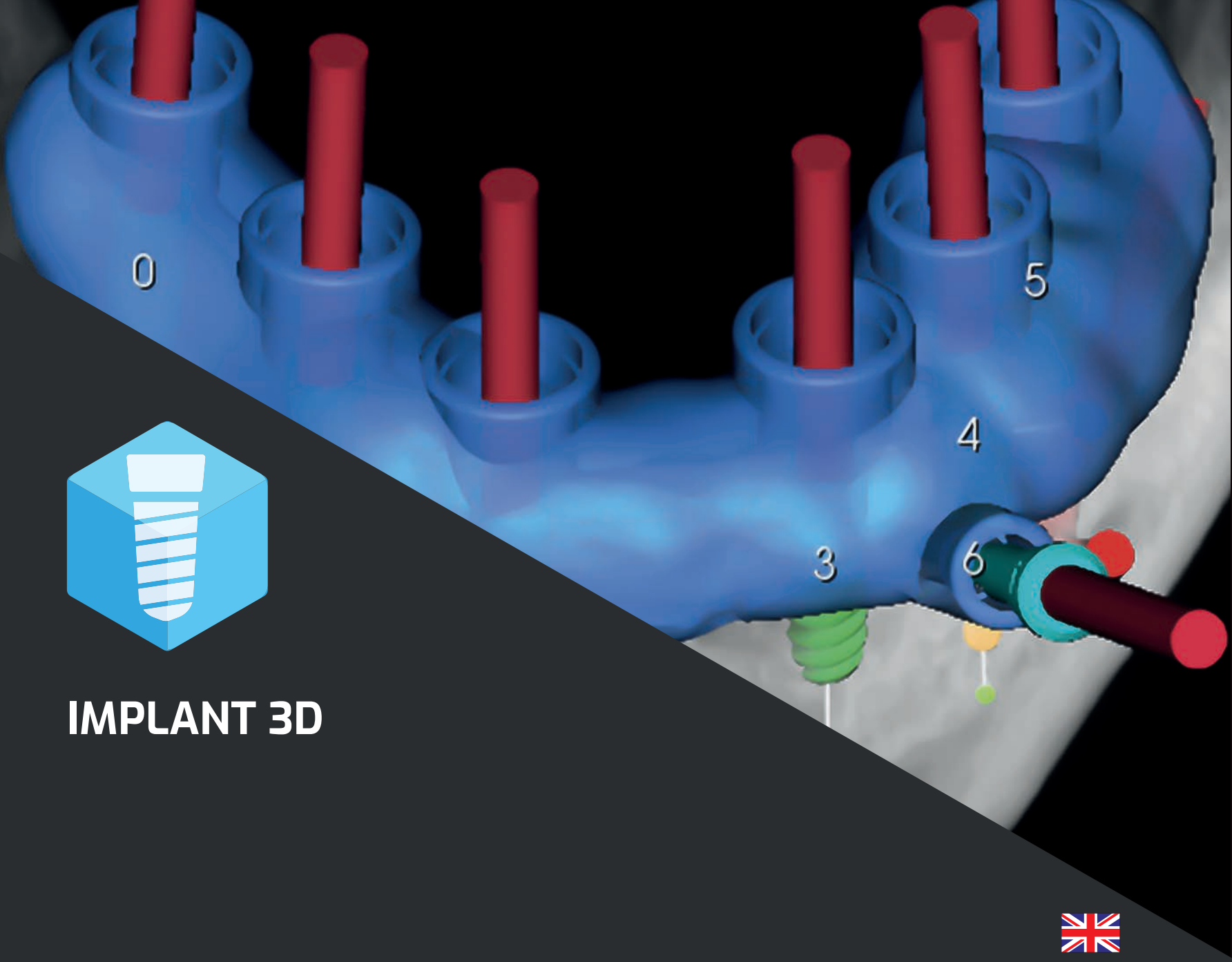


IMPLANT 3D

IMPLANT 3D GUIDE PROTOCOL

INDEX

IMPLANT 3D

INTRO

1

Implant 3D Guide is a method of making surgical guides for dental implant prosthetic intervention by means of software planning.

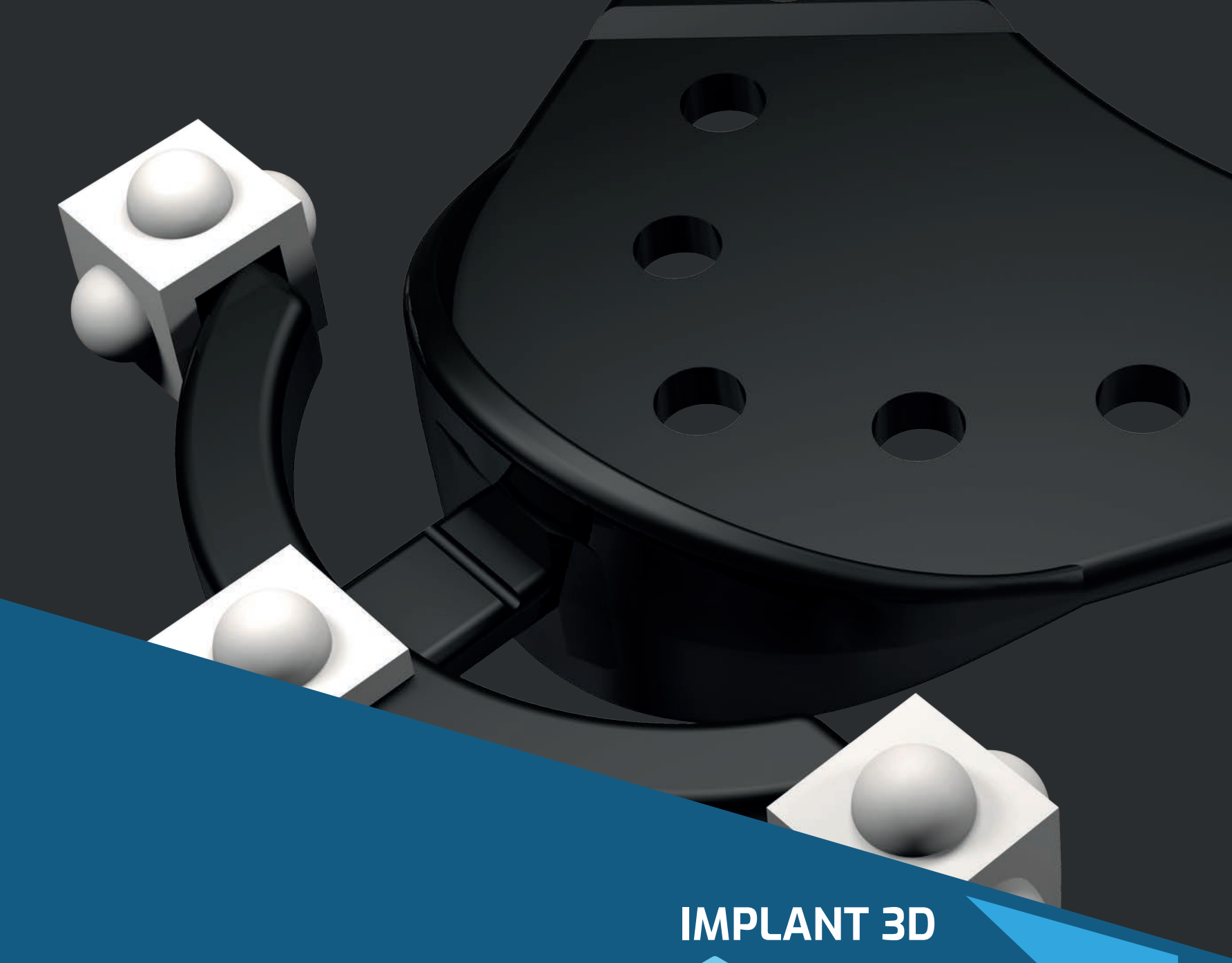
The **Implant 3D Guide** methodology creates for the Dentist, by the implant design, a personalized surgical guide that allows the implant-prosthetic surgery to be performed safely, efficiently and quickly in partially and totally edentulous patients.

The level of accuracy achieved enables the Dentist to obtain extremely precise surgical guidance, ensuring a result that is perfectly in line with software planning.

With **Implant 3D Guide**, all clinical decisions can be taken during planning before surgery is performed.

The minimum invasive intervention combined with extreme precision make **Implant 3D Guide** the most advanced and safe guided surgery system.

This operational clinical protocol is intended to indicate the basic steps for the preparation, planning and execution of the clinical case.



IMPLANT 3D

1

DENTAL IMPRESSION AND PLASTER MODELS

2

The impressions made in the dental practice can be taken with standard trays or with dental impression trays.

The authorized lab uses the precision imprint to make the Master model in plaster eliminating the prominent undercuts up to the folds.

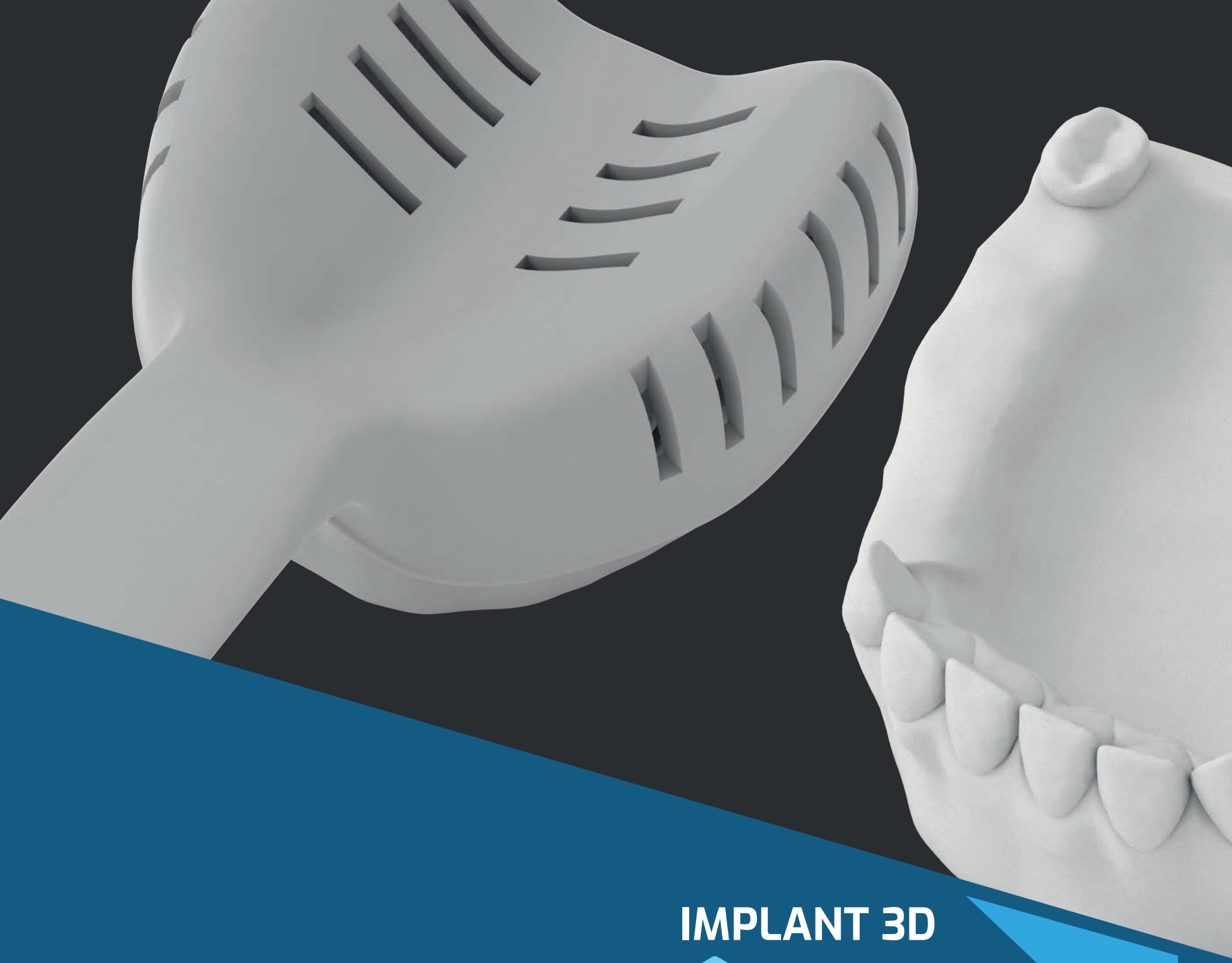
This model must be duplicated in order to obtain one without undercuts.

In case of previous extractions, undercuts should be managed considering that the surgical guide will rest on the mucous membrane.

The digital process involves the use of an intraoral scanner to improve accuracy and patient comfort.

The digital impression can only be taken in partially edentulous patients, with the aim of achieving a consistent oral model of soft tissues and dental surfaces.

The Universal Stent should not be used during intraoral image acquisition.



IMPLANT 3D

2

CREATION OF RADIOGRAPHIC TEMPLATE

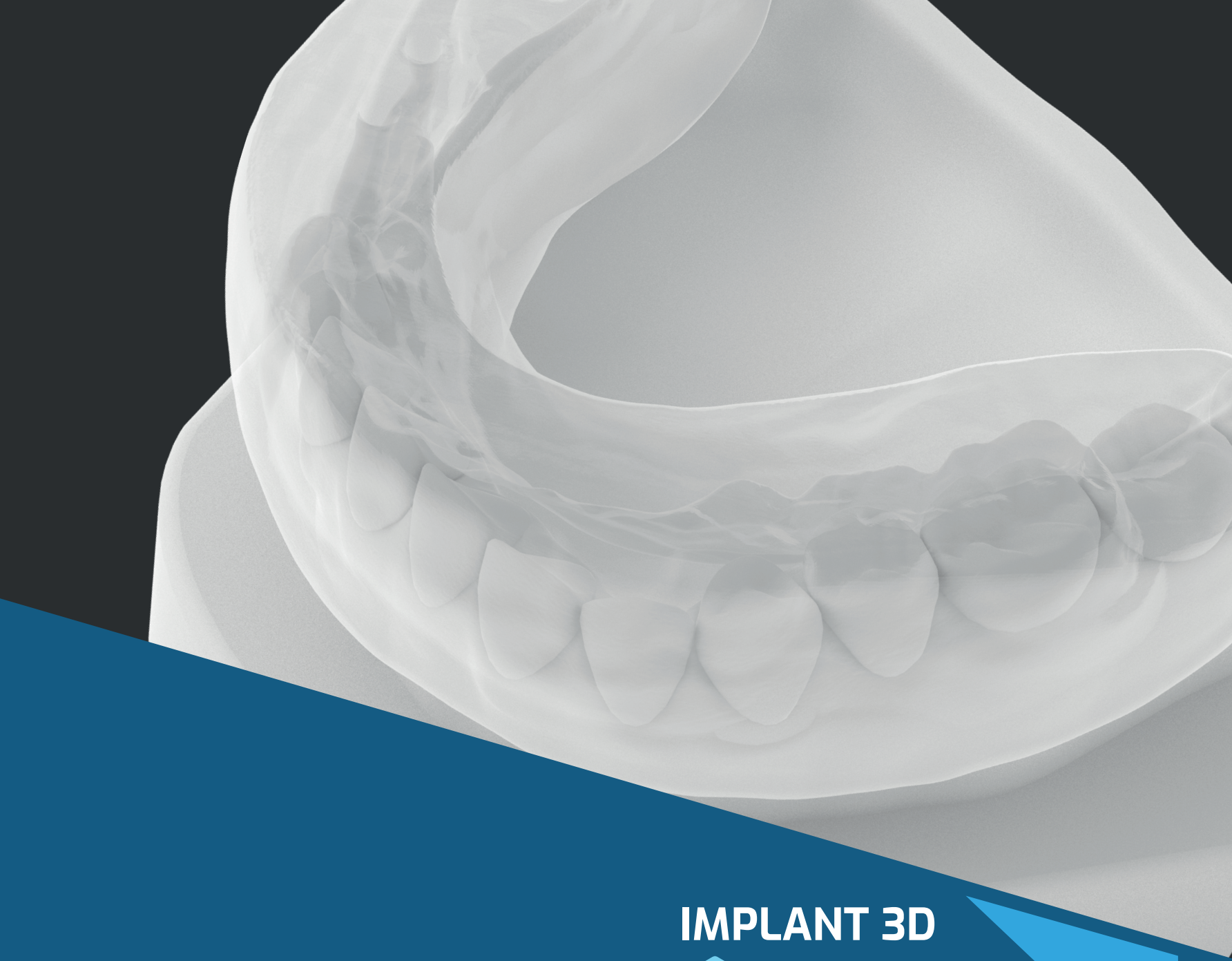
3

The radiographic template is mandatory in totally or extensive edentulous patients.

The radiographic template must absolutely meet the design specifications established by the technologist during the qualification course and also comply with the specifications of the implementation checklist (see Annex B).

The radiographic template is not required for the cases covered by the **Implant 3D Guide** Easy protocol (see Annex C).

When the patient has a suitable mobile prosthesis or to be rebased, double scanning is carried out and the radiographic template is not necessary.



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3

UNIVERSAL STENT 3.0

4

The Universal Stent is a tool that serves to optimize software coupling and is to be considered disposable.

Verification of the correct positioning of the radiographic template.

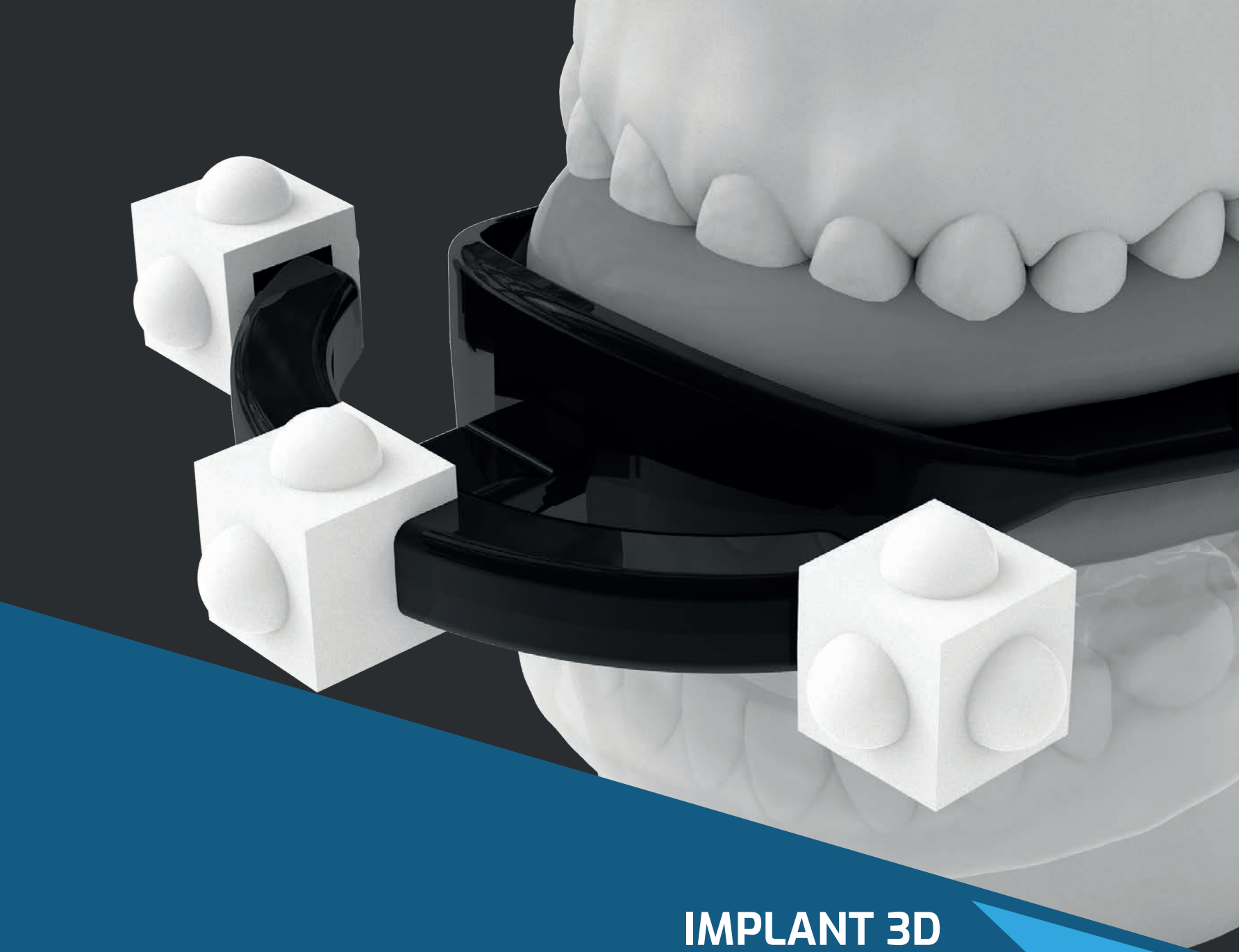
If teeth are used for support, use the appropriate control openings, if resting on mucous membrane, make sure they have the widest extension possible.

The template assembling technique consists in coupling the radiographic template and the Universal Stent to the recording material that must be radio-transparent (e.g. polyether).

In the event that it is necessary to acquire images of both dental arches, two distinct radiographic templates will be assembled simultaneously with the Universal Stent.

It is also possible to remove the mouth section and connect the arch containing the indicators to the radiographic template.

The cases that fall within the **Implant 3D Guide** Easy protocol, the Universal Stent is placed with the recording material directly on the arch considered.



IMPLANT 3D

4

OPTICAL SCANS

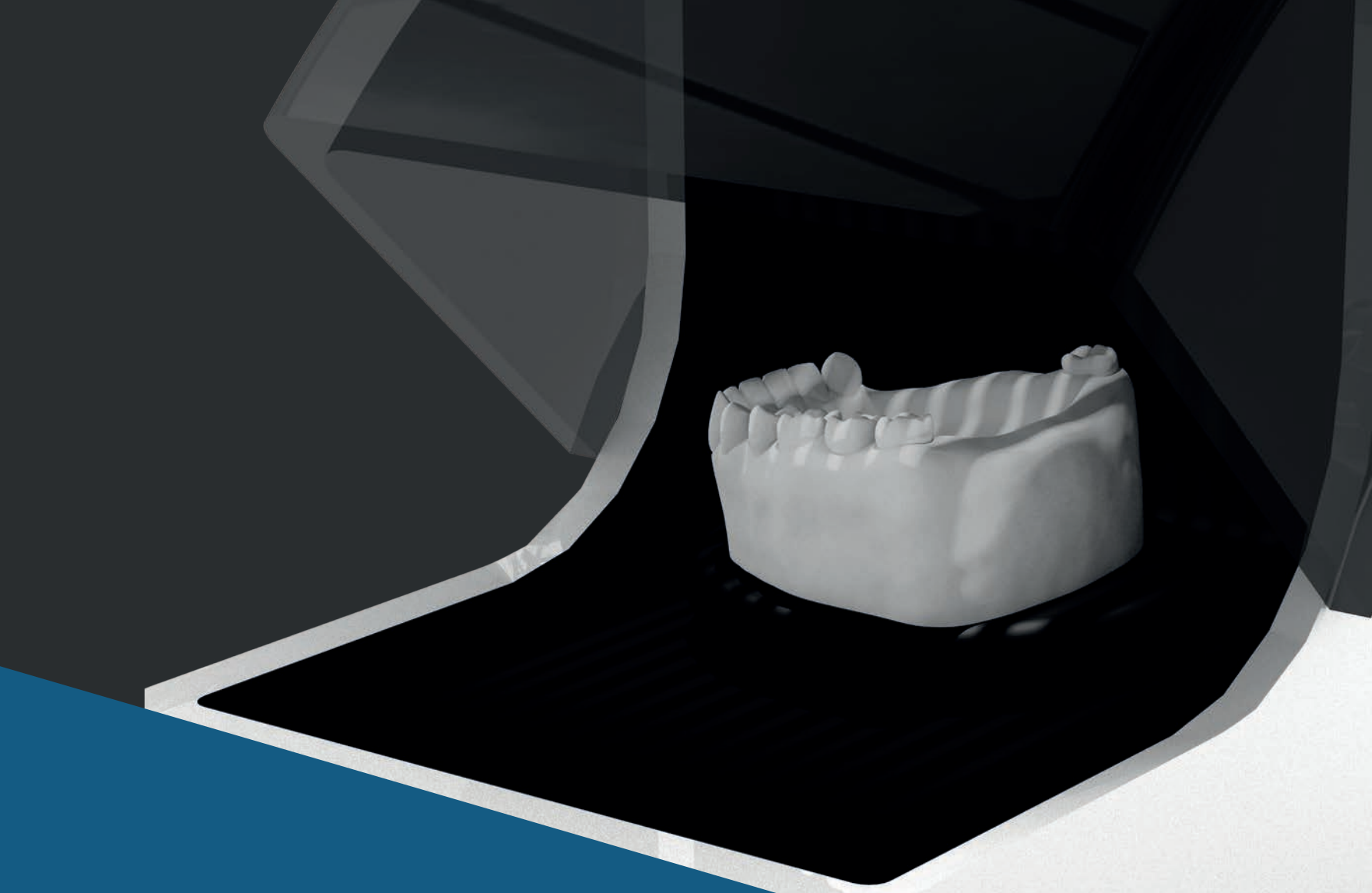
5

If the radiographic template has been made, the following scans must be performed.

- Plaster model with radiographic template and Universal Stent positioned
- Only plaster model, maintaining the same coordinate system

For cases that fall within the **Implant 3D Guide** Easy protocol, simply scan the plaster model with the Universal Stent and scan the plaster model only.

If the dental practice is equipped with an intraoral scanner, the STL file of the affected arch is sufficient.



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5

CT SCAN

6

The patient should be sent to the radiology center equipped with the Universal Stent already fitted with the recording material, accompanied by an appropriate prescription containing instructions for the radiologist (see Annex A).

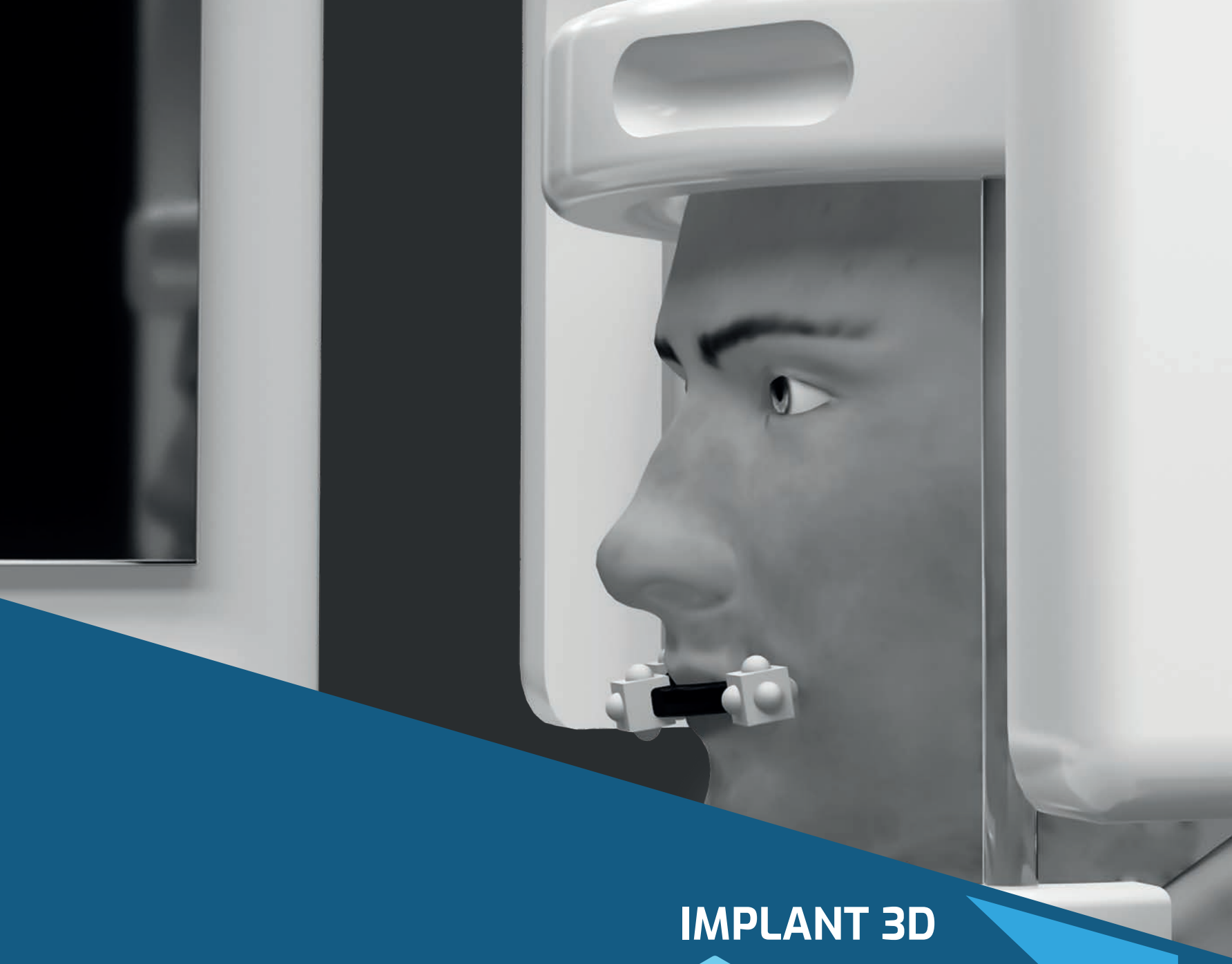
It is possible to prescribe the request for CT scan or cone beam examination in the arch (arches) required, provided that the radio-opaque indicators on the Universal Stent are also acquired.

In the cases covered by the double scan protocol, the following CT scans are mandatory:

1st Scan – Patient with prosthesis and Universal Stent

2nd Scan – Prosthesis with Universal Stent

NB: The double scan protocol can also be done by putting radiopaque indicators directly on the flanges, but this will dramatically reduce the accuracy of software coupling.



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6

MATCHING

7

After importing the Dicom of the CT scan into the software, before performing implant planning, you must enter the STL according to the type of protocol.

Protocol with plaster model

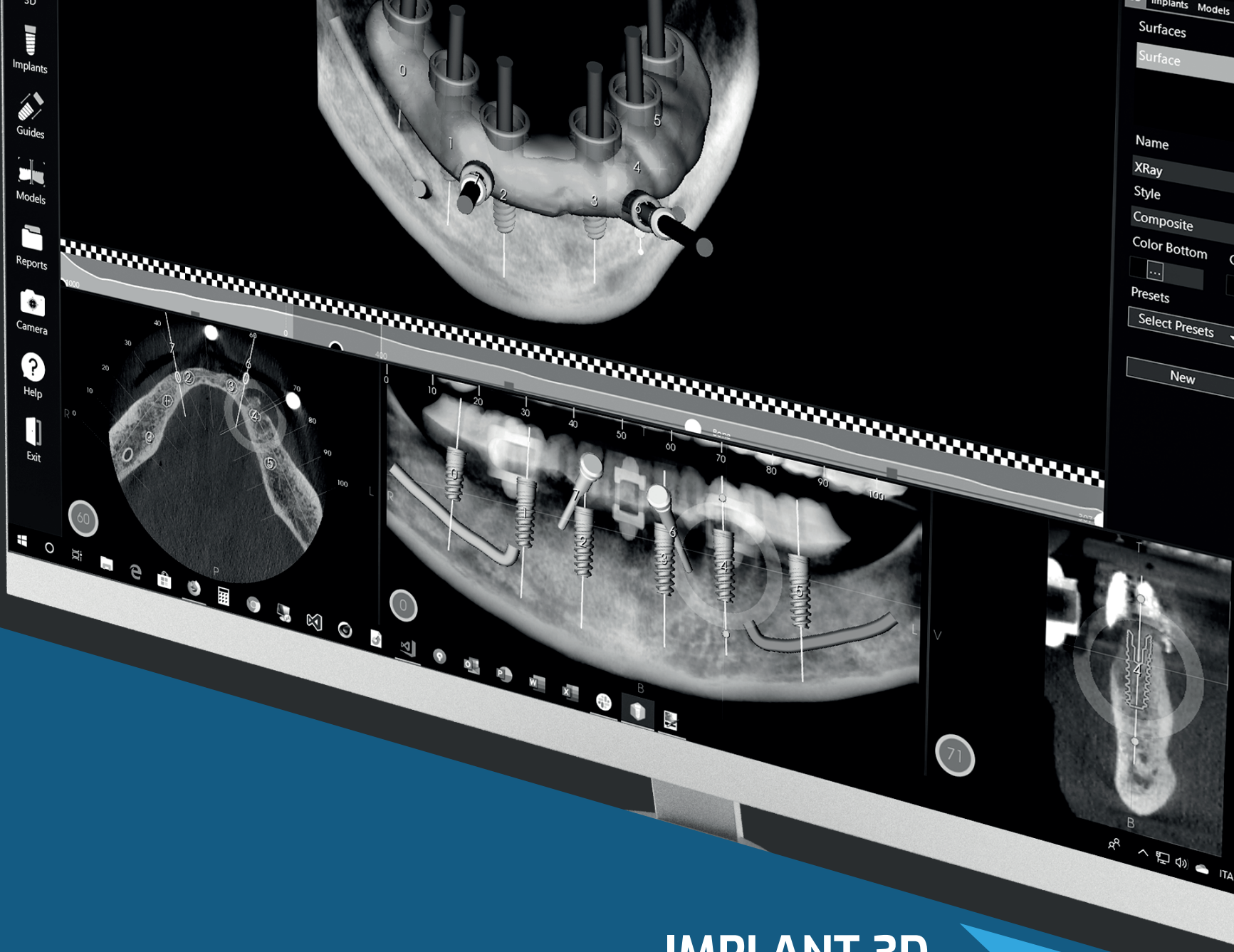
- CT - STL (Universal Stent + template + radiographic)

Digital protocol

- CT – STL arch (in case of intraoral scanning or cases covered by **Implant 3D Guide** Easy protocol)

Double scan protocol

- CT (patient + prosthesis + Universal Stent) – CT (prosthesis + Universal Stent)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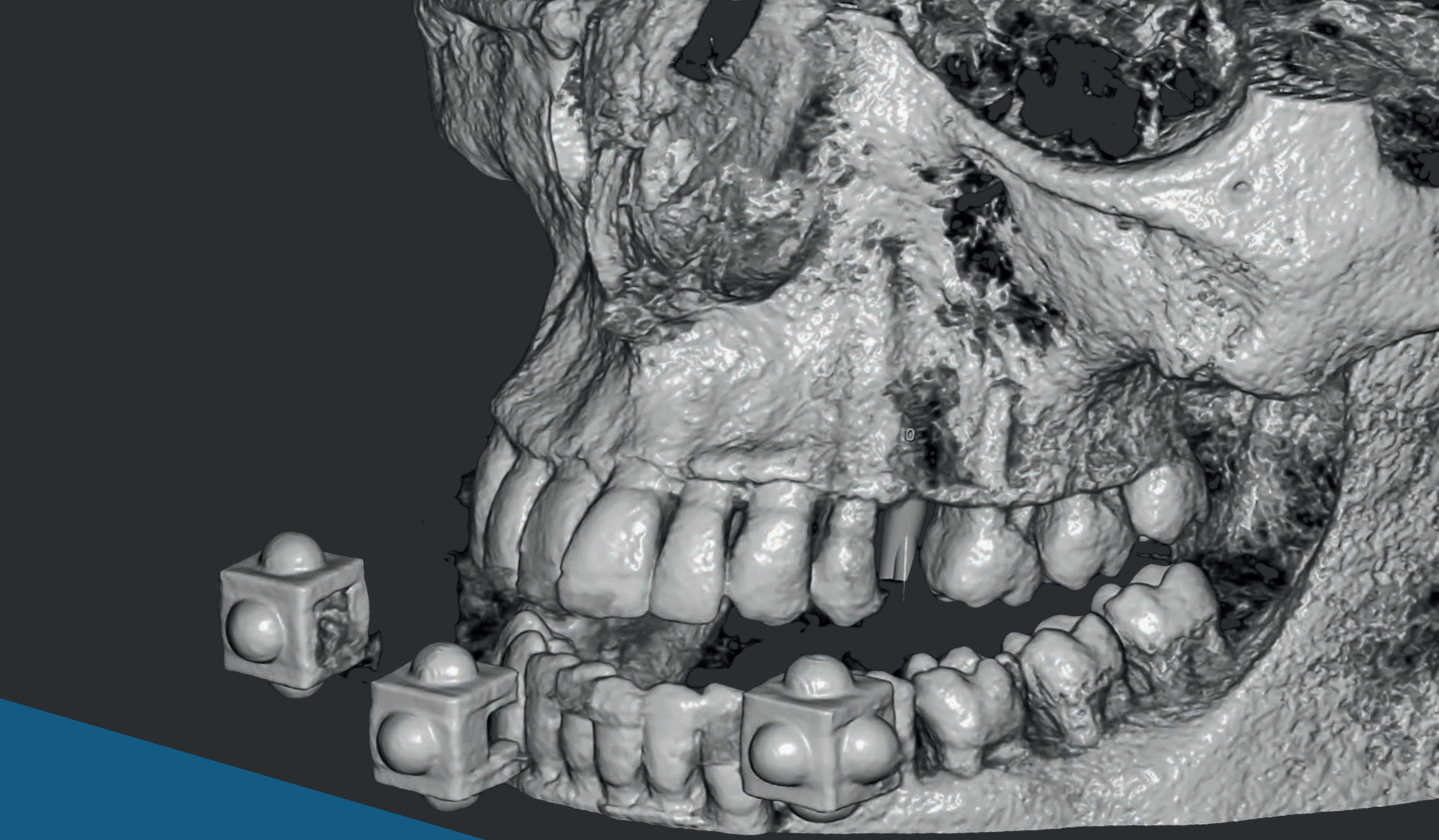
7

SOFTWARE DESIGN

8

After pairing, virtual planning is performed with Implant 3D software or similar.

When the design is completed, you can proceed with the creation of the surgical guide.



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8

CREATION OF THE SURGICAL GUIDE

9

Once the implant planning has been completed, we move on to the creation of the surgical template for implant-prosthetic intervention in guided surgery.

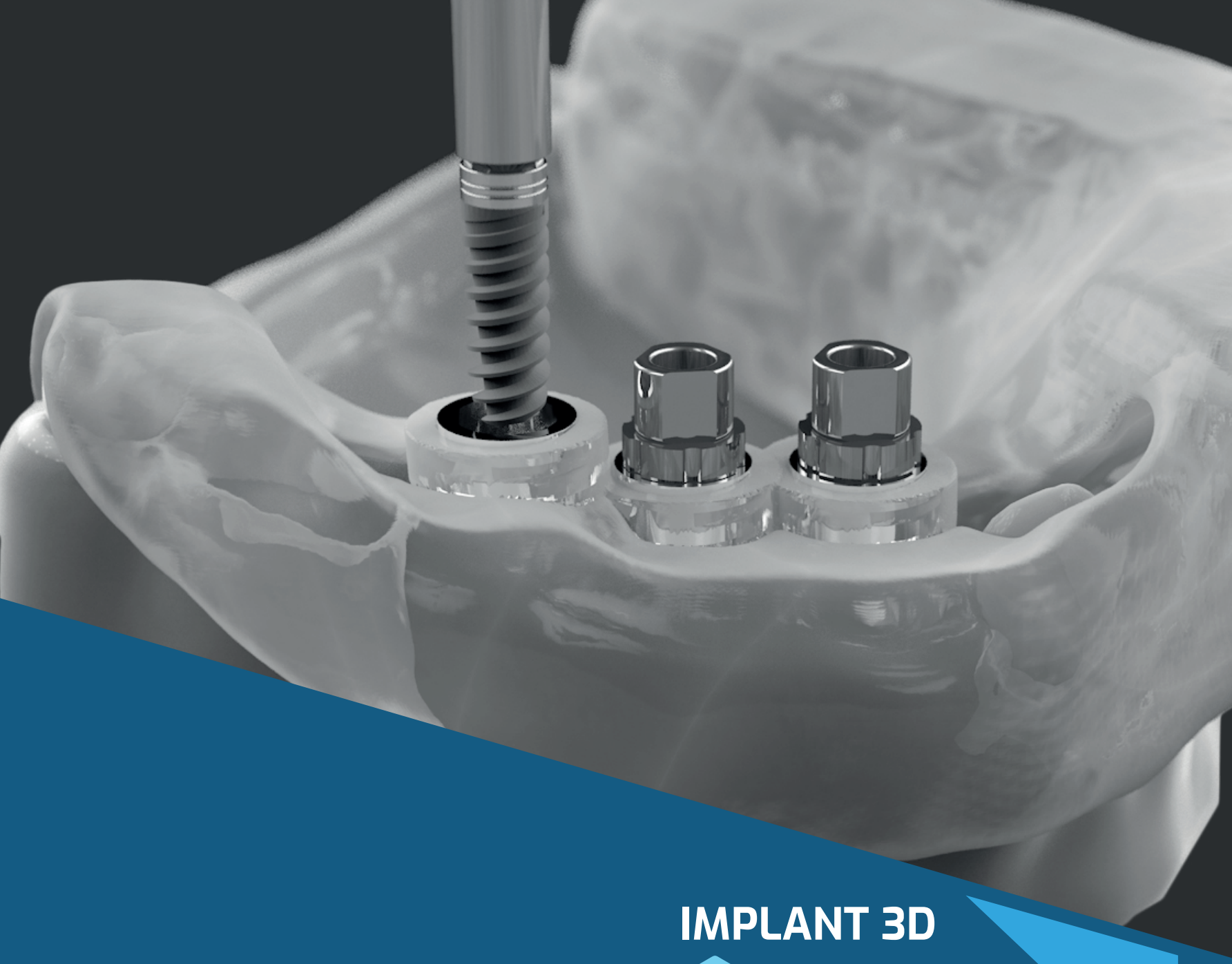
IMPLANT 3D

9

IMPLANT SURGERY

10

- Anesthesia
- Mucotomy and Complete removal of the fibrous tissue overgrowth
- Crestal preparer
- Dental drill steps
- Implant fitting
- Removal of conveyor and fastening systems



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10

PROSTHETIC PHASE

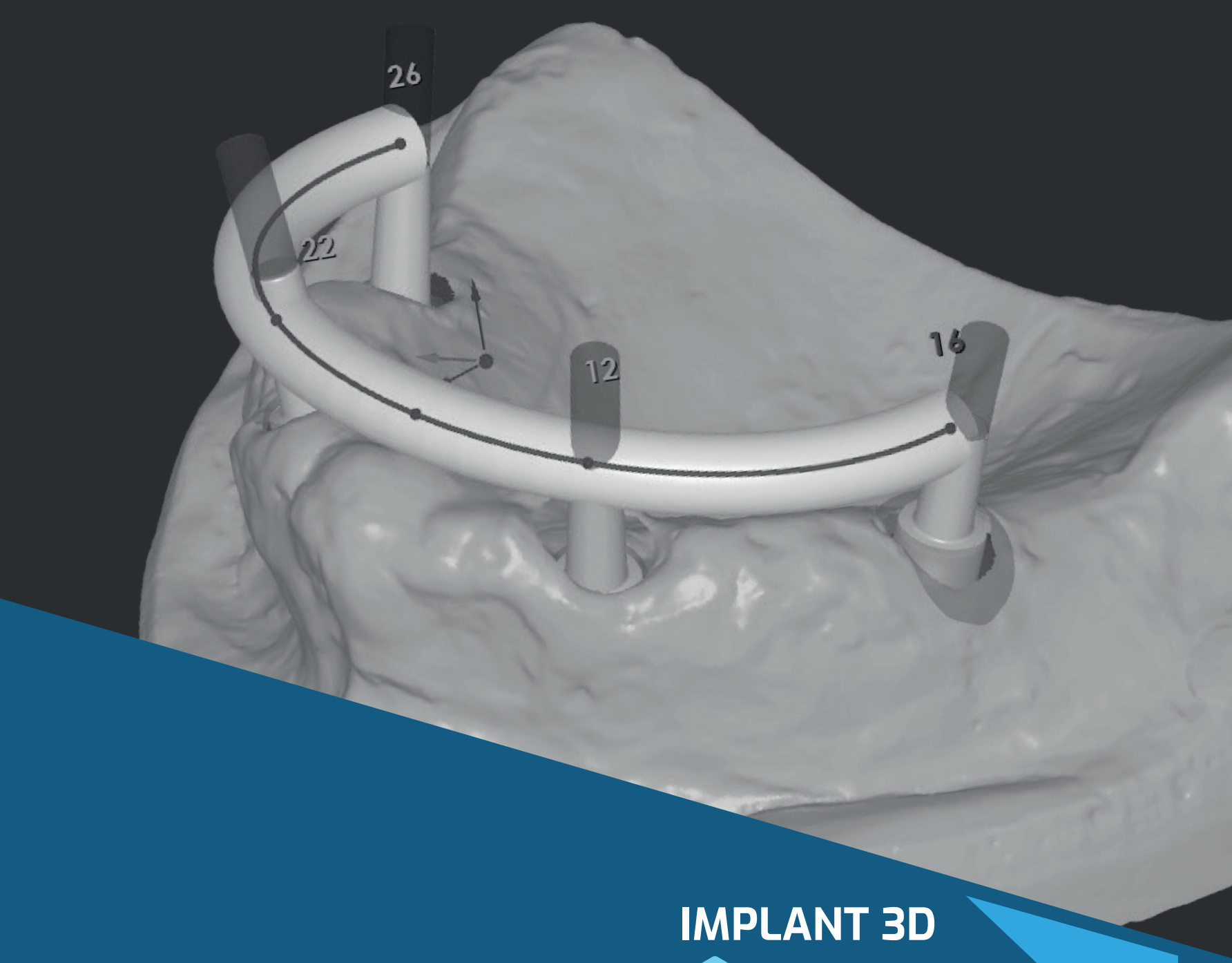
11

The choice of performing an immediate load is at the discretion of the dentist performing the surgery.

Certainly, the **Implant 3D Guide** technique provides the possibility of making a pre-constructed temporary prosthesis, and thus facilitates this therapeutic choice, where clinical conditions and literature data make it viable.

NB: The guide should not be sterilized with "hot" systems that can cause deformation. The guide should then be washed with sterile saline before testing it in the patient's oral cavity.

NB: The prosthetic model can be made simultaneously with the optical scans of the model so as to perform a guided prosthetic planning, where possible



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CT SCAN PROTOCOL

ANNEX A

Radiographic Guide and Universal Stent

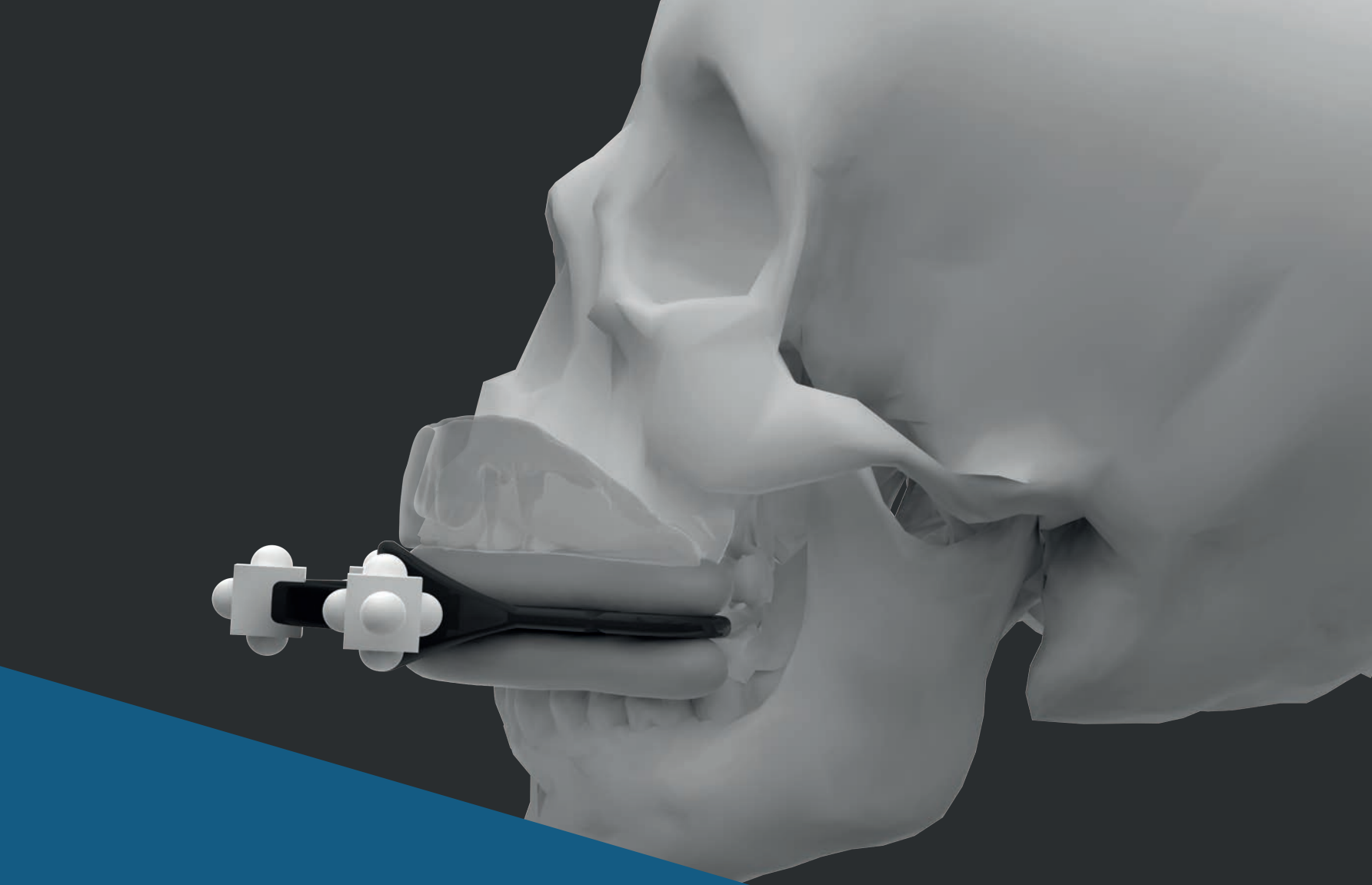
Check the correct positioning of the radiographic guide and the Universal Stent and make sure that the radiographic guide is perfectly in contact with the teeth surface and with the mucous membrane.

Patient Positioning

Maxilla: Scan the entire maxillary arch and the sinus area.
Make sure that all Universal Stent markers are visible in the scan.

Mandible: Scan the entire mandibular arch and the canal area.
Make sure that all Universal Stent markers are visible in the scan.

Maxilla & Mandible: If the patient needs implant surgery on both arches, it is possible to perform a single scan. Scan the entire maxillary and mandibular arch including the regions of the maxillary sinuses and mandibular canals. Make sure that all Universal Stent markers are visible in the scan.



Scanning Parameters

Image size	from 512x512 to 800x800
Gantry Tilt	0.0° Mandatory
Distance between axes	from 0.25 to 1.00 mm
Image format	DICOM 3.0 multifile
Compression	None

IMPLANT 3D

A

PRODUCTION CHECK LIST
RADIOGRAPHIC GUIDE

ANNEX B

The aim of the production check list
is to indicate the steps that the authorized **Implant 3D Guide** dental lab should follow to make the radiographic guide.

The checklist must be compiled by the staff of the lab that makes the radiographic template, by checking the boxes, and must be signed and delivered to the requesting dentist together with each radiographic template produced in order to confirm the correct execution of the protocol.

The dentist must attach the card upon sending the material for the realization of the surgical guide.

1. The radiographic templates, in the total upper jaw prosthesis, must have the palate full. "Horseshoe" templates with reduced palates are not accepted.

2. For full templates, it is necessary to create a side reinforcement box in transparent acrylic resin to give greater flexural strength to the template.

3. The palatal vestibular and vestibule-lingual thickness in the front area should be at least 10 mm, and 15 mm in the rear quadrants. The palate of 3-4 mm.

4. In the full templates, the vestibular flanges must reach the folds, while in partial templates they must go beyond the tooth neck of dental elements (unloading the undercuts, where necessary).

5. Barium must be in the right amount: if you mix directly Barium Sulphate 20% + 80% transparent acrylic resin. You can also use Vivotac powder 50% + 50% of transparent acrylic resin.

6. Do not use coloured acrylic resins; the allowed colours are transparent and white, of the Barium.

7. The templates should be made with class III plaster.

8. Remove the strongest undercuts from the Master Model using exclusively wax.

9. Make a duplicate model using the Master Model with undercuts already operated.

PROTOCOL RESTRICTIONS IMPLANT 3D GUIDE EASY

ANNEX C

YES

- Two contiguous implants
- Single tooth implant
- Two non-contiguous single tooth implants

NO

- Totally edentulous patients
- Extended partial edentulous patients
- Three or more contiguous implants

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C

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