**FKG DENTAIRE PRESENTS ITS SINGLE-FILE XP-ENDO SHAPE PLUS SEQUENCE**

A new generation of instruments launched by leading Swiss endodontic company FKG Dentaire enables safer and more effective root canal therapy owing to their unique 3D extension capabilities. The XP-endo Shaper Plus sequence solves a common problem for dentists: how to treat complex root canal systems without causing damage to the dentinal structure.

Combining adaptive core technology with 3D design, FKG has created instruments that can adapt to the canal anatomy to clean areas once impossible to reach. The result is enhanced debris removal and irrigation for a gentle, conservative treatment.

**FKG’s patented MaxWire alloy** from which the files are made reacts to the body’s temperature, making the tools highly flexible and enabling three options for the final size. A small, free-floating adaptive core designed in 3-D allows the instruments to expand and progress with agility along the canal while resisting cyclic fatigue.

The XP-endodontic Shaper performs 3-D debridement of the canal while respecting its natural shape, and the XP-endo Finisher achieves 3-D cleaning and biofilm removal, including in areas impossible to reach with conventional files.

The instruments are delivered in a sterile blister pack designed for single-patient use, thus maximizing safety.

According to the company, with the XP-endodontic Shaper Plus sequence, dentists have the most advanced Swiss precision tools at their fingertips to perform complete, minimally invasive root canal instrumentation.

**Denthouse AB, Sweden**

**Booth 808:28, 31, 32**

---

**VITA YZ SOLUTIONS: ZIRCONIA FOR EVERY INDICATION**

VITA YZ SOLUTIONS offers the supertranslucent VITA YZ XT materials, in addition to the translucent and highly translucent blanks. The pre-coloured blanks offer a perfect shade match to the VITA classical A1 - D4 shade guide and are available in monochromatic and polychromatic versions. VITA YZ ST is the ideal material for monochromatic and partially veneered anterior tooth restorations. VITA YZ XT allows the production of monochromatic and partially veneered anterior tooth restorations in the aesthetic zone. With the four degrees of translucency of VITA YZ SOLUTIONS, practitioners can now benefit from a full range of restorative possibilities for every clinical situation.

**Denthouse AB, Sweden**

**Booth 804:22**

---

**PLANMECA CALM FOR PATIENT MOVEMENT CORRECTION IS “THE REAL DEAL”**

“The new Planmeca CALM algorithm for correcting patient movement in CBCT images is taking dentistry by storm, according to the Finnish company. As the first end-user solution for movement artefact correction from a dental manufacturer, the feature has already been praised by dental professionals around the world. In an interview about Planmeca CALM, the company’s 3D imaging specialist Mikko Lilja spoke about how the innovative algorithm came to be and why he believes every dentist can benefit from it.

“Everything happened very naturally,” said Lilja in describing the background to developing Planmeca CALM, the planning iterative algorithm for correcting patient movement. “I had gained a good understanding of movement as an imaging problem in my doctoral research work. When it then turned out this was also a topic of interest for Planmeca, it all came together.”

The name “CALM” stands for “Correction Algorithm for Latent Movement” and describes a project geometry optimization algorithm that can analyse and compensate for patient movement in CBCT images. The outcome is an improved image that eliminates the need for re-takes—saving time and improving patient safety. Patient movement is among the most significant challenges to CBCT image quality. When a patient moves during imaging, it produces artefacts that affect the quality of the image.

“In tomographic reconstruction, the assumption is that the measurements—in this case, the CBCT X-ray projection images—are geometrically consistent,” Lilja explained. “When a patient moves, the data no longer adds up, which shows in the reconstruction. What Planmeca CALM does is it restores the consistency of the X-ray measurements by tracking the movement of the patient, resulting in a sharper final image.”

Planmeca CALM works with all volume and voxel sizes and adds only under 30 seconds to the overall reconstruction time. The feature can be applied after the scan is complete, but also before exposure to ensure that the volumes are already corrected when they are accessed in the Planmeca Romexis software.

“In the past, dentists would send their uncorrected images to the manufacturer for reconstruction or just redo the entire scan, but with Planmeca CALM this is now a thing of the past. We are proud to be the first dental manufacturer to provide a solution for movement artefact correction to the end user,” Lilja stated.

According to Lilja, an end-user solution for patient movement correction had been on Planmeca’s algorithm development road map for some time and was assigned to him upon joining the Planmeca 3-D imaging team.

“I think the timing was perfect for everybody. With Planmeca’s expertise in medical imaging and image reconstruction and my knowledge of movement correction, we just immediately put our heads together and got to work,” he said. The development process was not without its challenges, and a great deal of effort went into creating a dedicated algorithm for Planmeca CBCT devices.

“My previous experience was related to industrial tomography imaging, where things like reconstruction times and the image targeted itself were very different. So, although our first prototype tests were encouraging, we had to go back to the drawing board again and produce a new algorithm for dental imaging.”

Thankfully, I had a lot of help from my extremely capable colleagues, which allowed me to focus on the core problem,” Lilja continued.

The final product was presented at the 2017 International Dental Show in Cologne in Germany amid much excitement and industry anticipation, as Planmeca CALM offers many advantages for dental imaging. The feature is particularly beneficial when imaging restless or live patients, such as children, individuals with special needs or elderly patients. According to Lilja, however, the algorithm can add value to any image.

“On the one hand, we have, of course, the images where the patient has moved to such an extent that an image may be unusable without Planmeca CALM, but in my experience, it always improves the quality of the image.”

Even in cases where you might not typically think there has been significant movement, Planmeca CALM can noticeably enhance the image and enable seeing more details,” Lilja described.

“Whatever the case, it is being able to correct movement artefacts ‘in house’ rather than having to re-sort to retakes or sending the image for enhancement which is key here,” he went on. “When dentists are able to make the correction themselves, the end result is improved diagnosis, time saved, reduced costs, and less exposure to radiation.”

Planmeca CALM has been praised by dentists since its release earlier this year. “The feedback we have received so far has been overwhelmingly positive—from customers and from within the company. It has been truly heart-warming to hear that the hard work that went into it is also bearing fruit. I’ve even heard that the software has been tested by shaking a phantom head around in the X-ray unit, and that all tests have come to the conclusion that it’s ‘the real deal’. It’s a great feeling,” Lilja summed up.

**Planmeca, Finland**

**Booth 808:28, 31, 32**