

TARGETING PERFECTION with Navident

by **ClaroNav**





“Trace and Place is a real tipping point for dynamic navigation guidance. It has streamlined and simplified the workflow in both the diagnostic and surgical phases to allow state of the art technology to be an everyday component of my surgical implant practice. I can’t imagine going back!”

Dr. George Mandelaris, Periodontist, Chicago, Ill.
(pictured)

Cover: Dr. James Chow

From Virtual to Reality

A breakthrough in computer-aided implantology, Navident offers dental surgeons an easy to use, accurate, highly portable and affordable way to plan the desired restoration and implant placement on a virtual patient, then execute the plan on the real patient's jaw.

Let Navident help you become a better surgeon

Do a better job

Plan the restoration on screen, then optimize the implant positions considering both bone and crowns. Then let Navident guide you to accurately implement your plan in the patient's jaw.

Reduce harm to patient

Perform flapless surgery, leading to reduced patient discomfort, reduced risk of infection, and faster recovery. Avoid unintentional iatrogenic damage to nearby anatomical structures.

Increase your efficiency

Eliminate plaster models, wax-ups and fabrication of guides. Reduce chair time by eliminating raising and suturing flaps.

Reduce treatment costs

Leverage accuracy to reduce the need for custom abutments, bone augmentation and re-work. Use retrievable screw-retained, rather than cement-retained, superstructures.

Attract referrals

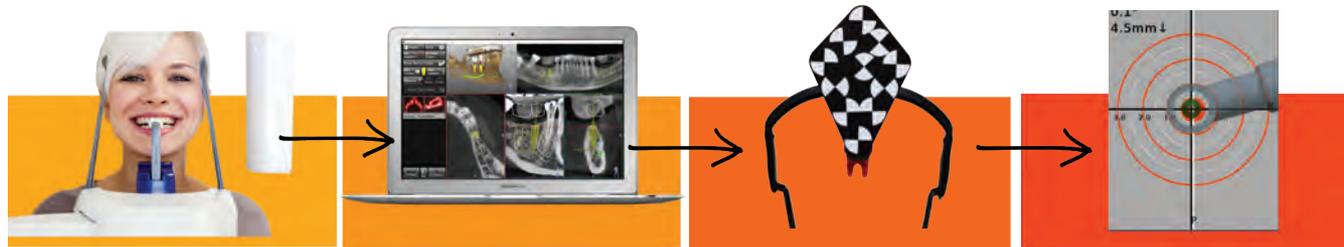
Demonstrate to patients your ability to leverage the latest technology to deliver better, safer, less invasive care.

Relax and enjoy

Reduce your mental stress. Sit up during surgery. Use exciting new technology. Increase your job satisfaction and extend your career.

Simplified Workflow with TaP (Trace Registration)

... which can be performed in a single appointment



Scan

Use a recent scan of the patient. No need to have a CBCT scanner on site

No need for a stent or fiducial body in the scan, simply scan the patient as you would normally or use a recent diagnostic scan. Navident is compatible with all dental CBCT's on the market, including small field.

Plan

Plan restorative-driven implant placement on a laptop

The restoration and implant placement plan is created using the CT image data, optionally with added intraoral scans or any other surface data (STL files). The plan can be modified at any time, even during surgery. Navident is compatible with any implant size and type available on the market.

Trace

Register the CBCT scan to the patient by selecting 3-6 landmarks on the screen and tracing around those landmarks in the mouth with a tracer tool.

The registration process that formerly involved making a thermoplastic stent, taking an additional CBCT scan with a significant opportunity for irrecoverable user error, has become an efficient, user friendly and easily repeatable 2 minute process.

Place

Drill and place the implants under dynamic guidance

Following a brief drill or implant calibration, Navident dynamically presents the deviation between the actual/ planned position and orientation of the drill/ implant, guiding the surgeon to accurately implement the plan.

(see next page)



Stereoscopic camera and light
on a folding arm

Laptop with Navident software
installed

Drill tag

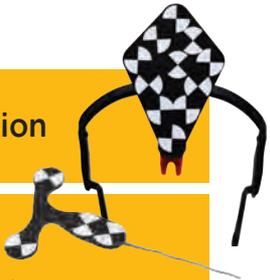
Head tracker

“Having used Navident for more than a year we can now offer a more precise and efficient workflow for our patients who desire immediate implant therapy. Stent, scan, plan and place has now gotten even better with Trace and Place. With this technology a guide is no longer necessary, improving efficiency and eliminating potential errors. As a busy practitioner I am always looking for ways to improve my practice workflow and this technology has done just that.”

Todd Scheyer, Periodontist, Houston, Texas

Accuracy, Safety and Efficiency on TaP (Trace and Place)

Dynamic Navigation for dentistry has traditionally involved the need for a second CBCT scan done with an artificial fiducial (usually aluminum) fixed to the patient's mouth and present in the scan. Trace Registration (TaP) utilizes the recognizable structures naturally present in the scan: teeth, implants, abutments, bony ridge, and bone screws as fiducials and saves a great deal of time for the dental team and their patients.

| | Fiducial Registration  | Trace Registration  |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Workflow | <ul style="list-style-type: none"> - Make a Stent (10-20 minutes) - Take 2nd Scan (10 minutes) - Affix Stent and Jaw Tag (1 min) Total: 20-30 Minutes | <ul style="list-style-type: none"> - No Stent (0 minutes) - Use Diagnostic Scan (0 minutes) - Select 3 Landmarks and Trace each (1 min each) Total: 2-3 Minutes |
| Other advantages of TAP | Poor stent: no surgery, freehand or abandon case | Poor trace: trace again and continue with case |
| Stent in mouth | <ul style="list-style-type: none"> - No Prosthetic Planning - Impeded Access to Surgical Area - Several Steps = More Errors / Inaccuracy | <ul style="list-style-type: none"> - Scanned in full occlusion + Prosthetic Planning - Wide Open Access to Surgical Area - Single Step = Less Errors / + Accuracy |



Two cart options for any practice

Our powerful and compact system just received an upgrade. Now the Navident system is faster, stronger and more flexible.



New additions

1. **Extension arm** for improved tag detection
2. **Upgraded vertical pole** for enhanced industrial design
3. **Laptop tray**. Improved ergonomic design for standing surgeons
4. **MacBook Pro** for faster processing
5. **Signature laptop cover**
6. **Reinforced cart assembly**
7. **Custom handpiece** for reduced connection time

Dynamic over Static

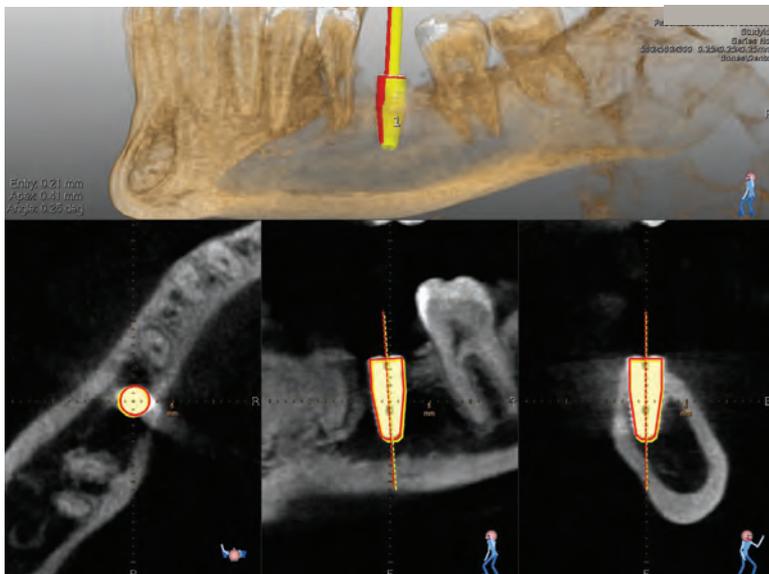
“Real-time navigation is a valuable alternative to stereolithographic (static) guided surgery as it offers the clinician some advantages compared to the former technique. Using real-time (dynamic) navigation one can avoid the fabrication of a stereolithographic template resulting in a less expensive treatment. As navigation is considered as a dynamic guided surgery system, changes to the treatment planning (location and size of the implants, number of the implants, flap or flapless...) can be easily made intra-operatively. Also the tactile feeling during the drilling procedure, as well as the manual control over the implant stability, is still present when using navigation surgery.”

Source: “Use of Dynamic Navigation Implant Surgery In Combination with An Immediate Loading Procedure” by D’haese et al, 2015

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|---------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <p>Flexibility</p> <p>View the CT data and change the plan at any time, even during surgery.</p> | <p>Immediacy</p> <p>Guidance immediately available following planning – no need to wait weeks for guide to arrive.</p> | <p>Predictability</p> <p>More predictable – stent problems can be detected and corrected on the spot.</p> | <p>Safety</p> <p>Accuracy check always available – large errors immediately observed and addressed.</p> | <p>Simplicity</p> <p>User friendly and intuitive planning – no need to design the guide and sleeves.</p> |
| <p>Economy</p> <p>Lower cost per procedure. No expensive kits or specific drills.</p> | <p>Irrigation</p> <p>Better irrigation during drilling of open osteotomy site.</p> | <p>Access to implantation site</p> <p>No need for longer drills which interfere or preclude usage in posterior implantation sites with minimal jaw opening.</p> | <p>Integration</p> <p>Fully open – any implant, any drill system, any handpiece. No need to buy special kits.</p> | <p>Completeness</p> <p>Guides the implant itself, not just the drilling.</p> |

EvaluNav

The EvaluNav application, included in Navident, enables evaluation of the deviations between the planned and the actual position of implants appearing in a post-operative (“post-op”) CT scan. Once the pre- and post-op scans are loaded and registered to each other, the exact position of each implant is detected in the post-op CT and compared to its planned position in the pre-op scan. The deviations at entry and apex and angle are automatically computed and presented both visually and numerically. Provided the implant itself was inserted under guidance, EvaluNav is able to further separate guidance deviation (system error) from drilling deviation (user error).



Pictured: EvaluNav results for Dr. Luigi Stefanelli, Rome, Italy



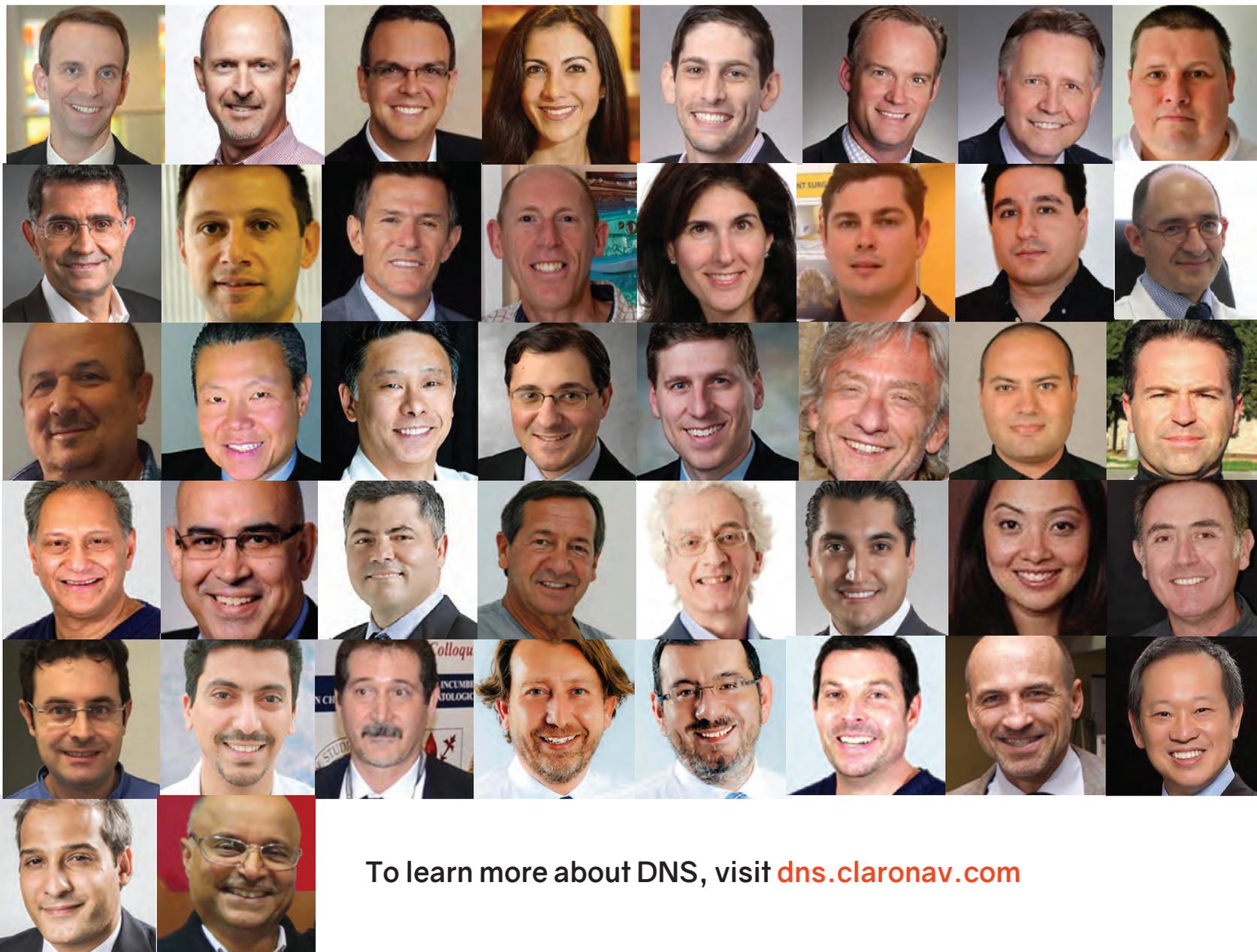
“Navident Trace and Place (TaP) has truly revolutionized dynamic navigation by adding ease of use and eliminating cumbersome surgical stents. It is an unparalleled resource for planning and placement of implants which I have come to rely on to obtain a high level of accuracy at placement every time”

Dr. Silvia La Rosa, Periodontist, Tacoma, WA (pictured)

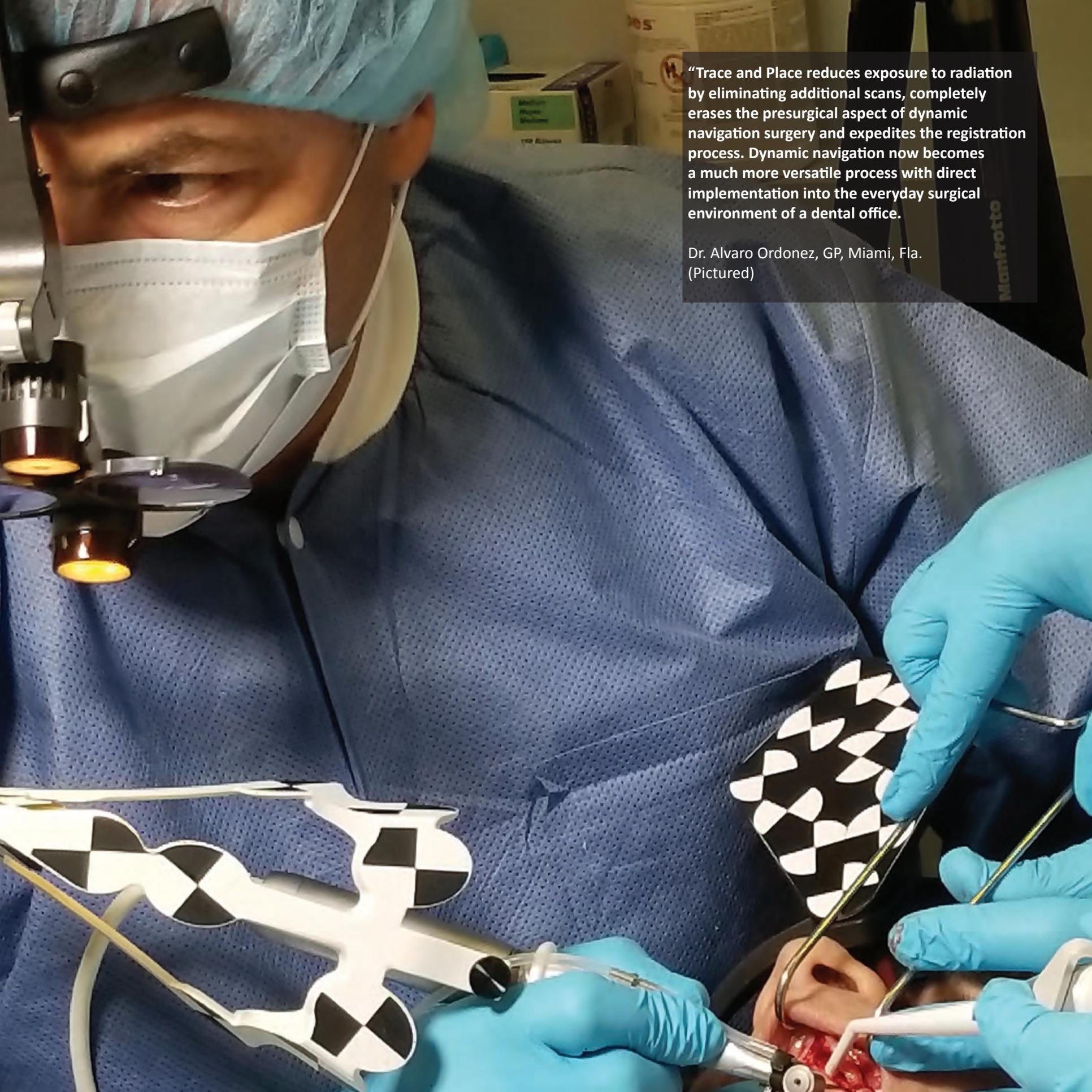
The **Dynamic Navigation Society** is the educational division of ClaroNav, which organizes courses worldwide. Interested dental clinicians can attend Navident training sessions and hands-on courses.

Leading clinicians from around the world have joined the Dynamic Navigation Society (DNS) to be at the forefront of dynamic guided dental surgery. Peer-to-Peer Education is critical to the success of any evolving technology and with our current group of renowned clinicians we feel we are in an excellent position to lead the way.

DNS organizes high quality courses all over North America, Europe and Asia. Courses are offered in a variety of formats (half day, 1-day, 2-day, weekday or weekend) to accommodate the clinician's schedule. Curriculum includes education on demo models and observation of live surgery. First feedback has been extremely positive, as clinicians discover the way from a good treatment plan to an excellent surgical outcome.



To learn more about DNS, visit dns.claronav.com



“Trace and Place reduces exposure to radiation by eliminating additional scans, completely erases the presurgical aspect of dynamic navigation surgery and expedites the registration process. Dynamic navigation now becomes a much more versatile process with direct implementation into the everyday surgical environment of a dental office.

Dr. Alvaro Ordonez, GP, Miami, Fla.
(Pictured)

About ClaroNav Inc.

ClaroNav is wholly owned by us, its founders and employees. Our mission is to do good, have fun and make money.

Our surgical navigation roots go back to the development of the first commercial CT-based navigation system, the Viewing Wand, which our founders developed while at ISG Technologies (now part of IBM). The Viewing Wand, FDA cleared in 1994, was used to guide neurosurgery. After we left ISG and formed our own company in 2001, we developed and marketed the first vision-based optical tracking system for surgery, the MicronTracker (2003). We then helped other companies develop their own complete MicronTracker-based surgical navigation systems, and, starting in 2010, we initiated our own. We worked closely with dental surgeons at the University of Toronto School of Dentistry to develop and market Navident, and with ENT surgeons to develop and market NaviENT.

We currently develop, test, manufacture, market, sell, train, and support our products at our Toronto headquarters. We also market, train and support out of our offices in Europe and East Asia, as well as through a network of national distributors.



Pictured: Scans comparing implants placed with the aid of Navident and without.



Experience Navident with a Master Clinical Trainer in your area
and become part of the worldwide Dynamic Navigation Society

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Purchase Navident for your practice

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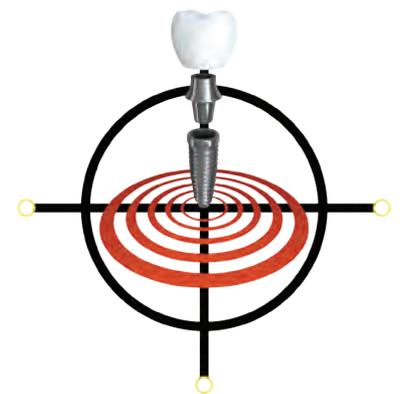
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Navident is cleared by the FDA for sale in the United States
0413 Approved for commercial sale in Canada and the EU