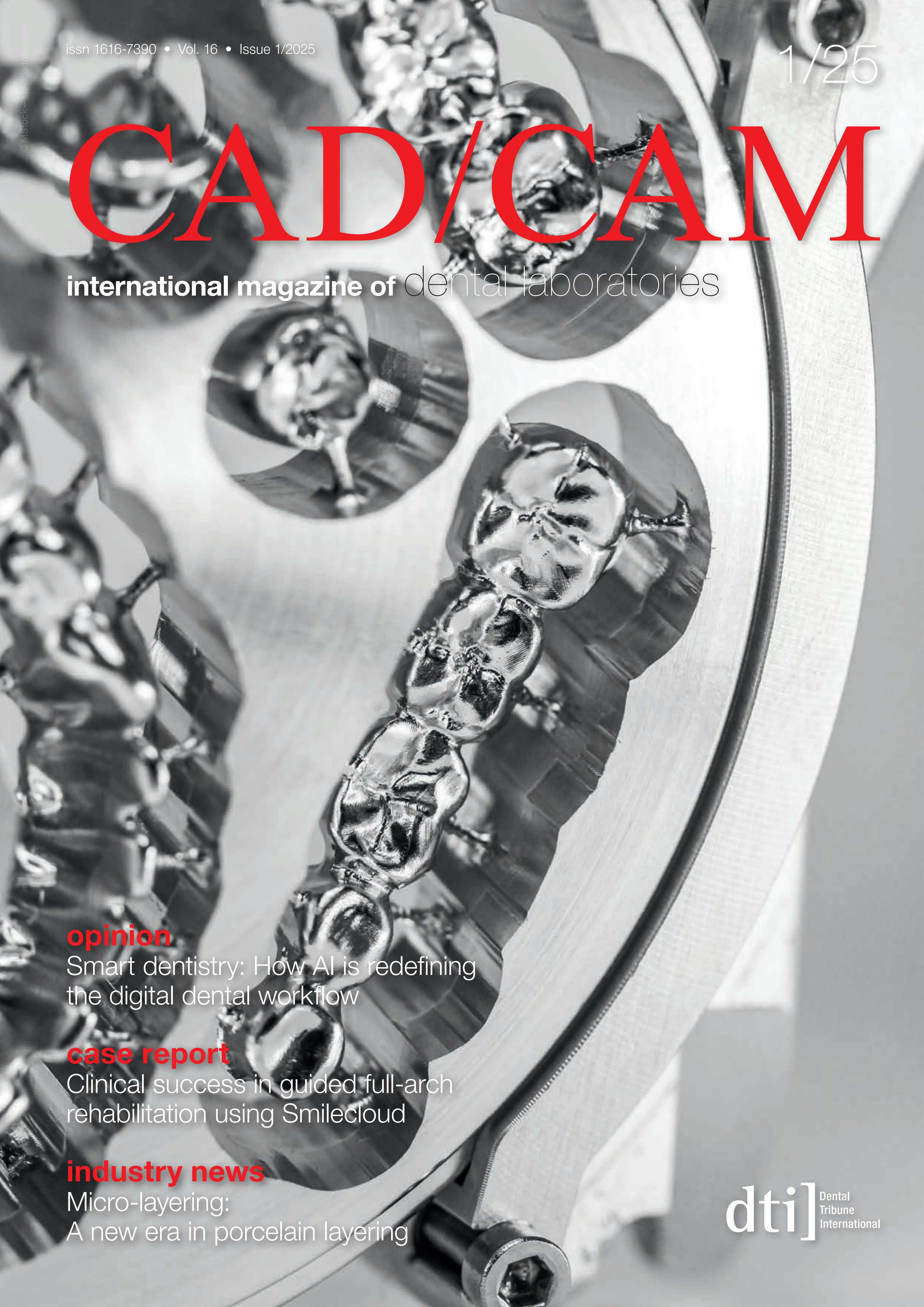

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1/25

CAD/CAM

international magazine of dental laboratories

opinion
Smart dentistry: How AI is redefining the digital dental workflow

case report
Clinical success in guided full-arch rehabilitation using Smilecloud

industry news
Micro-layering:
A new era in porcelain layering

dti] Dental Tribune International

Magda Wojtkiewicz

Managing Editor

CAD/CAM in 2025: Innovation, expertise and the power of digital dentistry

I am delighted to present the first 2025 issue of CAD/CAM **international magazine of** dental laboratories. With each issue, we aim to bring you closer to the pulse of the dental industry—where innovation meets craftsmanship and where technology continues to redefine possibilities for clinicians, technicians and practice and laboratory owners alike.

This issue opens with a range of compelling news from the industry, including a timely and in-depth look at global market conditions. In "Dental industry focuses on what it can control", our editorial colleague Jeremy Booth reports that major dental manufacturers have entered the year with cautious optimism. While North America's dental market showed little improvement in early 2025, regions such as Germany, China and Latin America experienced solid growth. As the global dental industry adjusts to ongoing economic unpredictability—including shifts in US policy under President Donald Trump—companies are adapting their outlooks with a focus on resilience and long-term innovation.

A core focus of this issue is the growing role of artificial intelligence (AI) and digital workflows. In "Digital workflow and AI in implantology", US-based expert Dr Scott D. Ganz highlights how digital tools support precise diagnosis and treatment planning in implant dentistry. Addressing the value of AI in clinical practice, Dr Ali Nankali from the UK explores the broader impact of smart dentistry and AI-powered systems, which are reshaping every stage of the digital workflow—from initial data capture to final prosthetic fabrication.

At the same time, we pay tribute to the enduring value of traditional expertise. In a thoughtful opinion piece, master dental technician Dominik Kruchen from Germany makes the case for the continued importance of analogue skills in high-end laboratory work. His reflections serve as a timely reminder that, even as technology evolves, expert craftsmanship continues to elevate outcomes in ways that software alone cannot.

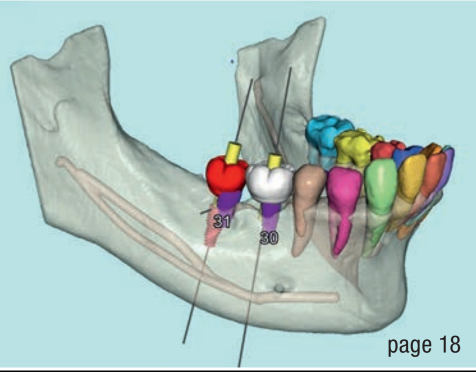
This issue also brings together practical and inspiring case reports. Dr Tohme shares guided full-arch rehabilitation using Smilecloud, and Andreas Chatzimpatzakis demonstrates the aesthetic and functional benefits of micro-layering in zirconia-based prostheses. Rounding out the section, Dr Antonino Cacioppo presents a fully 3D-printed, screw-retained single crown produced through a streamlined chairside workflow—highlighting what is possible in a single patient visit.

We are also proud to feature interviews and articles dedicated to this year's International Dental Show, held in Cologne in Germany. The spring event once again proved to be a launch pad for industry-defining innovations in CAD/CAM systems, AI-enhanced software and next-generation materials. Our roundup captures the major product launches and emerging trends shaping the future of dentistry—offering valuable insights whether you attended in person or followed from afar.

Covering everything, including opinion pieces and clinical documentation, this issue reflects a dental industry that continues to adapt and innovate. As we launch this first issue of the year, we look forward to accompanying you on the journey ahead, based on a shared foundation of technology, insight and excellence.

Sincerely,

Magda Wojtkiewicz
Managing Editor



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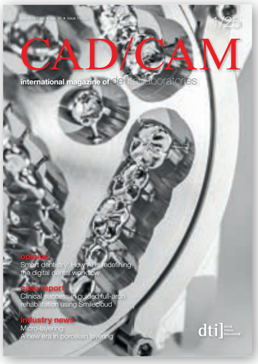
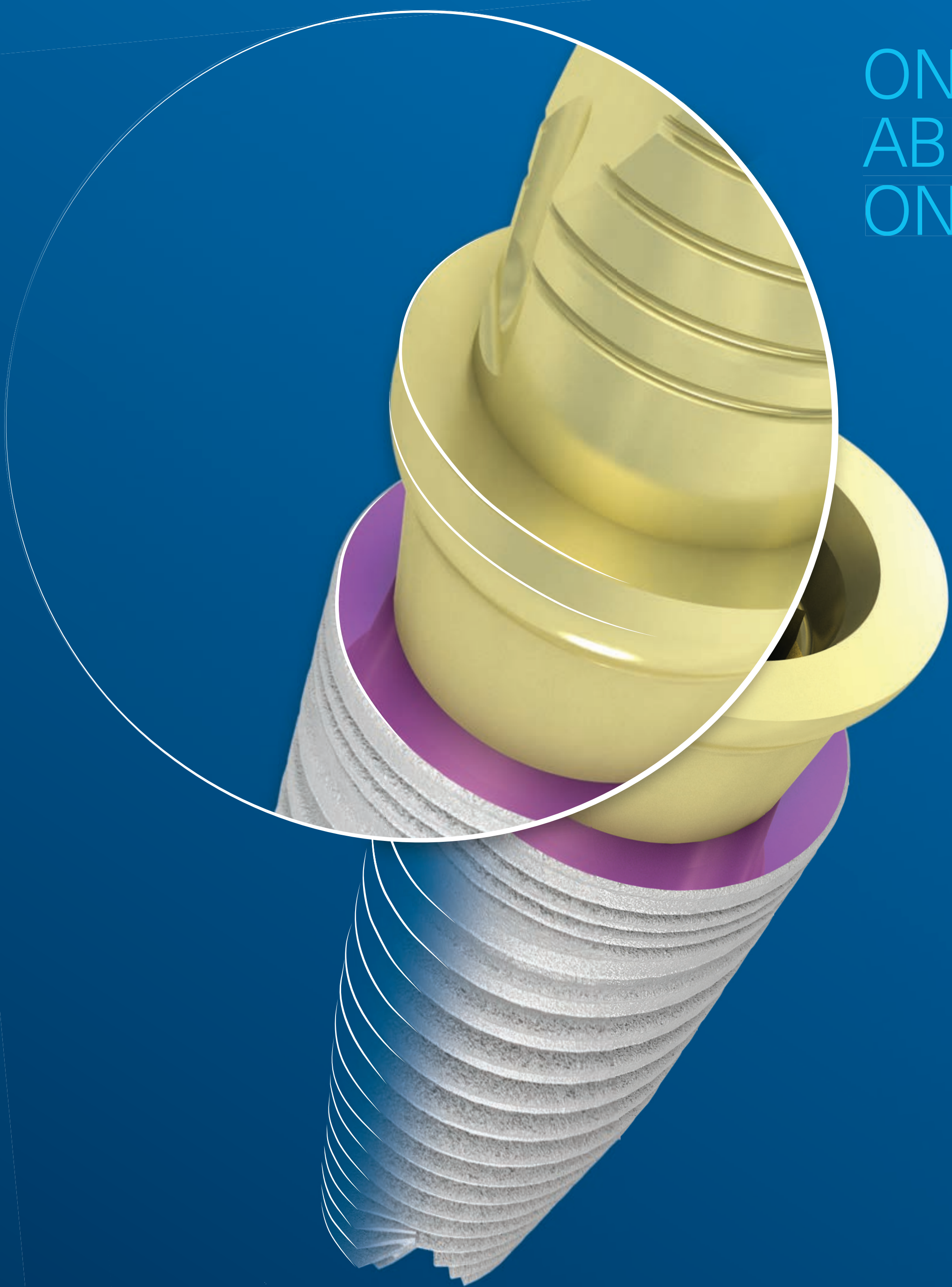
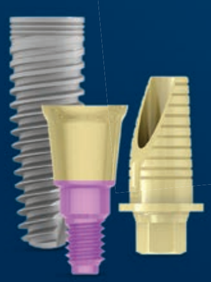


MIS | Dentsply Sirona



ONE ABUTMENT, ONE TIME



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At the 3Shape booth at IDS, visitors could test the new scanner.

3Shape's 25-year milestone—a digital revolution in dental laboratories

3Shape

This year at the International Dental Show (IDS), 3Shape celebrated 25 years in CAD/CAM. However, it was first in 2005 that 3Shape launched its prototype dental laboratory scanner and software at IDS, a milestone which signalled the company's shift from audiology to digital dentistry.

Twenty years later, 3Shape unveiled 3Shape Dental System 2024, the latest version of its CAD/CAM software for dental laboratories. A leading CAD/CAM solution for laboratories around the world, 3Shape Dental System 2024 introduced several innovations, including automation driven by artificial intelligence (AI).

Some highlights included up to ten times faster case management and a new, seamless integration with 3Shape Lab Management Software, which meant laboratories no longer needed to enter data twice between their 3Shape Lab Management Software and Dental System when designing cases.

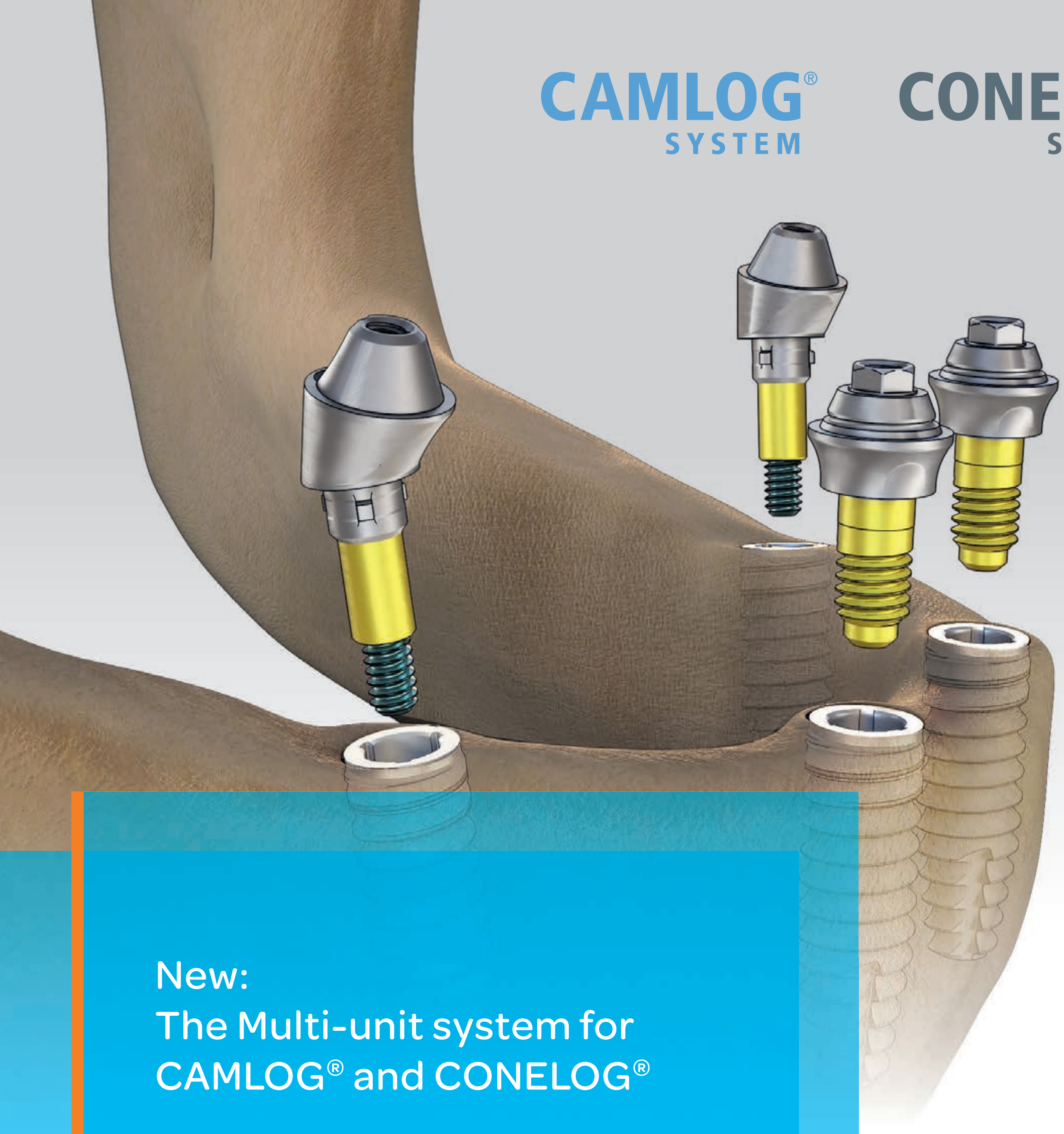
Most importantly, the software added AI-generated crown design proposals for laboratories receiving 3Shape TRIOS scans, 3Shape laboratory scans and integrated third-party intra-oral scans.

AI-generated design proposal was free for subscribers to 3Shape's LabCare service package.

In addition, 3Shape converted its software licensing for Dental System from dongle-based to cloud-based licensing.

Speaking to an enthusiastic crowd of engaged professionals at IDS 2025, Dr Rune Fisker, 3Shape's senior vice president of product strategy, stated that "With TRIOS 6, we have changed how you practice state-of-the-art dentistry. This is redefining patient care, in terms of communication, in terms of clinical results and I think this is, truly, dentistry redefined."

CAMLOG® SYSTEM CONELOG® SYSTEM



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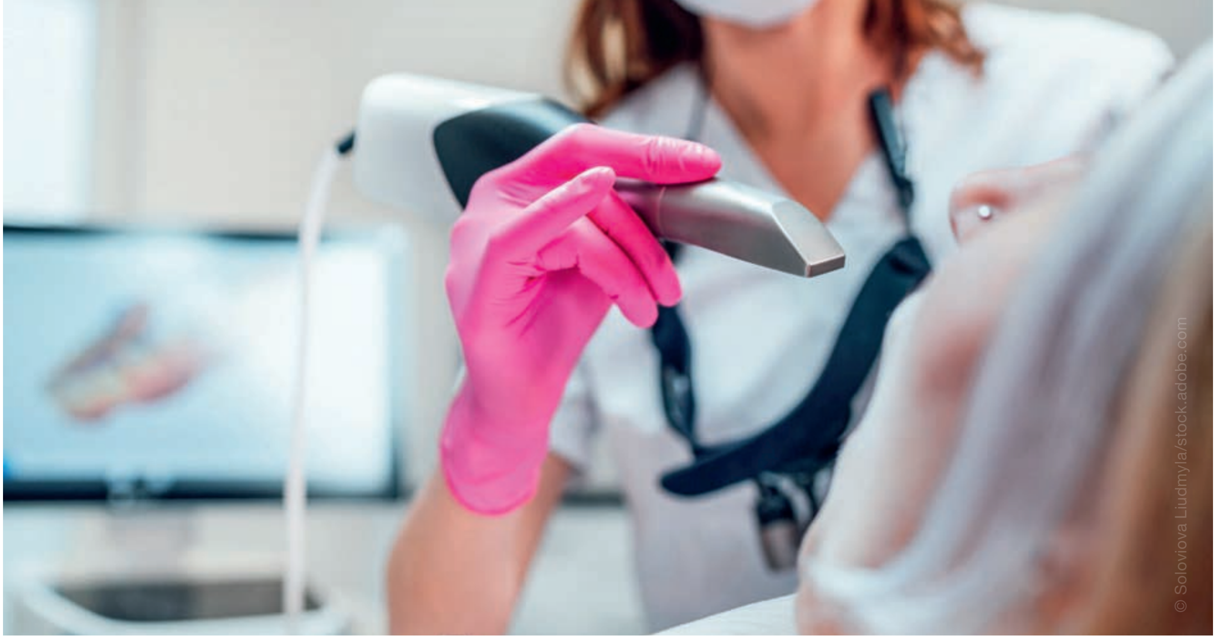

A recent study has found that, despite several issues in application and ease of use, traditional analogue impressions still outperform intra-oral scanners in capturing highly detailed root canal anatomy, especially in deeper areas.

Study compares digital and analogue impression taking for CAD/CAM posts

Dental Tribune International

As digital workflows become increasingly prevalent in restorative dentistry, the accuracy of intra-oral scanners in capturing complex anatomical structures remains a critical factor for clinical success. In light of this, researchers from the Aristotle University of Thessaloniki have recently conducted a comparative study to evaluate the performance of three intra-oral scanners and traditional analogue impressions in recording root canal anatomy for fabrication of posts using CAD/CAM. The findings underscore both the potential and current limitations of digital scanning technologies in demanding clinical scenarios.

The study assessed the performance of the CEREC Primescan, CEREC Omnicam (both Dentsply Sirona) and TRIOS 3 (3Shape) intra-oral scanners alongside conventional polyvinylsiloxane impressions. Using a dental mannequin with a standardised root canal in tooth #21, the team simulated clinical conditions and compared the surface areas captured by each method with those recorded by a high-resolution inEos X5 desktop scanner (Dentsply Sirona).

The results showed that the Primescan scanner achieved the highest accuracy among the intra-oral devices, whereas the Omnicam scanner had the lowest accuracy and smallest surface area measured, potentially indicating a less detailed scan. Notably, the analogue impression method captured the most detailed root canal anatomy; however, the researchers pointed out that irregularities and distortions in the impression material could result in an exaggerated surface area and deviate from the true canal geometry, negatively affecting the clinical fit of the post.

While the analogue impressions demonstrated superior surface area accuracy, the intra-oral scanners—particularly Primescan—offered considerable advantages in workflow efficiency and integration with CAD/CAM systems. In addition, the researchers reported that the depth of the scanned area significantly influenced the precision of the intra-oral scanners.

The study emphasises the need for continued development of digital scanning technologies to improve the ability of intra-oral scanners to accurately capture complex geometries, especially in deep root canals. The researchers concluded that integrating the precision of analogue impressions with the practical benefits of digital methods may lead to optimal clinical outcomes for custom post and core restorations.

Editorial note: The study, titled "Accuracy of CAD/CAM technology in fabricating custom post-and-core restorations: A comparative analysis", was published on 12 February 2025 in the Journal of Esthetic and Restorative Dentistry*, ahead of inclusion in an issue.*

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