



IPS Implants®

Scan protocol

Preprosthetic



IPS® – Individual Patient Solutions

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Preprosthetic

Basic information

This scan protocol describes how patient data must be prepared for virtual planning of an instant dental rehabilitation so that a product of the "Individual Patient Solutions" product family can be made.

Deviations from these instructions may mean that the clinical results will not match the planned results.

KLS Martin can process data from all standard CT scanners and use almost all storage media.

Should you have any queries, please do not hesitate to contact our **hotline +49 7463 838-222**.

Important:

Planning results are only ever as up-to-date as the clinical data records!
If the anatomical situation should change after scanning, the precision fit of the products can no longer be guaranteed.



Scan of the patient skull

- Patient scans must reflect the patient's current situation at the time of planned care and be precise (< 4 months).
- The slice thickness of scans should be between **0.5 - 1.25 mm**.
- The slice increment must be \leq slice thickness.
- The **axial layers** are required.
- In edentulous patients, the scan should be taken with an open bite. If the patient still has four or more of their own teeth – also in the form of a prosthesis/wax-up – the open bite can be dispensed with.
- Movements of the patient during the actual scanning have to be avoided coercively.
- The patient orientation (right, left, anterior, posterior, superior, inferior) should be recorded in the scan and be correct.
- In the case of medical CT scans **no gantry tilt is allowed** (gantry tilt 0°).
- Make sure that there is no (foreign) radiopaque material in the patient's mouth during the scanning. Exceptions are situations in which existing dentures are already present. (See option 2 on page 4)
- In case of a CBCT scan the patient has to be in upright position. The recording plane is perpendicular to the occlusion plane to minimize artefacts.
- The scan should include the orbital floors and condyles and should range below the mandible.
- It should be ensured that the patient details in the scan match those in IPS Gate® (name and date of birth).
- Save the entire scan incl. all sub-files in the Dicom format without integrating a viewing software.

Note:

If the bony situation does not allow the desired procedure, an additional CT scan of the donor region may be necessary (see scan protocol 91-350-69-xx).

The conventional dental implantology is a well-established possibility for dental rehabilitation if the individual bone and soft tissue are sufficient. But conventional methods are limited in case of larger tissue loss or replacement.

Right here the new possibilities of IPS Implants® Preprosthetic are an excellent enlargement to achieve instant functionally stable dental rehabilitation independantly from the jaw region.

In addition to the mandatory scan of the patient's skull, one of the four procedures is required:

Option 1 and recommendation

A pre-op DICOM scan with complete dentition can also be used to record the dental situation.

Option 2

- Scan the existing prosthesis orally in the patient as a DICOM file using appropriate markers (small screws, radiopaque acrylic/titanium reference balls or composite mixed with barium sulphate on the prosthesis). If no prosthesis is available, a barium sulphate template (radiopaque “standard teeth” in occlusion) can be scanned orally in the patient as a DICOM file.

When scanning, care must be taken to ensure that the prosthesis or template does not slip. The requirements on page 3 apply.

In addition to the patient scan, a scan of the prosthesis or template is required as an STL or DICOM file.

Option 3

(only applicable for residual dentition or mucosa images of the alveolar ridge or palate)

- Wax-up (wax-embedded plastic teeth on the plaster model) of the upper and lower jaw individually and in the target occlusion.

Save the wax-up as an STL or DICOM file using a scanner.

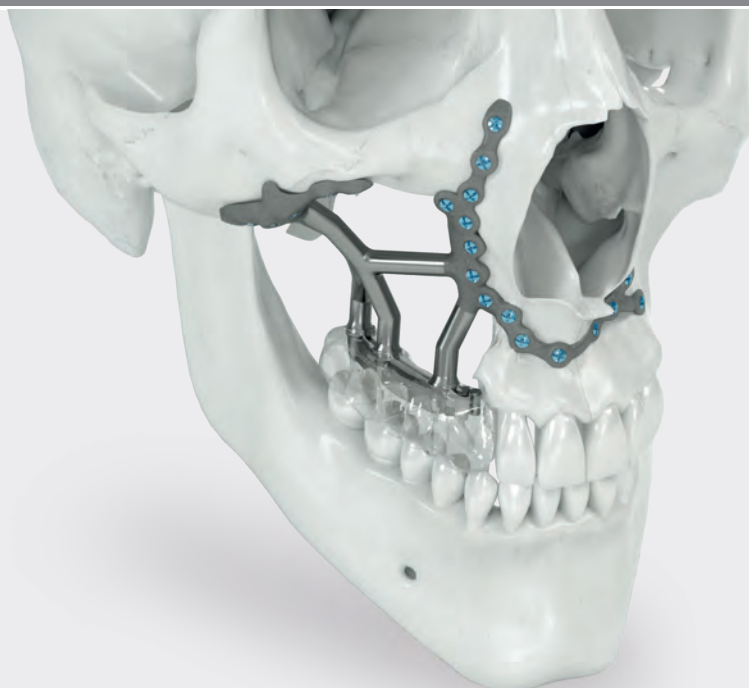
Option 4

(only applicable for residual dentition or mucosa images of the alveolar ridge or palate)

- Create an intra-oral scan of the upper and lower jaw with the existing denture individually and in the target occlusion and save it as an STL file.

As an alternative to the intra-oral scan, save a plaster impression as an STL or DICOM file.

In each case, do not perform any post-processing or smoothing of the mucosa.

**Note:**

If no pre-op DICOM scan, scan template, prosthesis or wax-up is available, it is checked whether digital sample teeth from KLS Martin can be used for planning.

If the patient has already received a soft tissue graft, it is recommended to make a squeeze bite to evaluate the compression of the grafted tissue.

Save the plaster models of the upper and lower jaw as an STL or DICOM file.

STL-Scan-Service

If there is no STL-scanner available in your clinic, you can send the plaster cast models to KLS Martin for digitalization:

KLS Martin SE & Co. KG
IPS Engineering
Kolbinger Str. 10
78570 Mühlheim a. d. Donau
Deutschland

Please keep in mind the precise trim of the backrest and side surfaces of both models to each other for an accurate alignment of the planned occlusion by the surfaces. Occlusion markings at the incisor and premolar region provide additional orientation.

The IPS® product range



IPS Implants® Preprosthetic

IPS Implants® Preprosthetic convinces by summarizing the planning of complex anatomical factors towards a functionally stable and patient individual functionalized solution within an efficient process for dental rehabilitation.

We supply IPS Gate®, a platform that guides surgeons and users reliably and efficiently through the process of inquiring about, planning, and completing patient-specific products. The intuitive concept offers the user maximum mobility, flexibility, and functionality. With the HTTPS standard IPS Gate® guarantees encrypted data transmission, which is additionally certified by the TÜV Süd seal.



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IPS Gate®

The web-based platform and app guide surgeons and users reliably and efficiently through the process of inquiring about, planning, and completing custom-made products. With the HTTPS standard IPS Gate® guarantees encrypted data transmission, which is additionally certified by the TÜV Süd seal.



IPS Implants®

Custom-made implants, planning aids, and anatomical models are made from various materials using state-of-the-art fabrication technologies. Thanks to computer-based planning and functionalized custom-made implants, preoperative planning can be implemented in surgery with unprecedented precision.



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