



# A CLINICIAN'S GUIDE TO DIGITAL FULL ARCH



*No PVS, No Model... No Problem*



Dear Doctor,

Over the last decade the industry has experienced a true evolution in the technologies and materials supporting the All-on-X hybrid restorative concept. This revolutionary concept has truly enhanced the way the edentulous arch is restored and if anything, this evolutionary trend will exponentially expand as even more of these innovative technologies become available.

Furthermore, the last decade also produced not only an immense improvement in the accuracy and functionality of intra-oral scanners, but also an increase in the adoption of this technology. With this adoption, the need for a "no PVS impression practice" has also grown and with this, a bigger demand for a fully digital all-on-X workflow.

This workflow does not require a PVS impression and, even more importantly, there should be no processing of any prosthetic component on a physical model (either printed or poured).

The biggest hindrance to this all-on-X digital processing has been the need to cement the titanium interfaces into the milled zirconia or PMMA transitional structures before intra-oral delivery. Once a physical model is brought into the processing workflow, the accuracy is diluted and ultimately invalidated.

The NavaGation Synergy and Absolute Dental Laboratory teams combined their efforts to solve this issue using today's innovative technologies! The NavaGation S.I.M. device is designed to allow the base guide to act as a fiducial marker to assist with the data acquisition during the surgery stage.

This data acquisition greatly reduces the number of restorative appointments required for data gathering while also exponentially improving the accuracy and quality of this very important step.

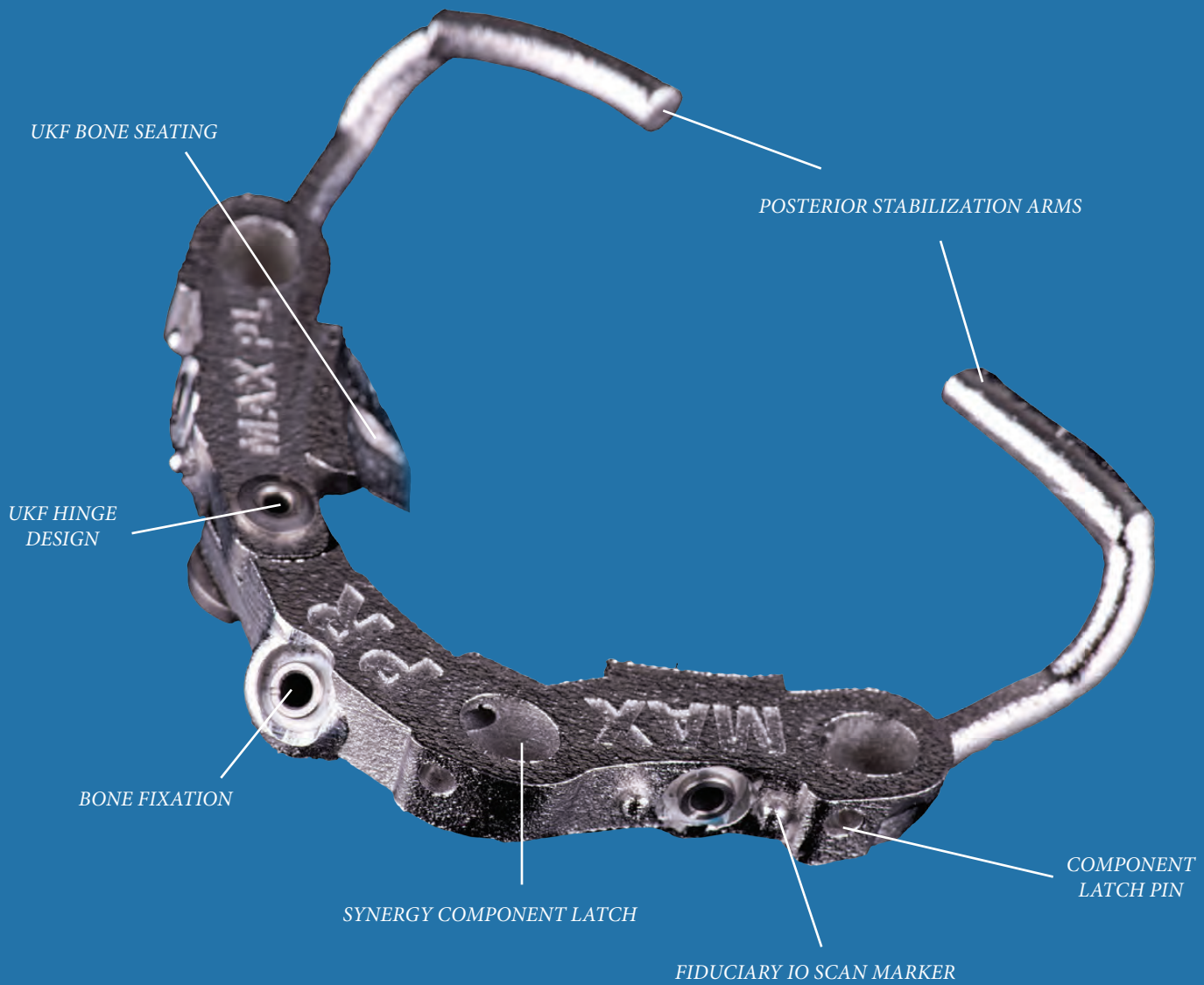
The Synergy system's focus is to bring the restorative, surgical and technical teams together to improve patient outcomes through effective digital collaboration.

This is achieved using digital diagnostic planning and executed with the use of guided surgical and digital restorative processes.

Conrad J. Rensburg



# Navigation Synergy - Base Guide Design



# Synergy Base Guide Options



SYNERGY CARBON FIBER



SYNERGY SLM COBALT





*Dr. Chris Barwacz*



*Dr. Mark Ludlow*



*Dr. Shari Ginsburg*

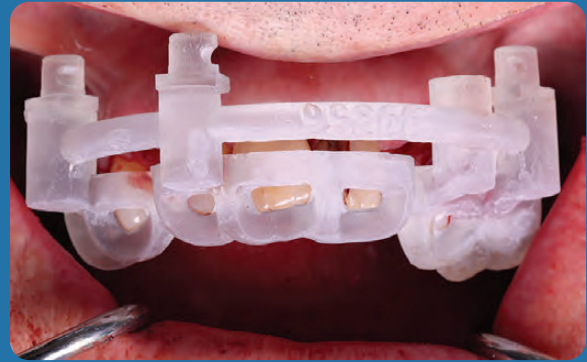


# Synergy S.I.M. Protocol

## Seating the Base Guide



*PRE-OP*



*VERIFY PASSIVE TOOTH ALIGNER SEATING  
BEFORE SURGERY*



*PRE EXTRACTIONS TO ACCOMMODATE  
FIXATION POSITIONS*



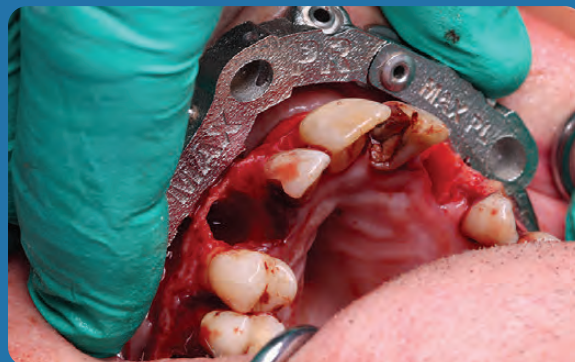
*TISSUE REFLECTION - BUCCAL ONLY*



*COLLAPSIBLE HINGE GUIDE - SIMPLE AND  
ACCURATE SEATING*



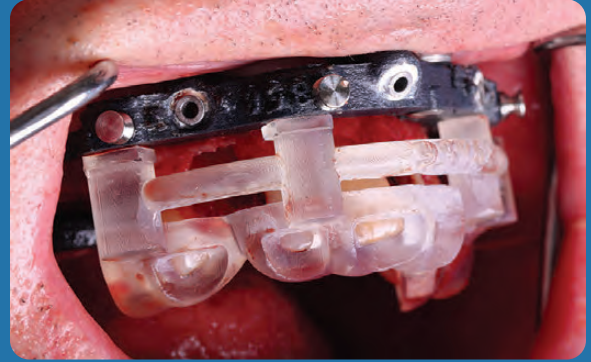
*UKF HINGE GUIDE ENGAGING THE  
BUCCAL UNDERCUT*



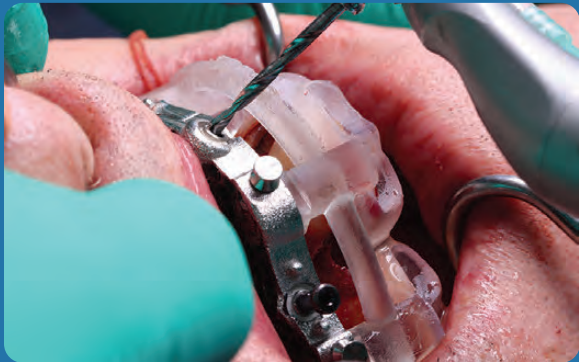
*UKF SEATING VERIFIED ON BUCCAL UNDERCUT*



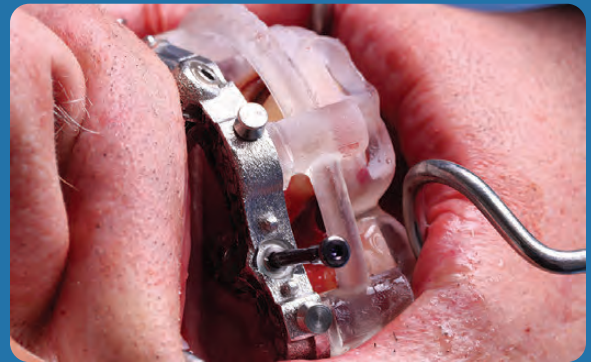
*TOOTH ALIGNER ENGAGED FOR DUAL SEATING VERIFICATION*



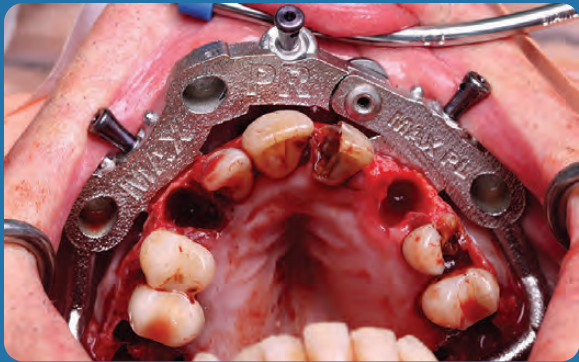
*TOOTH ALIGNER & BASE GUIDE STACK READY FOR FIXATION*



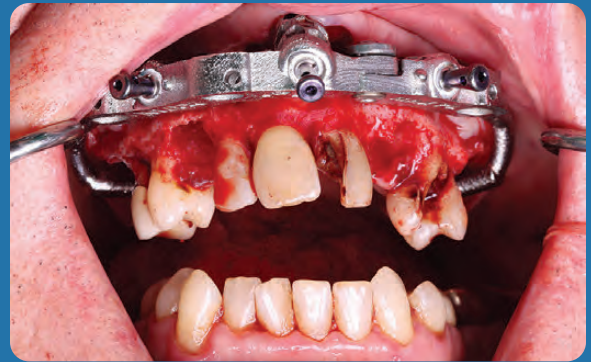
*ACCURATE FIXATION BECAUSE OF DUAL SEATING VERIFICATION INTO THE UNDERCUT*



*EFFICIENT BONE FIXATION PROCESS*



*ACCURATE BASE GUIDE SEATING*

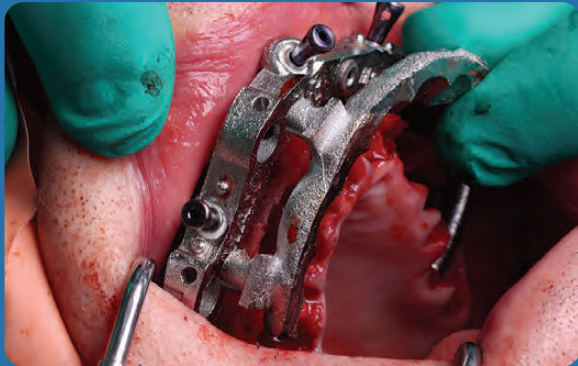


*READY FOR SURGERY*

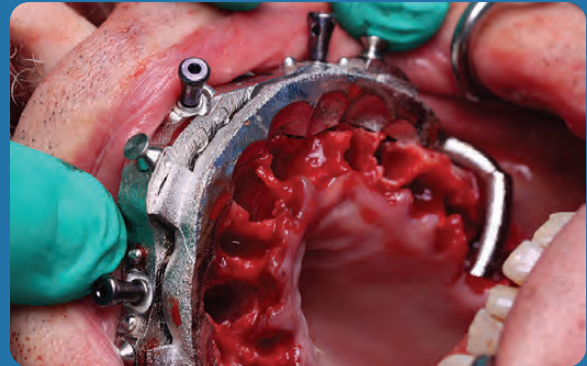


*TOOTH EXTRACTIONS*

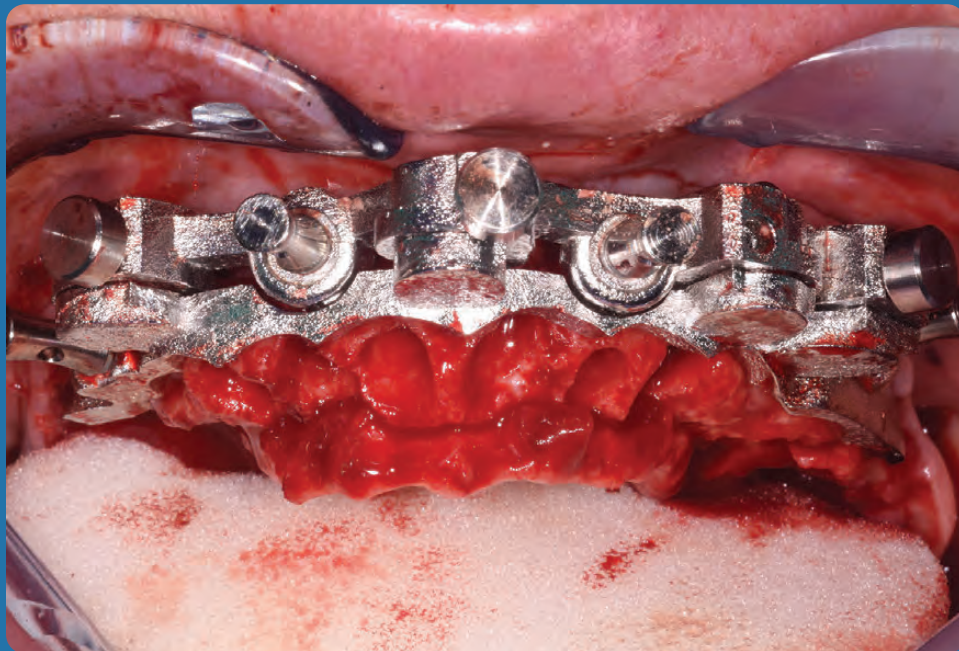
# Bone Plane Reference Options: FP1 Scalloped Bone Plane



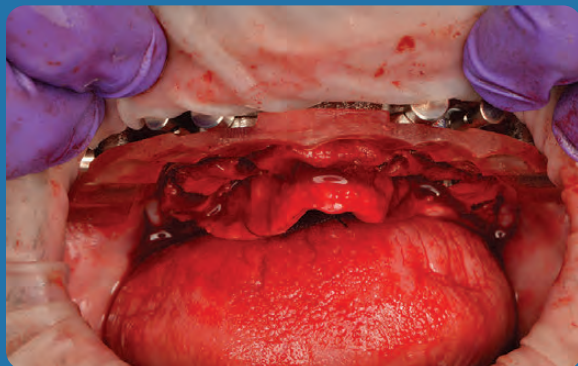
*SEATING SCALLOPED BONE PLANE REFERENCE*



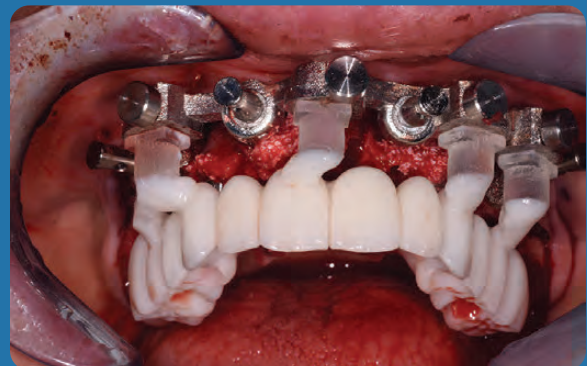
*FP1 STYLE SCALLOPED BONE PLANE REFERENCE*



*SCALLOPING BONE REFERENCE GUIDE*



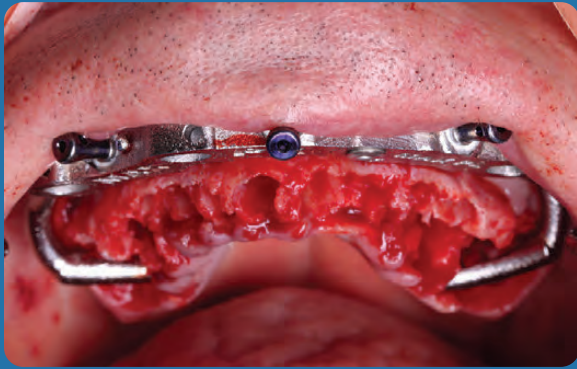
*SCALLOPED BONE REDUCTION*



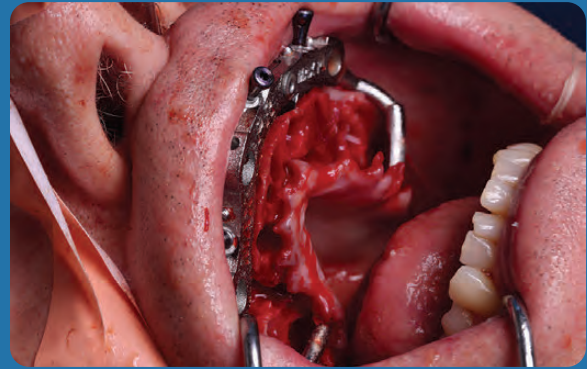
*FP1 SCALLOPED CONVERSION*



# Bone Plane Reference Options: FP2 & 3 Flat Bone Plane



*FP2 & 3 FLAT BONE PLANE REFERENCE*



*FLAT BONE PLANE*



*LATCHED CONVERSION*



*FP3 STYLE SURGICAL CONVERSION*



*SURGICAL CONVERSION*



*Dr. Jeffrey Ganeles*

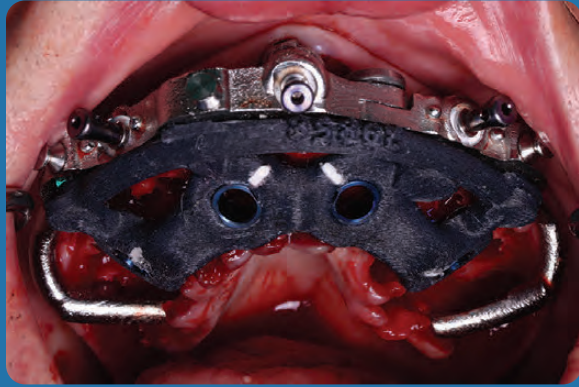


*Absolute perfection  
is not optional!*



*"... I understand that patients are not coming to me to have implants, they are coming to me to replace missing TEETH."  
- Scott Ganz*

# Synergy Surgery Phase



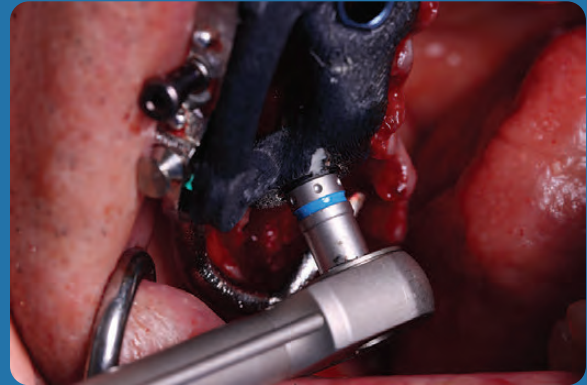
*CARBON FIBER OSSEOTOMY GUIDE*



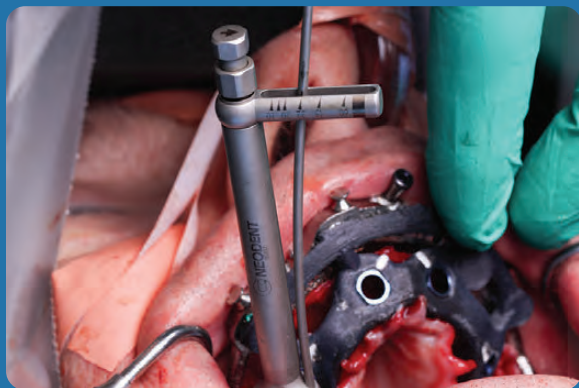
*SYNERGY COMPATIBLE WITH ANY GUIDED IMPLANT SYSTEM*



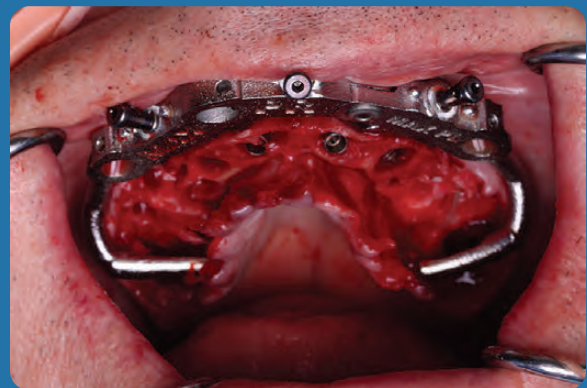
*IMPLANT PLACED THROUGH GUIDE TO DEPTH AND DIRECTION*



*IMPLANT DELIVERED TO PLANNED ROTATION*



*FINAL TORQUE*

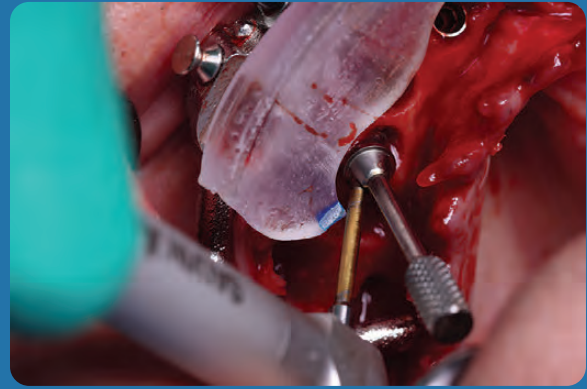


*IMPLANTS PLACED*

# Synergy Abutment Placement



*MUA ABUTMENT ALIGNER*



*LINE SHOWS ALIGNMENT WITH SCREW DRIVER SHAFT*



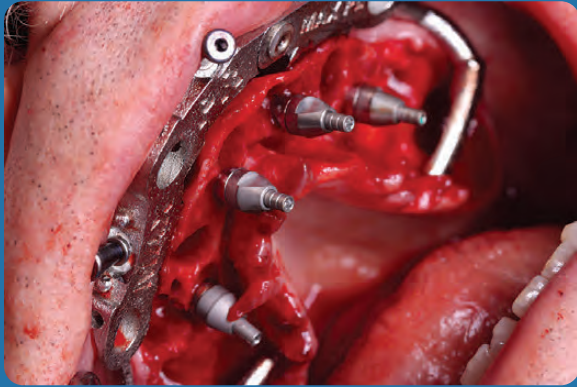
*MUA ABUTMENTS IN PLANNED ROTATION*



*Dr. Mark Ludlow*

# Synergy S.I.M. Data Acquisition

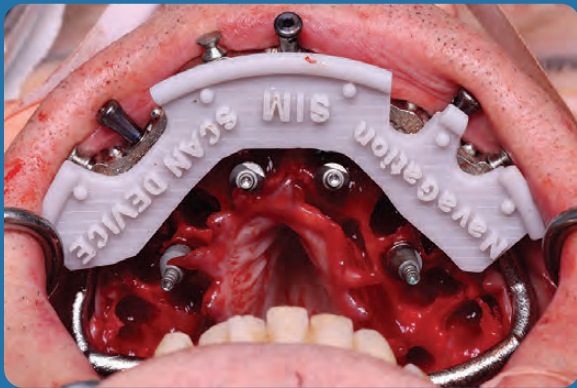
## Intra Oral Scanning



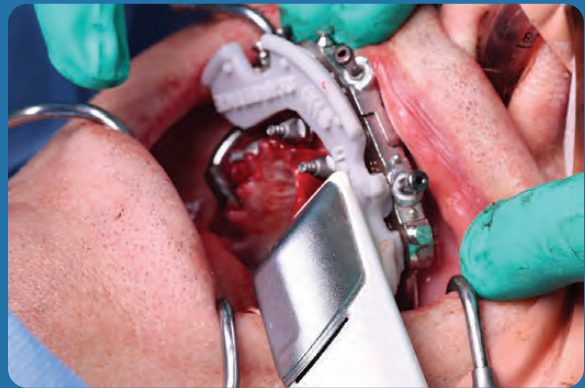
SEAT IO SCANNING POST FOR EITHER POWERBALL OR DESS SYSTEM ONLY



LATCH SYNERGY S.I.M. DEVICE



S.I.M. DEVICE READY FOR SCANNING OF IO SCAN FLAGS



DATA ACQUISITION WITH SCANNER OF CHOICE

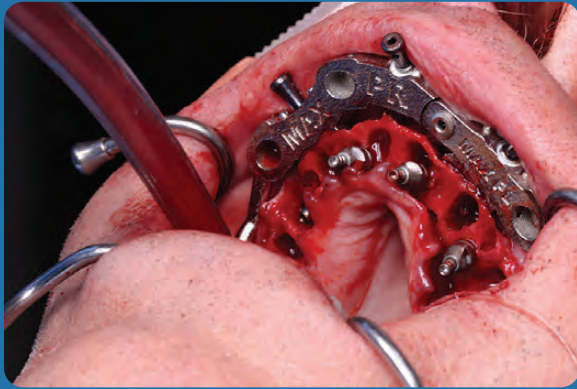


FILE READY TO TRANSFER TO ABSOLUTE DENTAL LAB



POST RUBBER DAM TO BLOCK OUT BLOODY FIELD IF REQUIRED

# PMMA Scan



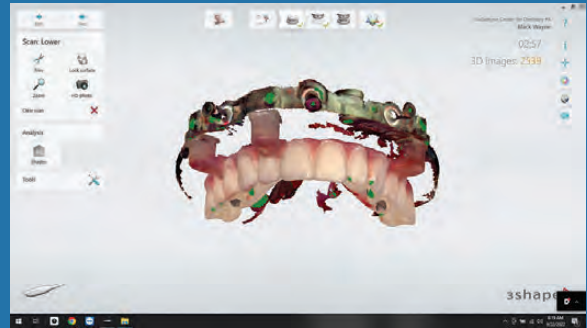
REMOVE S.I.M. DEVICE - DO NOT REMOVE  
TO SCAN FLAGS



LATCH PMMA CONVERSION PROSTHESIS OVER  
TO SCAN FLAGS



LATCH AND DIGITIZE PMMA - INCLUDE BASE GUIDE  
FIDUCIARY MARKERS IN THE SCAN



INTRA ORAL SCAN READY TO TRANSFER TO  
ABSOLUTE DENTAL LAB



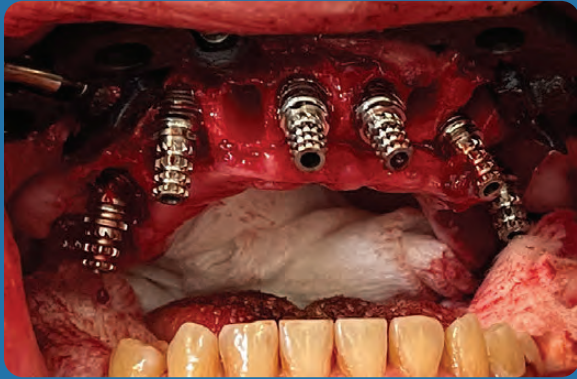
PMMA PROTOTYPE

ZIRCONIA FINAL



Lars Bouma, Bio-Milling Technique

# Synergy Conversion Process



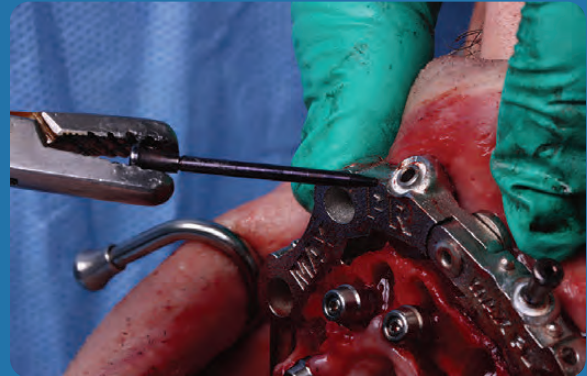
*UNLATCH AND REMOVE PMMA - PLACE  
TEMPORARY COMPONENTS AS PER THE  
CONVERSION SEQUENCE*



*LUTE COMPONENTS INSIDE THE PMMA*



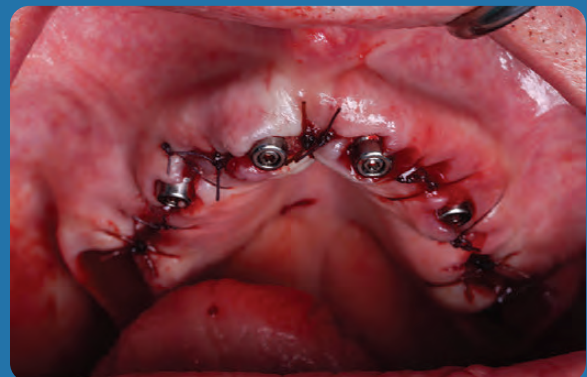
*UNLATCH THE PMMA AND FILL IN THE INTAGLIO*



*REMOVE FIXATION PINS*



*REMOVE SYNERGY BASE GUIDE*



*SUTURE PATIENT*





*CUT CONVERSION LATCHES*



*REPLACE THE PMMA*

## Final Data Acquisition After Healing

The final data for diagnostic design and PMMA prototype fabrication is gathered at the post healing (implant torque check) appointment.

- Scan the surgically converted hybrid in the mouth
- Scan the opposing and register the bite
- Remove the hybrid and scan the heads (tops) of the MUA abutments and tissue on the ridge (vestibule not necessary). Torque test the implants and replace the hybrid
- Gather patient pictures. Full face with eyes and ears straight on with focus on the upper lip and nose area. Also retracted smile, high smile and relaxed positions. Include patient expectations and diagnostic adjustments if needed



*SCAN PMMA CONVERSION  
FOR BIO-COPYING*



*SCAN OPPOSING AND REGISTER THE BITE*



*REMOVE PMMA CONVERSION. TORQUE TEST IMPLANTS  
AND SCAN TISSUE WITH EXPOSED MUA ABUTMENTS*

# Prototype & Final Hybrid Fabrication

The laboratory will STL file match and merge all the data gathered at the surgical and post-op healing appointments. This data, combined with smile pictures and diagnostic notes gathered by the clinician, will now be used to fabricate a prototype for final patient approval or adjustments.

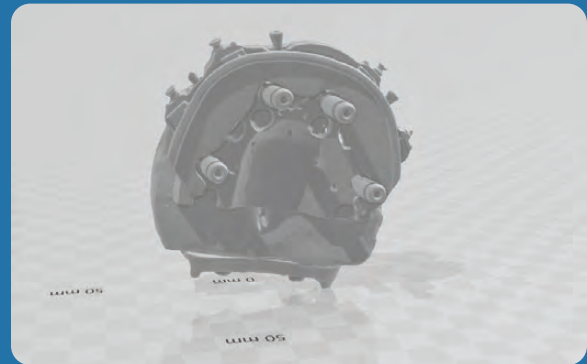
This PMMA prototype will be delivered to the patient at the first restorative appointment.

This device is functional and can be worn by the patient for several weeks, if required. If additional adjustments are needed, (bite/esthetic/midline etc.) they must be made to the PMMA hybrid and re-scanned for final bio-copy.

The final hybrid will be delivered at the second clinical appointment and will be an exact copy of the patient approved prototype. This final zirconia hybrid will require no further adjustments at delivery.



*DESIGN & BITE FILE*



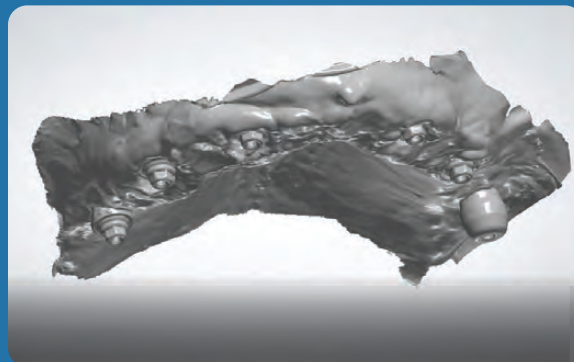
*IMPLANT POSITION FILE*



*MUA FILE*



*PMMA SCAN FILE*



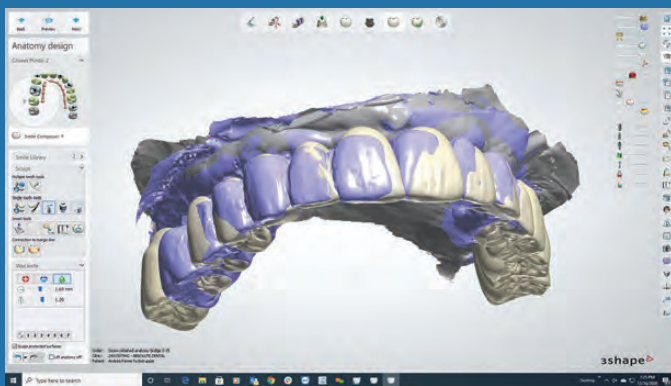
*HEALED TISSUE SCAN*

# Diagnostic Design & Review

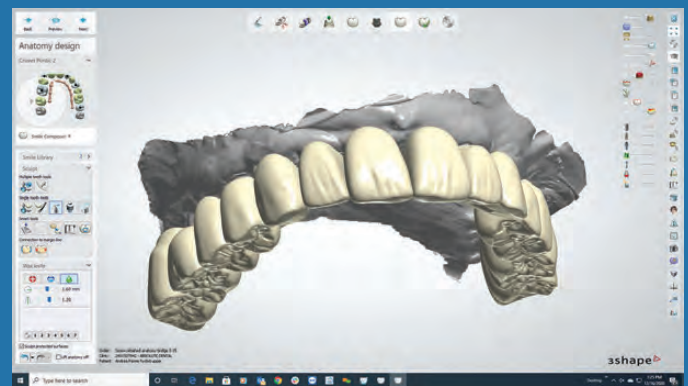
The Absolute Digital Diagnostics team now uses the surgical conversion STL data that was captured at surgery stage as the foundation to design the PMMA prototype. This updated prototype design incorporates the bio-copied bite as well as any additional adjustments requested by the restorative team. Once a proposed design is ready, the Absolute team will set up a remote review with the restorative team for case evaluation.

In this collaborative meeting, the design is super-imposed over the patient's smile pictures to allow for comparison between the pre-op and suggested prototype try-in. After approval, the digital data will be transferred to an analog prototype device.

This PMMA device can also be delivered to the patient to wear as an interim prosthesis. This option will allow the patient additional time for esthetic evaluation and will give the restorative team time to establish a more accurate bite if needed.



DIAGNOSTIC PROPOSAL MERGES WITH TRANSITIONAL PMMA



FINAL DESIGN READY FOR PROTOTYPE TRY-IN



DIGITAL CASE DESIGN FOR REMOTE CLINICIAN'S REVIEW AND APPROVAL



ABSOLUTE  
DIGITAL DENTISTRY

# Restorative 1st Clinical Appointment



*PMMA PROTOTYPE TRY-IN*



*REQUIRED ADJUSTMENTS ARE MADE DIRECTLY TO  
PMMA DEVICE IF NEEDED*



*REGISTER SMILE PICTURES*



*LIPS AT REST*



*FULL FACE*



*Dr. Christian Yaste*

# Restorative

## 2nd Clinical Appointment

The final hybrid is guaranteed by the Absolute A.R.T team to be an exact copy of the approved PMMA prototype. It is therefore crucial to not only work out all bite and esthetic issues during the PMMA phase but also document a patient sign off. The importance of not adjusting to post sintered zirconia has been well documented, and therefore the goal is to deliver a final hybrid that requires no adjustment. The Absolute team will also deliver the PMMA hybrid with the final. This device can be used as a emergency hybrid if ever required.



*PRE-OP*



*FINAL HYBRID IS AN EXACT COPY OF THE APPROVED PROTOTYPE AND WILL NOT REQUIRE ADJUSTMENT AT DELIVERY*



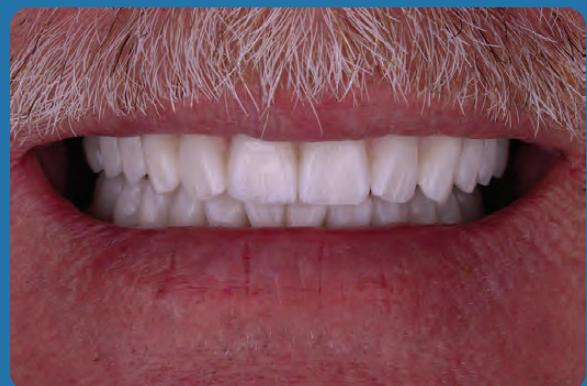
*APPROVED PROTOTYPE*



*FINAL DELIVERY*



*FINAL DELIVERY*



*FINAL OCCLUSION*

# Absolute A.R.T. Team



THE APPROVED PROTOTYPE DATA IS TRANSFERRED TO ZIRCONIA FOR THE FINAL



TO PRESERVE THE INTEGRITY OF THE MATERIAL THE MILLED STRUCTURE IS FINAL CONTOURED BY THE ABSOLUTE ART TEAM IN GREEN STAGE



TO GUARANTEE MAXIMUM STRENGTH, NO ADJUSTMENTS ARE MADE AFTER SINTERING AND TO ENSURE A PERFECT DUPLICATION OF THE APPROVED TRY-IN, NO LAYERING CERAMICS ARE ADDED TO THE STRUCTURE



MIYO STRUCTURE IS APPLIED TO GINGIVAL AND MIYO LIQUID CERAMICS PROVIDES FINAL COLOR



ABSOLUTE SIGNATURE HYBRID READY FOR DELIVERY

ABSOLUTE  
*Signature*  
A.R.T. TEAM



Artistry by Jack Marrano

# Absolute Dental Lab

Established in 1994, Absolute Dental Services started as a small fixed prosthetics lab in the Triangle area of North Carolina. More than two decades later, Absolute's restorative focus is much broader but their attention to product detail and exceptional customer service has not changed. In 2019, Absolute Dental was voted NADL laboratory of the year by their peers.



Absolute is a true full-service partner, with a team nationally and internationally renowned for their expertise in creating world-class esthetics. Their use of cutting-edge technology in CAD and milling as well as their extraordinary dental implant, guided surgery and high-end removables teams, enables them to deliver lifelike and functional dental prosthetics in even the most complex cases.

Serving their customers with Absolute Excellence has always been the primary focus of the Absolute team. Their vision and dedication is reflected in the company motto, *Perfection Is Not Optional!*

They welcome clinicians from all over the country to become part of the Absolute family!

## NavaGation Precision Guidance® team

The NavaGation Precision Guidance® division was established in 2014 with the goal to create synergy between the surgeon, restorative and technical teams. Today, with more than 2500 guides and successful surgeries behind them, Absolute is proud to offer their expertise in diagnostic work-up, pre-planning, guide design, processing and chairside support to our clinicians.

By offering a true “prosthetic down” planning approach, our NavaGation Precision Guidance® team has become a trusted partner for surgical and restorative teams across the United States. Advancements in planning software, FDM 3D printing of materials like implantable PEEK Carbon Fiber combined with other technologies like select laser melting, has created a true synergy between the surgical plan and the final prosthetics. Having an experienced technician assist with plan set-up, team review and fabrication of the final prosthesis has proven to create a very predictable workflow.

Select Laser Melting  
done exclusively by



We invite you to restore your next case with us!





*Artistry by  
Chris Barwacz and  
Jack Marrano*



1-844-NAVAGAT (628-2428)  
1-844-293-ADS1 (2371)



SCAN HERE