A CLINICIAN'S GUIDE TO
SCANNING PROTOCOLS

NavaGation™
PRECISION GUIDANCE

NavaGation™ Synergy Workflow: Surgery to Final

This protocol manual addresses the most commonly asked questions regarding scanning protocols of Dentate as well as Edentulous patients. The accuracy of any guided case relies heavily on the accuracy of not only the dicom data but also the ability for the planning team to model match the tissue model to the Dicom Model.

The Synergy Guided workflow not only provides the surgeon with a predictable surgical solution, but also gives the restorative clinician an efficient restorative starting point. Planning the implant emergence, required bone reduction and conversion PMMA, from a true diagnostic work-up, equates to no economical or restorative surprises when processing the final. The Synergy diagnostically designed latched conversion is now the starting point of a predictable hybrid restorative workflow.
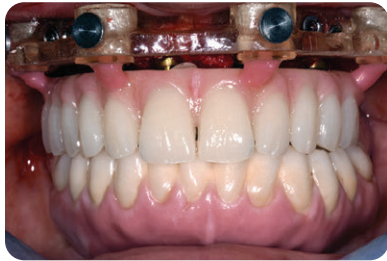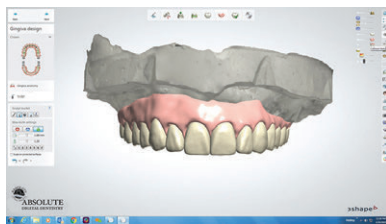

DIAGNOSTIC LATCHED CONVERSION

LESS INVASIVE UKF - FASTER RECOVERY

Surgery –
Dr. Jeffrey Ganeles,
Design – NavaGation™ Team

SOUTH FLORIDA
CENTER FOR
PERIODONTICS &
IMPLANT DENTISTRY

CONVERSION STL IMPRESSION AND DIAGNOSTIC CHANGES
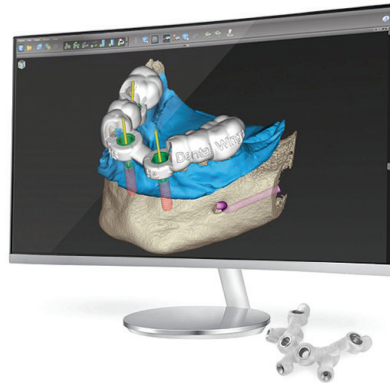

CONVERSION BASED PROTOTYPE

FINAL DELIVERY MONOLITHIC ZIRCONIA

Triangle
Restoration
Dentistry

Restorative – Dr. Mark Scurria and
Absolute Signature Prosthetics

Table of Contents

CBCT Scanning

Please take a full-head scan if possible, we can work with single-arch scans if necessary. Set DICOM to 0.2 slice thickness, export in raw uncompressed DCM format - zip and send all files. Take all scans with the patient out of occlusion.

- **Dentate** - stabilize and keep patient out of occlusion using a cotton roll.
- **Partially Edentulous** - Do not scan with metal-based prosthesis in. Acrylic based partials can be left in but are not required
- **Edentulous**
    - <u>Without denture</u> - have patient bite on cotton roll to keep arches separated
    - <u>With denture</u> - refer to dual scan protocol below
        - º Denture must be new or hard relined before scan. Soft reline material will cause flare on the scan
        - º Place scan markers (as noted in dual scan protocol)
        - º When scanning denture, place denture on foam or scanning jig to elevate, do not leave denture resting on the plate
        - º Scan denture first, then scan patient with denture in place
        - º Absolute can provide scan markers, contact your nearest Absolute Office

Dual Scan Protocol

- **Items Needed**
  - Patient
  - Patient Denture or Removable Appliance
  - SureMark Markers
  - FutarBite Registration Radiation Approved (Recommended for Edentulous)
  - Chairside Hard Reline - Recommended to ensure a snug fit against the soft tissue (Must be a non-metallic substance that is Radiation approved such as Tokuyama Rebase II or Dentsply DuaLine)
- **Preparation**
  - Check fit of appliance
  - Hard reline as necessary
  - Dry the appliance so the markers will adhere properly. Markers must not move.
  - Mark the appliance with six markers (for a partial or full arch appliance)
  - Cut the markers, if necessary, so that they fit on the appliance
  - Place markers randomly on the appliance (Mesial, Distal, Superior, Inferior, Buccal, Lingual)
    - º Be sure the markers are NOT on the Intaglio (soft tissue) surface
- **Scanning an Edentulous Patient**
  - Scan the appliance first
    - º Position the appliance in the scanner as if it is in the patient's mouth (place onto a foam or Styrofoam block)
    - º Scan the appliance with the same settings that you use for a patient scan
  - Be sure that all markers are clearly visible in the scan of the appliance
  - Prepare a bite registration if the patient is wearing a full arch appliance to ensure that the appliance is seated
  - Scan the patient
    - º Use normal implant planning protocols and the largest FOV
    - º Ask the patient to bite firmly on the bite registration to blanch the gingiva
  - Be sure that all the markers are visible in the patient scan and that the appliance is seated properly
  - Note: If you have an intra-oral scanner available, it is not necessary to take two CBCT scans. Simply use the intra-oral scanner to scan the appliance with markers on. Fully digitize the denture capturing the intaglio surface, scan markers, and teeth. Take the CBCT with the appliance and applied markers in the patient's mouth. Be sure to take the CBCT out of occlusion.
- **Scanning a Dentate Patient**
  - If a patient has significant fillings or crown-and-bridge work it may be impossible to match up models to the CBCT alone, owing to flare on the scan. With a similar dual-scan protocol, reference marks can make the scan usable.
  - Make a hard-soft suck-down on the patient's existing dentition (Absolute can provide a suck-down for you), apply six markers just as you would a denture. Scan the patient and suck-down using the protocol above.
  - Return all models and suck-down with markers attached to Absolute.
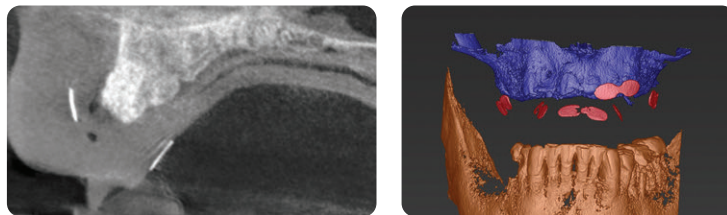
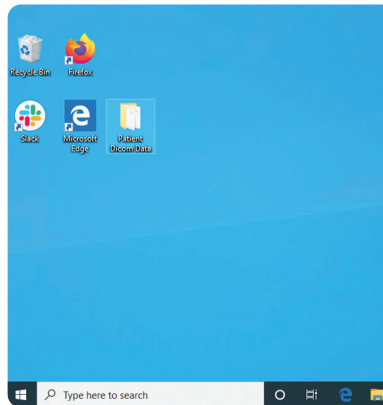*CBCT with markers (bright white) on scan appliance (left) and resulting segmentation (right)*

Scan appliance with markers applied (left), hard-soft suck-down with markers applied (center), on foam in CBCT scanner (right)
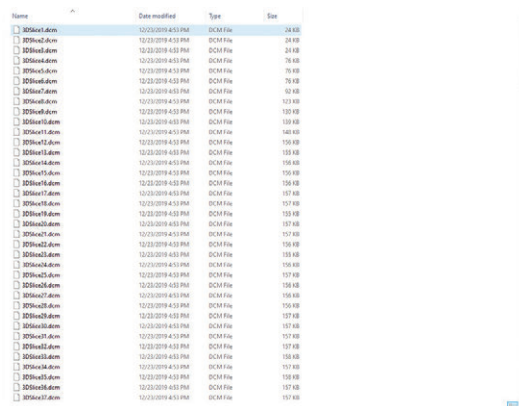
Exporting Your DICOM File

- **General Cases**
  - Create a new folder (patient name and/or ID # are recommended to name folder)

  - Return to your scanning software and export the DICOM to the folder you created
  - Open this folder and verify that it is filled with '.dcm' files. These are the hundreds of slices taken by your scanner


  - Right click on the folder and select 'send to > compressed (zipped) folder'. This will compress the files into a zipped folder
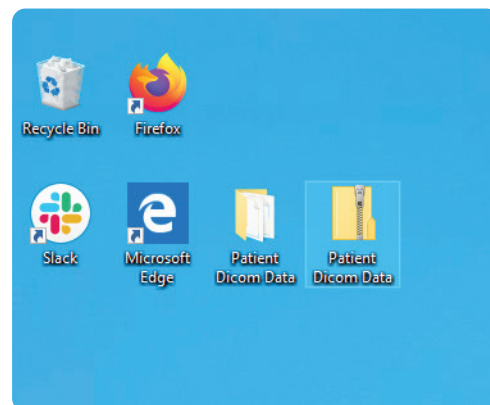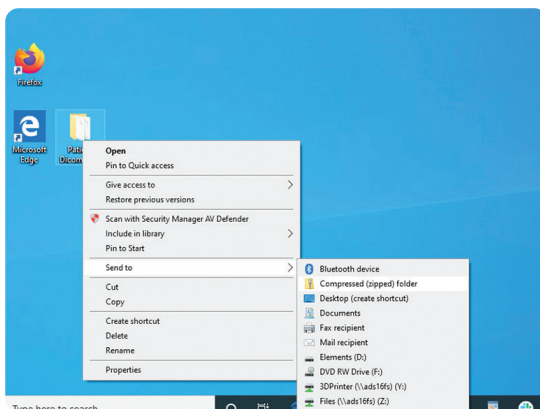
  - This zip file is ready to be uploaded to our HIPPA compliant web portal. Please review the Uploading section, provided in this manual, for an easy to use step by step guide for submitting your DICOM data to us

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Intra-Oral Scans

- Accurate intraoral scans are critical to the Synergy guided workflow. Please check your scan for data holes, noise, image layering or evidence of movement immediately after scanning, and re-scan if distortions are noted
- Include a bite scan, separate upper scan, and separate lower scan on **all** Synergy cases
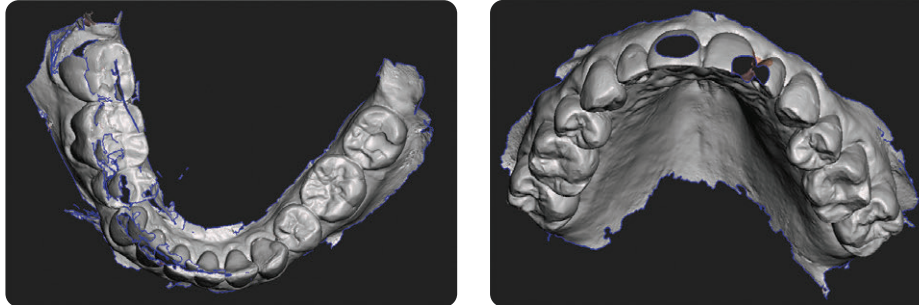
*Patient moved or image layering (left), data holes (right)*

- On Synergy Zero cases, intra-oral scans need to capture as much of the vestibule as possible
- Export and upload to Absolute

- **3M**
  - Log in to your 3M Connection Center account
  - Select your patient and choose the .stl files to download
  - Click download
  - Find files in your downloads folder and upload to Absolute

- **iTero**
  - Choose the scan options of 'icast' or 'irecord'
  - Complete scans
  - Login to Myaligntech.com
  - Find the patient and select their case
  - Click on 'Export'
  - Choose 'Open Shell'
  - Under format choose 'Two Files'
  - Change folder name to patient name, if preferred
  - Export
  - Upload file to Absolute
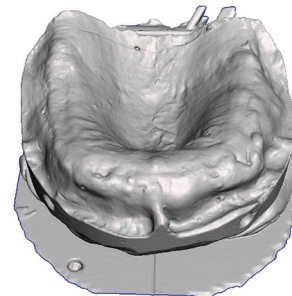
Edentulous Scan

- **CEREC**
  - Set up the case in CEREC software
  - Advance case to Model phase
  - Click arrow on upper left corner. Select 'Export'
  - Choose where you would like to save the file
  - Go to 'save as type' and choose .stl
 - Save and upload to Absolute

- **TRIOS**
  - Open your scan in Ortho Analyzer
  - Click 'Export Model As'
  - Select your preferred file location or create a new folder
  - Export desired models
  - Upload to Absolute

Bite Scan

Uploading to Our Server

- Please visit our website located at https://www.absolutedentalservices.com
- On our home page please click the button labeled "Navagation Synergy"
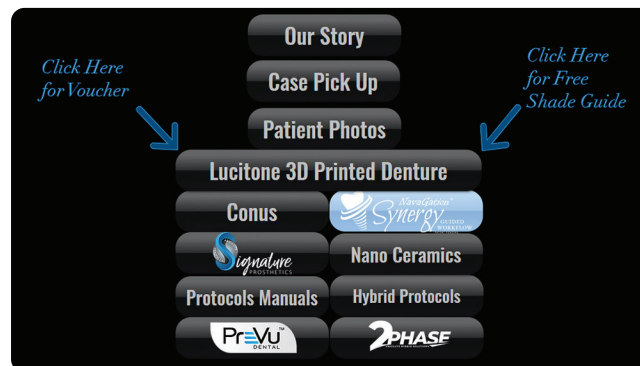
- To Launch our upload page, click the button labeled "Submit Digital RX and Dicom"

- On the next page you will find our Upload and Submission form
- The top of the form requests basic contact information which we will use to better organize your data for production

  - Fill out the form completely, as it is a tool for us to communicate with you throughout the entire process

- Scroll down to DICOM submission and fill in the necessary information to upload your DICOM files

Uploading to Our Server (cont.)

- To submit your DICOM data to us, please select the "Yes" Radial button next to the labeled "Need to Submit Dicom"
- You can submit multiple DICOM Scans for your surgery, as well as an Upper Scan, Lower Scan, and Bite Scan .stl files. To select your file to be uploaded, click the "Choose File" Button. A system File Explorer window will open, allowing you to search for your file's location
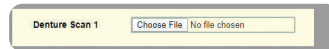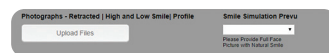

- Select your file location and click "Open".
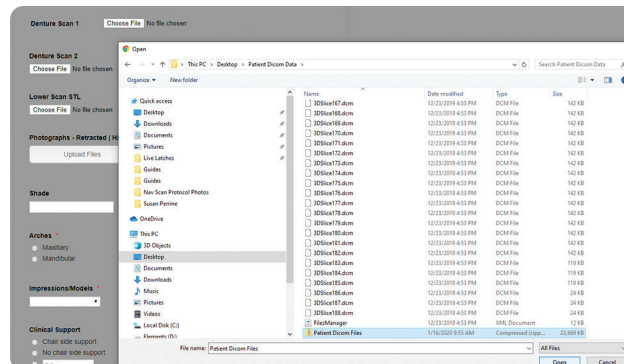
- Once you have clicked "Open", you will be returned to the form. The appearance of your DICOM file name confirms that the data will be sent to us upon submission of the form.
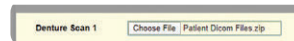
- Scroll down for the Smile Photos submission section. Smile Photos are extremely important for the Synergy process.

- This information allows us to:
  - Determine bone reduction based on smile-line
  - Enhance the patient experience and meet patient expectations. Absolute can superimpose a diagnostic wax-up onto smile pics for patient approval
- There are five different types of pictures that will greatly help us in case planning and wax-up creation
  - **Full Face**: Capture from the top of the patient's head to just below the chin. This should be taken with the patient standing, facing directly in front of your camera. Have the patient smile and keep eyes open
  - **Full Smile, Close-Up**: Capture from just below the nose to below the lower lip. This photo should be taken by having the patient relax their lips and then laugh to get a full smile
  - **Relaxed Lip, Close-Up**: Capture close-up from just below the nose to below the lower lip. This photo should be taken in the relaxed lip position. You can have the patient say the letter M to get this position
  - **Retracted Lips**: Capture close-up from just below the nose to below the lower lip. This photo should Include posteriors and as much gingiva as possible. Also make sure this shows the correct position of the midline
  - **Side Profile**: Capture from the side profile. This photo should show lip support with lips relaxed.

Uploading to Our Server (cont.)

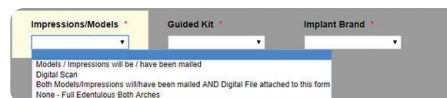- Enter the shade selection for your final prosthetic and select which arch you will be operating on

  - Please note that for a dual arch case, each arch must be ordered separately

- The following section will enable you to select Implant and Guided Kit brands. You will also specify your method of sending models/impressions.
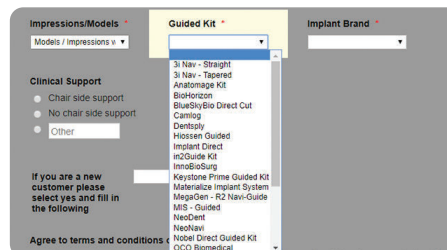

  - From the first drop down menu, please select the method of sending us your models/impressions from the four options listed.
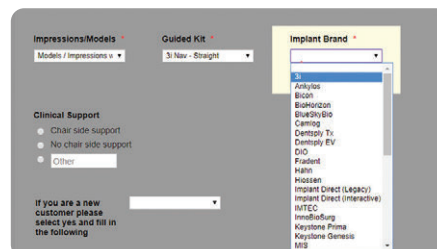

  - Please select your Guided Kit of choice. We offer a wide variety and our list of systems offered is constantly growing. If a desired system is not listed, please select "Other" and we will contact you regarding your selection
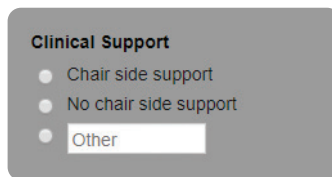

  - Select the Implant Brand. If your desired Implant Brand is not listed, select "Other", and we will contact you regarding your selection
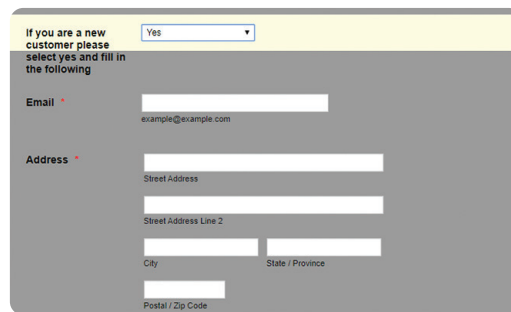
Uploading to Our Server (cont.)

- Scroll down to the Clinical Support section, to specify whether you would like Chairside support or not.

- If you select chairside support, one of our skilled technicians will come to your practice on the day of the surgery and walk you through our process and assist during the operation. If this is your first case with us, Chairside support is free, as it is our pleasure to introduce you to the Synergy system. Additional visits for subsequent surgeries will cost **$850** per visit.

- If you are a new customer, we ask that you give us a little more contact information so we can better serve you
  - Please select "Yes" from the drop down menu, and then fill in the requested information
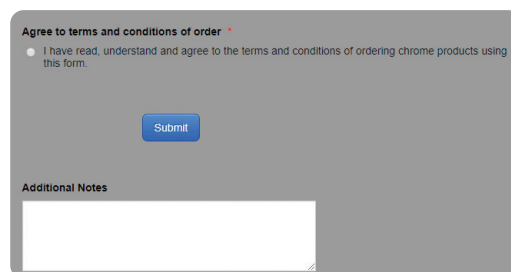
- Review the information that you have filled out, and when you are ready to submit, click the "Agree to the terms and conditions of order" radial button, then click "submit".
  - If there is any other information you'd like us to have, please write it in the "Additional Notes" text field before submitting

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.

Today, 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 sections, enables them to deliver lifelike and functional dental prosthetics in even the most complex cases.

The company motto, *Perfection Is Not Optional*, holds true and serving their customers with Absolute Excellence has always been the primary focus of the owners, branch partners and team members. They welcome clinicians from all over the country to become part of the Absolute family!

NavaGation™ Team

The NavaGation™ guided surgery division was established in 2014 with the goal to create synergy between the surgeon, restorative and technical teams. Today, with more than 2000 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™ team has become a trusted partner for surgical and restorative teams across the United States. Advancements in planning software, 3D printing and 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

BERTRAM
DENTAL LAB

We invite you to restore your next case with us!

NavaGation™
SynergyZero
GUIDED WORKFLOW
PATENT PENDING

LOUIS   NICK   DEAN   MATT   CONRAD   BRIAN   KATHLEEN   JAY   RICK

Ceramic Artistry   *By Yunsoo Kim*

NavaGation™ Synergy Zero:
the ultimate link between
surgery and final prosthetics

ABSOLUTE
25 Years
OF ABSOLUTE EXCELLENCE
DENTAL SERVICES

NavaGation™
SynergyZero
GUIDED WORKFLOW
PATENT PENDING

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Signature
PROSTHETICS

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