played an important part for Planmeca. The company has an extensive history of closely collaborating with leading universities in the dental field, and has also for long offered outstanding equipment training. As dental technology continues to develop, the role of education is only set to expand. "Increasing educational expertise will help our company tremendously. It is our goal to find ways to better utilise our vast educational resources", Pajunen states.

In addition to NIDE, Pajunen has been developing Planmeca Digital Academy –

an umbrella concept covering all trainings and education collaborations offered by Planmeca. These include trainings for dealers and dental professionals, as well as courses organised together with universities and dental clinics. "Going forward, we are also prepared to further develop our online education offering", Pajunen reveals. "We are looking to provide different kinds of combinations of attendance-based courses and online courses, for example".

"It is our firm intention to improve digital dentistry expertise all over the world. In the future, we will increase NIDE's geographic flexibility", Pajunen reveals. "We are aiming at bringing our courses nearly anywhere." ■



A Finnish joint venture company founded by Planmeca Oy and the University of Turku. NIDE offers high-quality continuing education courses to international dental professionals, who wish to strengthen their expertise in the latest topics in the field of dentistry. NIDE's courses utilise the strong academic pedigree of the University of Turku, the best lecturers in the field, as well as Planmeca's world-leading technology.

All courses are taught in English at the University of Turku or at Planmeca's headquarters in Helsinki. The University of Turku admits the ECTS credits and course certificates to students.

NIDE's courses cover a wide range of topics, such as 3D imaging, CAD/CAM technologies, biomaterial sciences, prosthodontics, endodontics and orthodontics.



A new comprehensive concept, which covers Planmeca's entire educational selection. Planmeca Digital Academy brings together all of Planmeca's courses, as well as the company's educational collaborations with leading dental universities, clinics and distributors. In the future, the concept will be expanded to also cover online education.



Expand Your Expertise and discover all the Nordics can offer

Founded by Planmeca and the University of Turku, the **Nordic Institute of Dental Education** (NIDE) offers dentists high-quality continued education in Finland.

Take the chance to expand your expertise in the latest topics in dentistry, using the most modern technologies. NIDE's courses combine highly qualified lecturers, the strong academic pedigree of the University of Turku, and Planmeca's state-of-the-art technologies. The courses are held in English.

Learn more and sign up now:
www.nordicdented.com

Adopt
the latest
technologies

Gain
academic
credits

Visit
Finland

Enjoy a Nordic evening!

All course participants will be invited to taste Nordic delicacies at a complimentary dinner and to relax in the Finnish sauna.

Courses in 2015:

3D imaging and diagnostics

11-12 May
8-9 June
28-29 September
Helsinki

2 days, 1 ECTS credit, EUR 1,000 + VAT

Mastering CAD/CAM fabricated restorations

15-17 April
10-12 June
14-16 October
Helsinki

3 days, 2 ECTS credits, EUR 1,500 + VAT

Digital Dentistry Summer School: 3D imaging and CAD/CAM

8-12 June
Helsinki

5 days, 3 ECTS credits, EUR 2,500 + VAT

Minimally invasive dental treatments by using fiber-reinforced composite

20-22 May
Turku

3 days, 2 ECTS credits, EUR 1,500 + VAT

All about adhesion

23-25 September
Turku

3 days, 2 ECTS credits, EUR 1,500 + VAT

Planmeca expands into the veterinary and medical technology businesses

COPY LAURA SIIRA

To continue our expansion in the healthcare technology market, we are now pleased to offer products also to veterinary and medical customers. Many of our familiar solutions are already in use at veterinary and medical clinics and hospitals worldwide.

"We have a lot of potential and expertise at Planmeca that can be utilized in the medical and veterinary markets. Many of our products already exceed traditional dental imaging: for example, the **Planmeca Promax® 3D Mid** and **Max** X-ray devices are used for head and neck radiology, including the imaging of ears, nose, throat, and the upper part of the cervical spine", says Ms. **Mari Varjonen**, Director of Medical Imaging at Planmeca.

In addition to head and neck radiology, Planmeca's offering for the medical market includes the orthopaedic CBCT imaging solution **Planmeca Xtremity™**, the **Planmeca Romexis®** imaging software, as well as patient-specific **Planmeca ProModel™** 3D implants for maxillofacial surgery. "We want to offer the best possible usability, excellent diagnostic image quality with a low dose,

and lasting product design for medical needs. I am certain that this is a way for us to differentiate ourselves from our competitors", Varjonen says.

For the veterinary market, Planmeca offers a new high standard of care. This includes e.g. a CBCT 3D imaging solution, software, the cart version of the **Planmeca Compact™** i dental unit, intraoral X-ray solutions, and instruments. "Veterinary care, including dental care, is growing all over the world, as people are investing more and more in the wellbeing of their pets. As is the Planmeca standard, our products provide a smooth workflow with excellent image quality for dentists, veterinarians, as well as medical doctors."

Varjonen praises Planmeca's proficiency in CBCT solutions. "Planmeca is the world's best CBCT provider. We have the whole package: expertise in software development, algorithms, mechanical engineering, and so on. We are one of the world's leading dental equipment manufacturers, and now we can use our knowledge in other fields too."

The Planmeca product portfolio will be further developed to answer the needs of medical and veterinary professionals in the best way. We are also currently expanding our dealer network for our new market segments. ■

Check out our new websites for
Planmeca veterinary and
medical solutions:
veterinary.planmeca.com
medical.planmeca.com



Strong growth of veterinary dentistry

COPY LAURA SIIRA IMAGES JUHA KIENANEN



Dental care of animals is receiving increasingly more attention around the world. However, most pet owners still do not know that dogs need to have their teeth brushed every day, states veterinary dentist, **Helena Kuntsi-Vaattovaara**, DVM, DAVDC, DEVDC.

Located in southern Finland, the veterinary clinic Anident has no shortage of dental patients. They come in all shapes and sizes, as the clinic treats around 250 animals each month. Most of the patients are dogs and one fifth of them cats. "Our patients regularly suffer from periodontitis. Among dogs, fractures, tumours and especially malocclusions are also common, while cats often suffer from idiopathic dental resorption", Kuntsi-Vaattovaara, the founder of Anident, summarises.

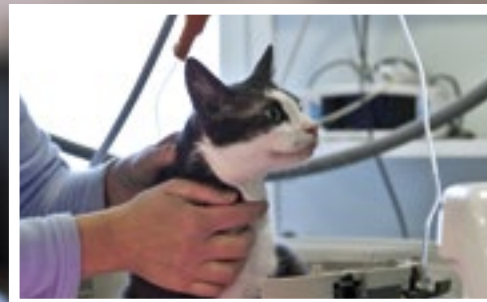
In addition to Helena Kuntsi-Vaattovaara, there is only one other veterinary dentist in Finland and currently only Anident offers residency (official speciality training) in veterinary dentistry in the country. "Vet school is only able to offer minimal teaching in veterinary

dentistry and that is why veterinarians have an urgent need for post-graduate training in the field. It often happens that after working some time at a clinic the veterinarians notice how important proper dental care is", Kuntsi-Vaattovaara comments.

Kuntsi-Vaattovaara completed her residency in veterinary dentistry and oral surgery at the University of California, Davis.

Planmeca Verity® – a CBCT solution for veterinary clinics

Anident is a well-equipped veterinary clinic: it uses **Planmeca Compact™** dental units and Planmeca's intraoral X-ray, as well as a comprehensive selection of other dental devices and instruments. Last year, Anident also acquired the **Planmeca Verity®** CBCT extremity scanner



– suitable, for example, for orthopaedic imaging, as well as for diagnosing skull fractures, tumours and teeth of cats, dogs and other animals. "We were already involved in the product development of Planmeca Verity, as we had a clear need for CT technology in certain cases. We knew that a CBCT scan would provide more information to us than a standard X-ray image could", Kuntsi-Vaattovaara recounts.

In addition to tumours and maxillo-facial fractures, Kuntsi-Vaattovaara plans to utilise Planmeca Verity in endodontic and periodontal diagnosis, as research regarding them increases. The CBCT device has also proved to be particularly useful in diagnosing ear infections. "Planmeca Verity offers the means to see into the middle ear, for example. Ear infections are very common and can

place a pet's very life at stake, as they can lead to a choice between treatment and putting the animal to sleep. Thus, the scans play an extremely important role", Kuntsi-Vaattovaara explains.

Acquiring 3D images with Planmeca Verity is quick and easy. Kuntsi-Vaattovaara considers this to be the scanner's best quality. "Patients are always anaesthetised, so speed and practicality are essential. Additionally, the lead shields for Planmeca Verity are light and the scanner's radiation protocol easy", Kuntsi-Vaattovaara points out. CBCT imaging with Planmeca Verity is also much more affordable than a comprehensive CT scan would be.

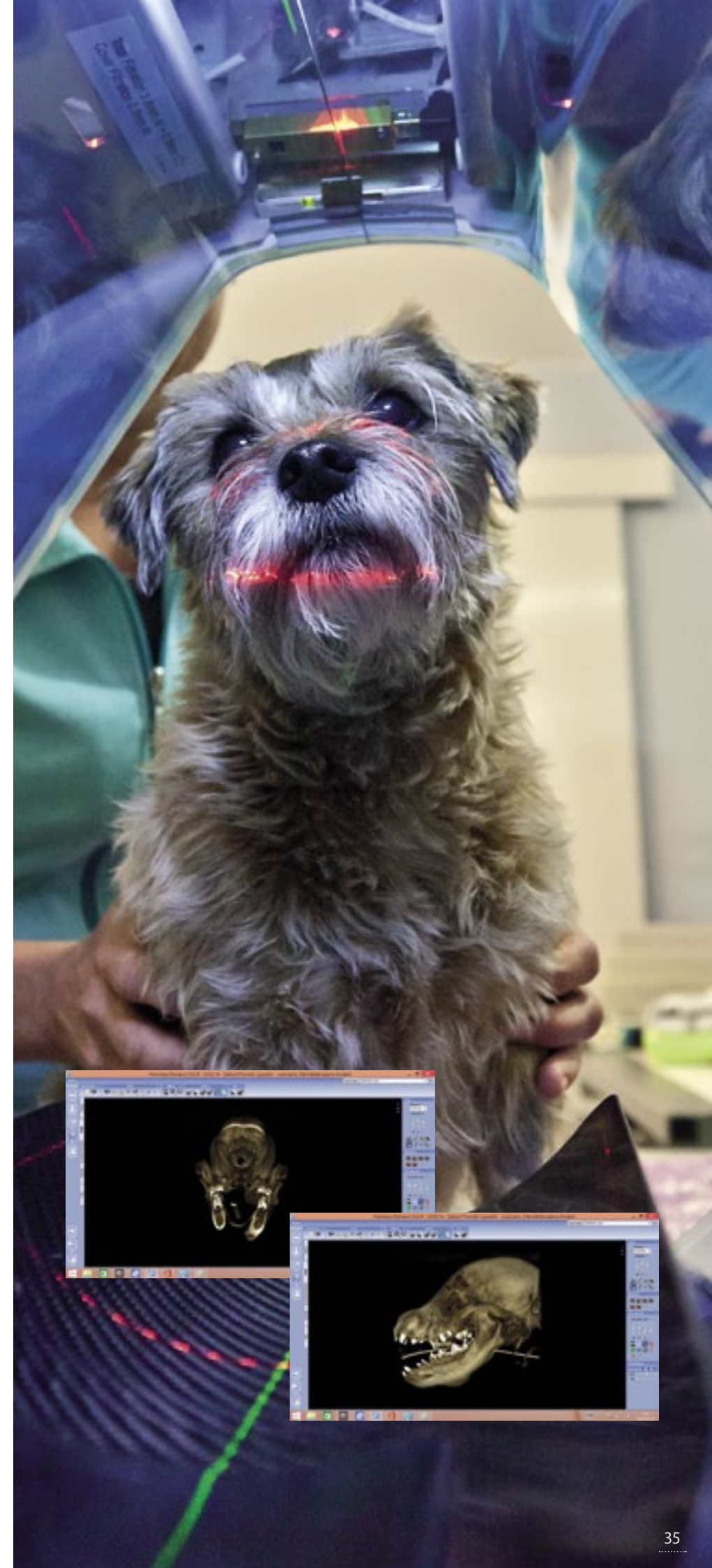
"Acquiring 3D images with Planmeca Verity is quick and easy."

Rising awareness of animal dental care

The future of veterinary dental clinics looks promising, as the interest for animal dental care is increasing all over the world. The internet is contributing to a growing dental awareness among pet owners everywhere. Still, animals are not treated quite like people, as they are rarely brought in specifically for dental care – problems are typically identified while animals are being treated for other issues, such as bad breath, or vaccinations.

Kuntsi-Vaattovaara highlights that many of Anident's customers do brush their pet's teeth regularly. However, far too many pet owners do not yet understand that they are supposed to do this – preferably every day. "No food or dental chew can replace brushing as a means of removing plaque from teeth. We know that 80% of dogs and 70% of cats over three years of age suffer from periodontal disease", she states.

Kuntsi-Vaattovaara thinks it is important that veterinarians learn to identify potential problems residing in animals' mouths. "A dog cannot tell anyone it is in pain, so it is the responsibility of the vet to notice. All veterinarians need to also be aware of their abilities and limitations – when to treat animals themselves and when to refer them to a specialist. This not only ensures proper care for the pet, but also helps the owner to trust the veterinarian's skills."



LM

feel the
difference

A new genuinely ergonomic hand instrument:

LM ErgoSense

Unique intelligence with advanced RFID tracking



The thicker handle, ergonomic grip and fresh colors receive praises. LM-ErgoSense feels sensational and looks refreshingly good.

Today the focus is on ergonomics – without losing sight of efficiency. The new **LM-ErgoSense** hand instrument from LM-Dental, one of the leading manufacturers of dental instruments, meets both of these requirements and is truly a unique combination of ergonomic design and integrated new technology. It is the outcome of intense research and product development in close cooperation with dental clinicians and professionals. An ergonomic, high quality hand instrument naturally feels good in the hand. Even genuinely sensational as the new, smart LM-ErgoSense has been described.

Holding hand instruments nearly 2,000 hours each year can cause strain and expose to upper-limb disorders.

The best way to avoid these is to focus on ergonomics when choosing the daily hand instruments. Choosing LM-ErgoSense with its forefront qualities and well-trying design is an investment both to practitioner's health and the dental clinic's success.

Rated as the best in clinical testing

The value of a truly ergonomic instrument grip can never be emphasized enough as revealed in several scientific studies. A hand instrument with thick silicone handle has been found to be more usable, cause lower perceived strain and to be more productive than those with thinner handles (1).

LM-ErgoSense was rated as the best in ten out of fourteen specified

usability features compared with the other tested instruments in a dental scaling simulation (1). It was also ranked as the best instrument. Most participants in the authentic clinical scaling part of the study considered the LM-ErgoSense silicone handle as their favorite due to the enhanced grip, comfort and instrument's functional design.

In another study focusing on ergonomics, usability characteristics and work productivity using different manufacturers' hand instruments the thick, silicone coated LM instruments were the most preferred choice in regard to all 18 usability criteria used in the test (2).

Intelligence inside the handle

Working together with dental clinics has revealed many challenges in material handling and traceability. How to control and improve the logistics or the increasing requirements for patient safety and

The Hygienist School of Copenhagen University (SKT) tested the Dental Tracking System for four months, afterwards Bo Danielsen commented:

"The Dental Tracking System provided us with valuable information that we did not have before, not only allowing to

follow the instruments flow in the clinic but also their status at all times. Based on knowledge of the instruments flow we easily get an overview on the number of instruments we need and from the data we are able to trace any instrument in the cycle from autoclaving through to the individual patient the instrument

has been used on. Thereby we acquire important documentation of data for our quality assurance of our clinical hygiene. We see many other purposes for the Dental Tracking System here at our clinic in the school."



LM-ErgoSense instruments can be integrated with an advanced **RFID chip** that can be scanned and registered with the unique **Dental Tracking System**. Complete traceability improves patient safety and enhances material management.

documentation? LM has developed the idea of a smart instrument that with its intelligence helps to tackle these challenges.

An advanced RFID chip can now be integrated into the LM-ErgoSense instruments, enabling complete and reliable traceability of the instrument simply by scanning the chip with a reader that together with software creates a unique Dental Tracking System. The scanned and documented information will improve and ease asset management and increase cost efficiency. The Dental Tracking System helps to ensure that only safe and clean instruments are used elevating patient safety to a whole new level. ■

Reference studies

(1) Sormunen E., Nevala N: Evaluation of ergonomics and usability of dental scaling instruments; Dental scaling simulation and Field study, part III. Finnish Institute of Occupational Health, LM-Instruments Oy.

(2) Nevala N, Sormunen E, Remes J, Suomalainen K: Ergonomic and productivity evaluation of scaling instruments in dentistry. *The Ergonomics Open Journal* 2013; 6, 6–12.

Tested by clinicians:

"I love the larger design"

"Feels great in the hand"

"Good grip,
easy to fulcrum"

LM

feel the
difference

The Finnish instrument manufacturer LM-Dental develops, produces and markets dental hand instruments, ultrasonic and air polishing devices. With the innovative product design the company is the fastest growing manufacturer of hand instruments in Europe and the market leader in the Nordic countries. All LM-Dental products are produced in Scandinavia, combining high-tech production technology with handmade craftsmanship to gain a top-quality end result and highest functionality. LM is part of the Planmeca Group.



King of Sweden introduced to a new standard of dental technology at Planmeca

The Royal Technology Mission, with **His Majesty King Carl XVI Gustaf of Sweden** as its patron, visited Planmeca headquarters in Helsinki in November 2014. His Majesty, along with 30 other top representatives from Sweden's government, private sector and academia learned of the company's growth story and innovations.



The Royal Technology Mission visited Finland to become inspired by the country's innovative companies, initiatives and growth strategies. At Planmeca, the mission was introduced to revolutionary 3x3D technology, patient-specific 3D implants, as well as the dental unit integrated intraoral scanner **Planmeca PlanScan®**. Planmeca has taken a strong foothold as one of the world's largest

manufacturers of dental care technology, with a product portfolio that has placed it at the vanguard of the industry. "We received a unique opportunity to share our growth story with the Swedish leaders and to introduce to them our newest dental and healthcare innovations, such as combinations of patient 3D data. Thanks to the emergence of 3D technologies and applications, dental care is undergoing a remarkable change",

says Mr. **Tuomas Lokki**, Senior Vice President of Planmeca. "Healthcare technology has recently become Finland's largest high tech export, and we're proud to be forerunners in the field."

The Royal Technology Mission visit was organised by IVA, The Royal Swedish Academy of Engineering Sciences. IVA has organised similar excursions around the world since 1984. ■



The Royal Technology Mission took a tour of Planmeca's X-ray production facility.



Hands-on product demonstration: Virtual Patient – 3D data in modern treatment planning and diagnostics.



Hands-on product demonstration: Patient-specific maxillofacial implants.



Misters **Janne** and **Tomi Kyöstilä**, **His Majesty King Carl XVI of Sweden** and Mr. **Heikki Kyöstilä**, President of Planmeca.



Hands-on product demonstration: Modern digital workflow.



Planmeca Senior Vice President **Tuomas Lokki** introduced the guests to the intricacies of X-ray technology.



Members of the Royal Technology Mission in a group photo together with their hosts from Planmeca.

- Albania • Algeria
- Argentina • Armenia • Australia
- Austria • Azerbaijan • Bahrain • Belarus
- Belgium • Bolivia • Bosnia and Herzegovina • Brazil
- Bulgaria • Canada • Chile • China • Colombia • Costa Rica
- Croatia • Cyprus • Czech Republic • Denmark • Ecuador • Egypt
- Estonia • Finland • France • French Polynesia • Georgia • Germany
- Greece • Guadeloupe • Hong Kong • Hungary • Iceland • India • Indonesia
- Iran • Iraq • Ireland • Israel • Italy • Japan • Jordan • Kazakhstan • Kenya
- Kosovo • Kuwait • Latvia • Lebanon • Libya • Lithuania • Macedonia
- Malaysia • Malta • Martinique • Moldova • Montenegro • Morocco
- Mozambique • Netherlands • New Caledonia • New Zealand • Nigeria
- Norway • Pakistan • Panama • Paraguay • Peru • Philippines • Poland
- Portugal • Reunion • Romania • Russia • Saudi Arabia • Serbia
- Singapore • Slovakia • Slovenia • South Africa • South Korea
- Spain • Sri Lanka • Sudan • Sweden • Switzerland • Syria
- Taiwan, R.O.C. • Tanzania • Thailand • Trinidad • Tunisia
- Turkey • Uganda • Ukraine • United Arab Emirates
- United Kingdom • United States
- Venezuela • Vietnam

Planmeca products
are presented locally
by distributors near you.

Find your local dealer:
www.planmeca.com

