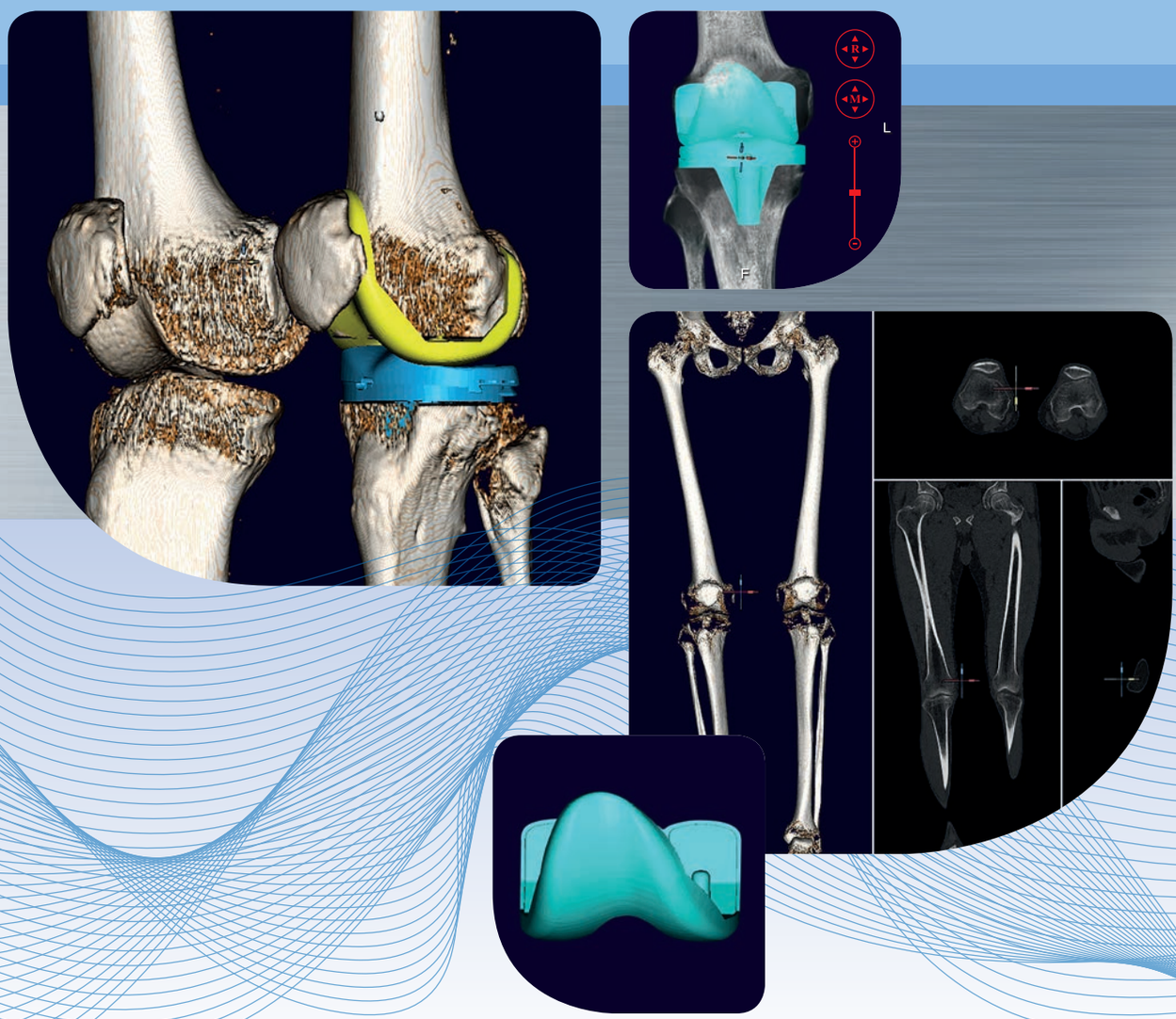
KNEE 3D

Automatic measurements · Implants
Osteotomies · Bone contact visualization



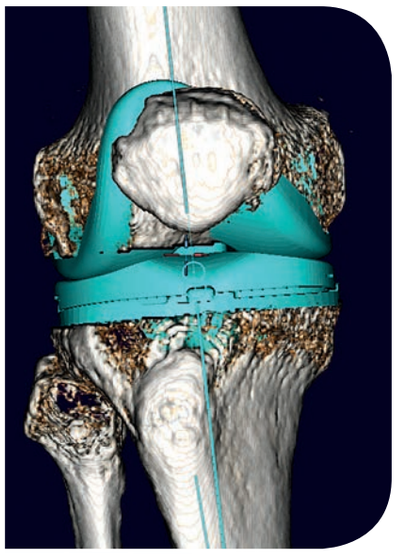
mediCAD®

The Orthopedic Solution

www.mediCAD.eu

Your high-performance tool for knee surgery

mediCAD Knee® 3D opens entirely new opportunities in anatomical assessment, planning and measurements of the knee, resulting in optimal, audit-compliant surgery preparation.
A modern, intuitive user interface that takes you straight to your objective combined with the classic, convenient connection to an existing PAC system at your hospital are just two of the many features that make **mediCAD Knee® 3D** an indispensable tool for your day-to-day work.



The following are some of the upgraded features to look forward to:

- Import assistant/Interactive help
- Anatomical 3D and 2D view
- Segmentation of the 3D object and automatic determination of various landmarks
- Simple analysis of the current pathological situation
- Precise, simple and automatic measurement processes
  (e.g. femoral/tibial torsion, slope, condylar offset, etc.)
- Simple selection and positioning of implants
- Carrying out corrective osteotomies
- Detailed implant visualization with 3D shapes
- Distance and bone contact visualization
- Transparent view for better visibility of the planned position
- Individual prosthetics
- Stitching of CT images
- Digital documentation
- 3D print of the bone/body
- OP viewer/Thieme eRef integration

In addition, **mediCAD Knee® 3D** offers the usual integration into our existing PACS partners' systems. **mediCAD Knee® 3D** was developed in close collaboration with specialists in the field of knee surgery. Constant development and improvement is the core mission of our company.

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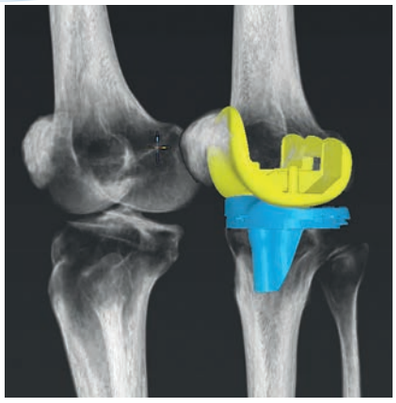
Planning assistance and quality assurance



Greetings,

As quality consciousness continues to rise and well informed patients demand more and more from clinics and medical practices, we are committed to helping you meet these demands by offering the highest quality, most advanced products in professional, digital preparation for surgery. Digital images are the future, and competent surgical planning is the basis for successful, efficient endoprosthetic care. With the new **mediCAD Knee® 3D** software, we offer you a highly promising product to carry out preoperative planning of joint replacement, using a high-resolution three-dimensional CT image. This means accurate positioning of the most suitable implant dimensions. With **mediCAD Knee® 3D**, operating time can be decreased, as certain decisions that you would have previously made during surgery can now be made in advance in the preoperative phase. Rehabilitation can also be accelerated through precise geometric restoration of the knee joint. Complications can be reduced since you can view the third level during 3D planning. Challenges that occur intra-operatively can now be resolved prior to the operation already.

Scientific tasks should be simpler, faster, systematically supported and substantiated by up-to-date images that do not take a lot of time to prepare. Everyday consultation in your clinic should be more accessible, transparent and should offer easy-to-understand quality improvements and assurances. With **mediCAD Knee® 3D**, scientific work can be supported and documented more easily, more quickly and without a large investment of time. More clarity and transparency can be achieved in your daily meeting and coordination routine at your hospital, resulting in more traceable quality and quality assurance. You will find in our user-reviews that the doctors we work with are extremely impressed by our intuitive product concept, which is very simple to use. They also greatly appreciate the opportunity to take advantage of our implant database, which is updated monthly, and our modern, digital product catalog for implant care. We know that you will be too! You can arrange a free, non-binding demonstration of our system. We look forward to hearing from you soon!

With kind regards,
mediCAD Hectec GmbH

We would love to present the solution to you. Our sales team is happy to help and is available to answer any questions you may have.

Tel.: +49 871 330 203-0
Email: sales@mediCAD.eu

INFORMATION

Our systems are developed with doctors for doctors, which means the following for you and your patients:

Made in Germany

- mediCAD® is the world's most widely used planning program on the market
- All known planning methods are taken into account
- A modular design with powerful add-on modules
- Easy and intuitive operation
- All processes are documented in compliance with the law
- Up to 90% time savings compared to conventional planning
- Cooperation with 130 international implant manufacturers
- mediCAD® is certified according to the 93/42/EEC Directive and EN ISO 13485 and is approved as a medical product
- 510(k) approval for mediCAD was granted by the FDA (K140434)
- mediCAD® is constantly being developed with doctors for doctors
- Special functions and modules are constantly being developed and made available
- mediCAD® has been successfully used in the medical field for more than 20 years

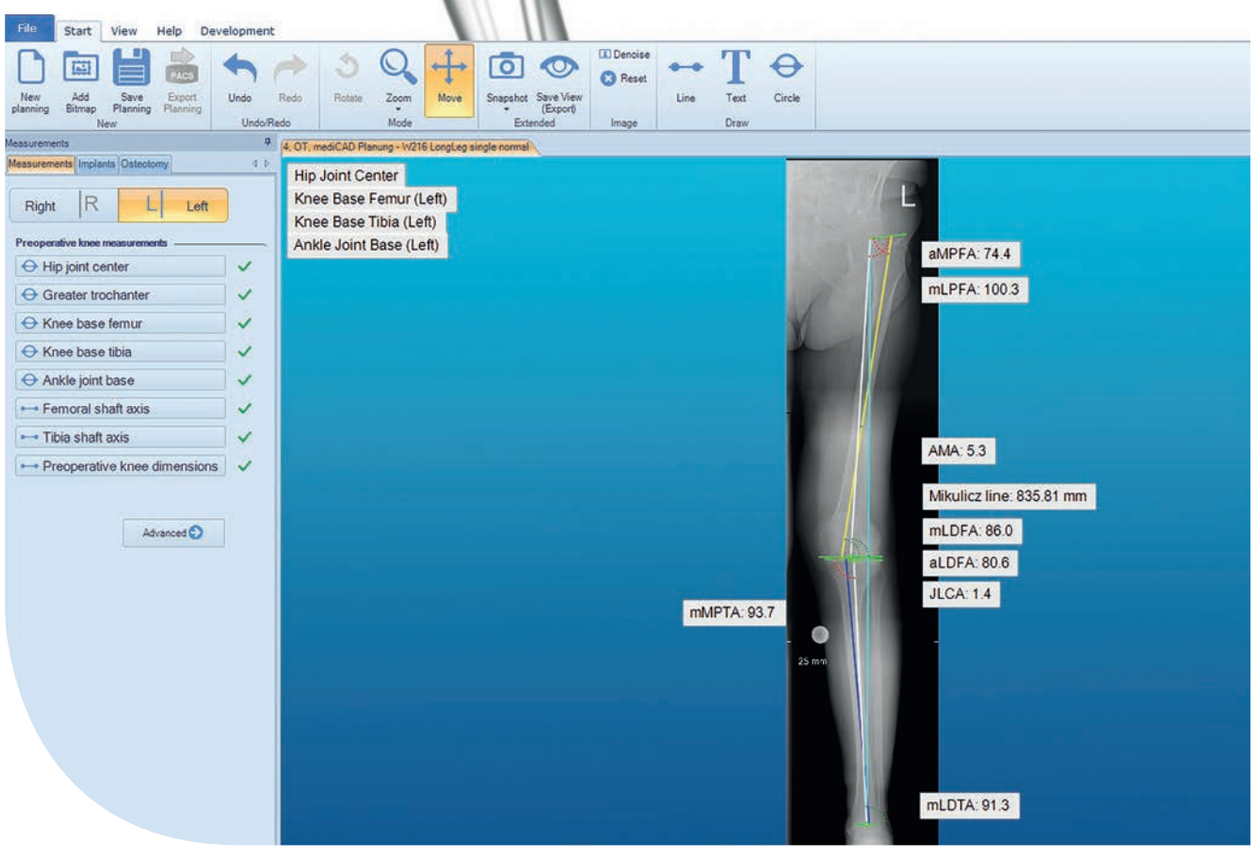
Import assistant / Interactive help

mediCAD Knee® 3D lets you select the storage location of your patient data or images with just one mouse click. You can load the images as you usually would from the PAC system via our new mediCAD® interface Query Client®. You can also call up any previously stored plans and load them immediately into the work area for further processing.

After selecting the respective storage location, all the available patient data that is located in the selected directory and subdirectory is displayed in the work area of **mediCAD Knee® 3D**.

During your surgical planning, you will be provided with an interactive help, which supports you with a schematic view and a list of all the required steps.

In addition, easy to understand informational texts and images are used to highlight the respective areas and functions in the application.
This means will you always have all the information you need in view, making your work easier and faster.

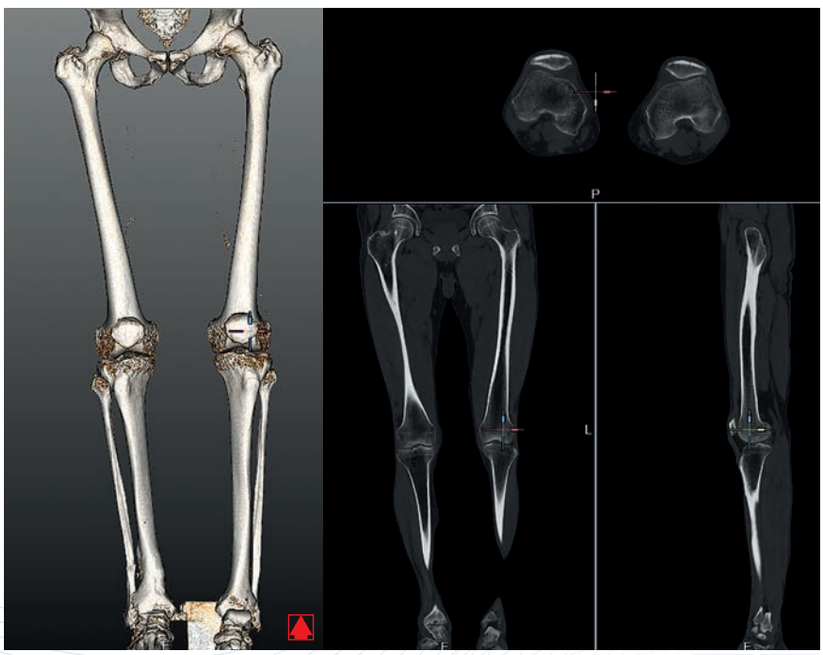


Anatomical
3D and 2D viewing

mediCAD Knee® 3D offers you a wide range of visualizations for anatomical 3D and 2D viewing. Each image and each plan is different, with a different objective, or requires a different view. Therefore, it is sometimes necessary to display the image data from a variety of perspectives.

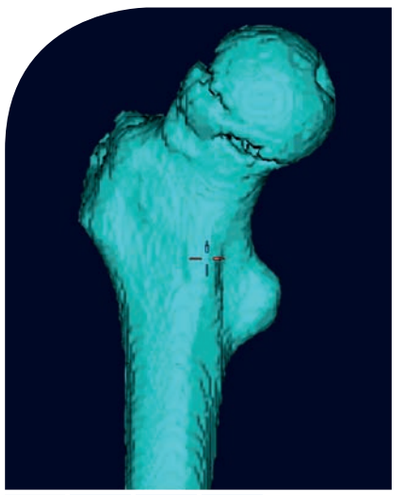
In addition to the 3D model, which can be viewed from all sides, you can display individual 2D layers ("slices") in the axial, sagittal or coronal plane. You can also display and view the 3D model from several different angles at the same time.

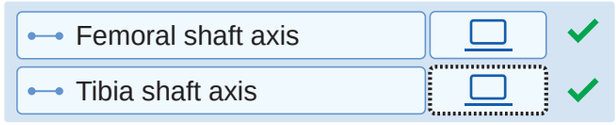
To better assess the pathological condition, simply switch to the anatomical view.



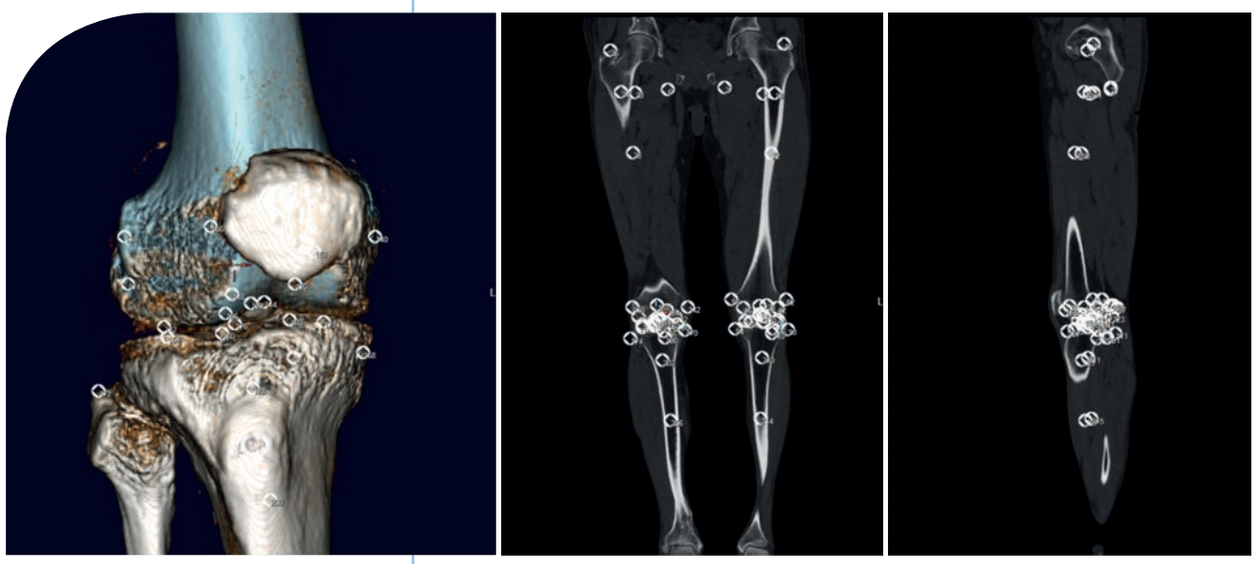
Automatic bone segmentation and osteotomies

When you load CT data, **mediCAD Knee® 3D** performs automatic segmentation. This is an important building block in preoperative planning for knee replacement surgery. Segmentation can be used to freely display certain areas of the bone in a high-resolution, three-dimensional image. For example, segmentation can be used to make the femur more visible to determine the pathological condition of the joint.





The automatic femur, tibia and pelvis segmentation enables detection of relevant landmarks and automation of measurements, ensuring increased accuracy in planning. The user can adapt and optimize the landmarks at any time to achieve even greater accuracy.



By setting an incision area, you can perform an osteotomy and move or rotate the resected areas as needed. All dimensions are adjusted automatically and thus reflect the new situation after the performed correction.

This allows you to simulate and test various scenarios to achieve the optimal result for the patient.

Simple and precise measurement methods

The **mediCAD Knee® 3D** module supports you in planning knee endoprosthesis. A wide range of traditional measurements can be carried out and recorded:

- Precise determination of preoperative and corrected knee measurements (mLPFA, JLCA, mLDFA, mMPTA, mLDTA, aMPFA, aLDFA, AMA, FSA-mTA, mFA-mTA, Mikulicz line)
- Tibial torsion
- Femoral torsion
- Posterior tibial slope
- Condylar offset

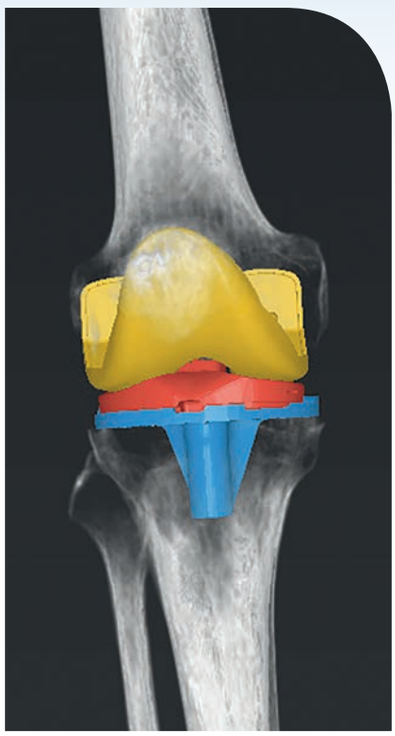
The measurements are not only displayed directly in the 3D model but also recorded in a structured list of results.
Where possible, an evaluation is carried out based on the standard range and its compliance or any lower/upper deviations then displayed in color.

In this way, **mediCAD Knee® 3D** helps you save a great deal of your previously required work time. This lets you spend much more time advising your patient and time preparing for the upcoming operation.

Results

Delete all | Export

Corrected Knee Dimension	
Corrected Knee Dimension (Left)	
mLPFA	94,54°
JLCA	7,65°
mLDFA	90°
mMPTA	90°
mLDTA	91,16°
aMPFA	80,55°
aLDFA	85,09°
AMA	4,91°
FSA-mTA (medial)	4,91°
mFA-mTA	0°
Mikulicz line	838,74 mm
Preoperative Knee Dimension	
Preoperative Knee Dimension (Left)	
mLPFA	94,54°
JLCA	1,37°
mLDFA	85,88°
mMPTA	93,52°
mLDTA	91,16°
aMPFA	80,55°
aLDFA	80,97°
AMA	4,91°
FSA-mTA (medial)	11,18°
mFA-mTA (medial)	6,28°
Mikulicz line	834,77mm

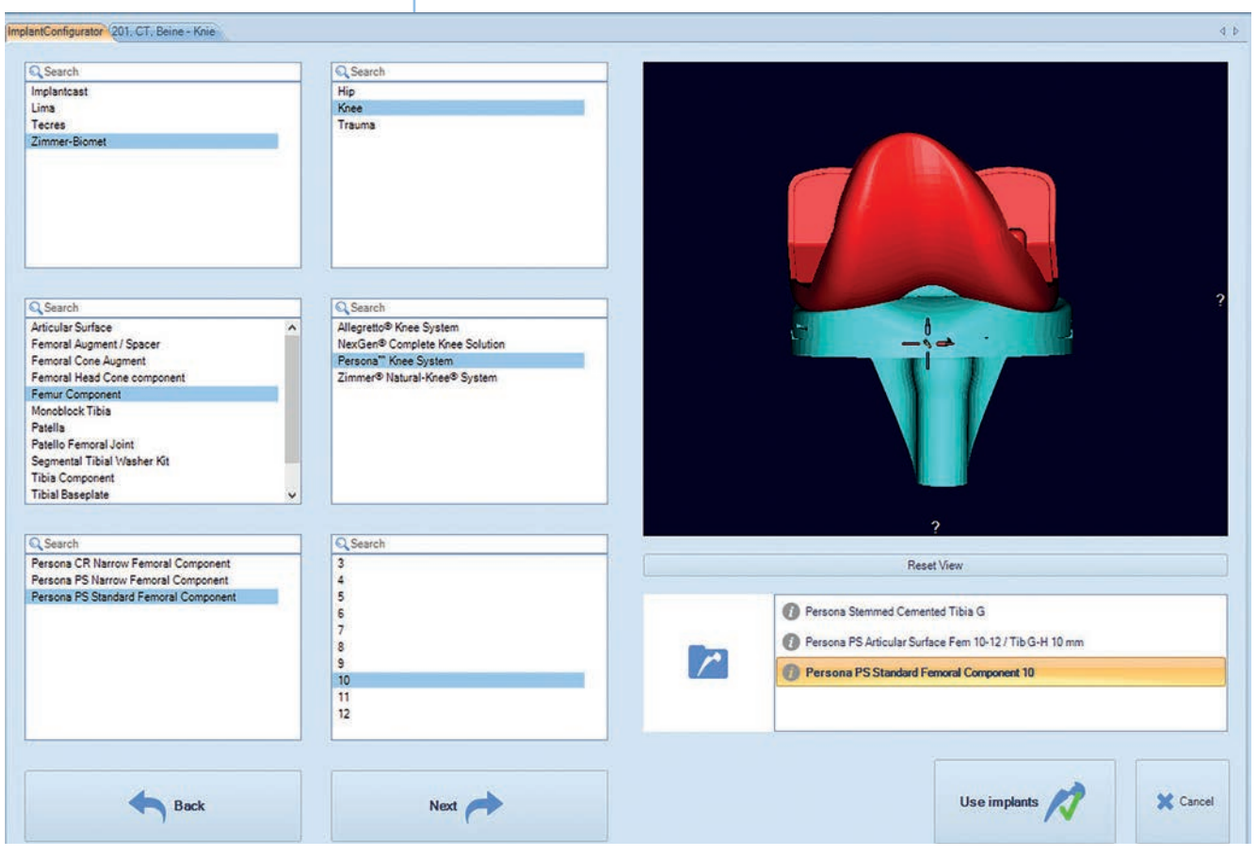


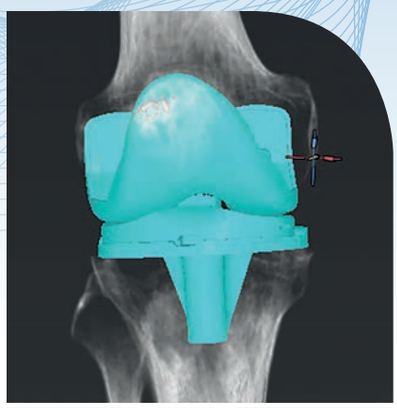
Implants

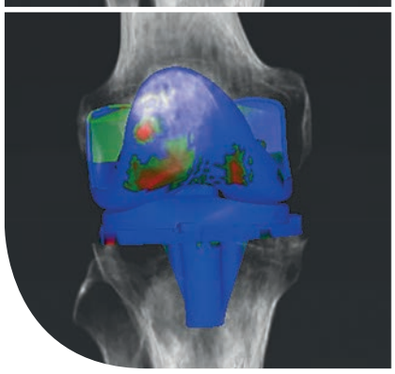
Thanks to the convenient options provided by **mediCAD Knee® 3D**, the individual implant components can be assembled using the implant configurator and placed into the 3D model (the patient's CT images). In addition to this, the implants can be adjusted, rotated, moved or changed to another implant type as a group or individually.
The implant configurator lets you select various knee implants. You can filter your implants by manufacturer, type, material and size, or even list your personal favorites or those used at the hospital.

The implants you have selected and used will be compiled in a list of results with all relevant parameters and can then be used for further planning and preoperative preparation.

More than 15 years of collaboration with a large number of international implant manufacturers means that **mediCAD Knee® 3D** includes the latest expertise. It also includes an implant database that is supplemented and updated monthly.





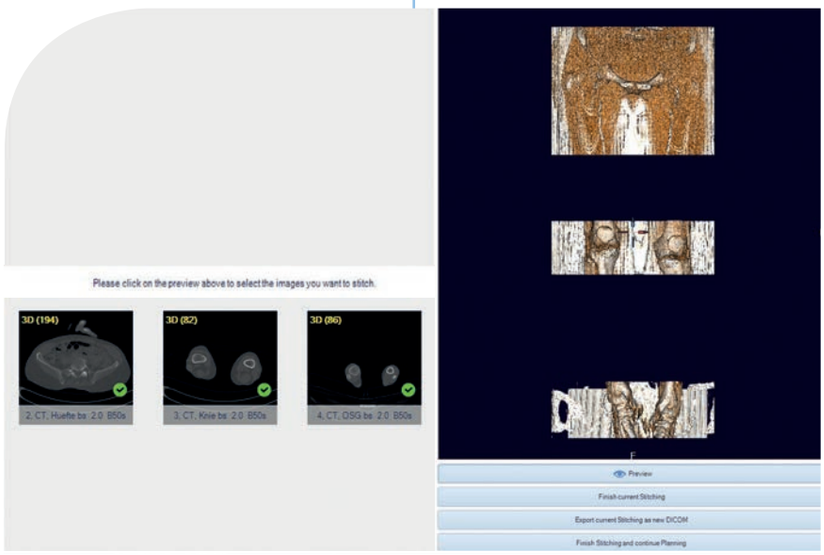


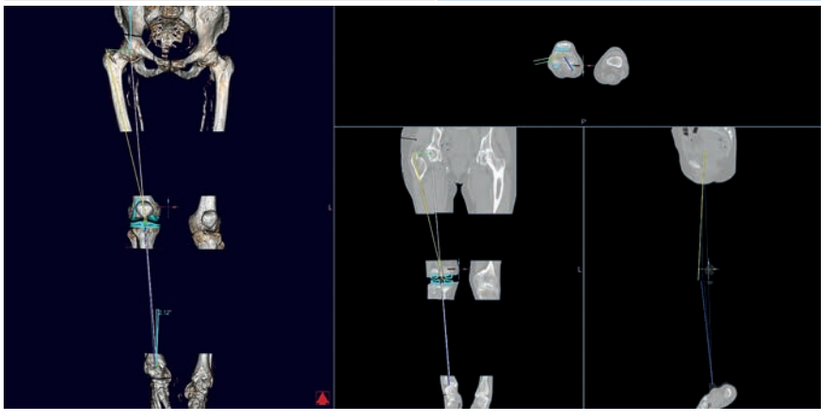
Transparent view and implant-bone contact visualization

Each image and each plan is different, with a different objective, or with different viewing requirements. You can use the transparent view to better observe the implants used in their respective positions.

It is often necessary to visually determine the condition of the bone at the planned implant position. This can be done with the Hounsfield units of the bone.

Both high and low density values can be observed at the planned implant site. High or lower primary stability can therefore be assumed when the implants are inserted. The distance visualization of the Hounsfield units can be used to create concepts for preoperative planning to determine the correct preparation technique and the consecutive prosthetic solution.





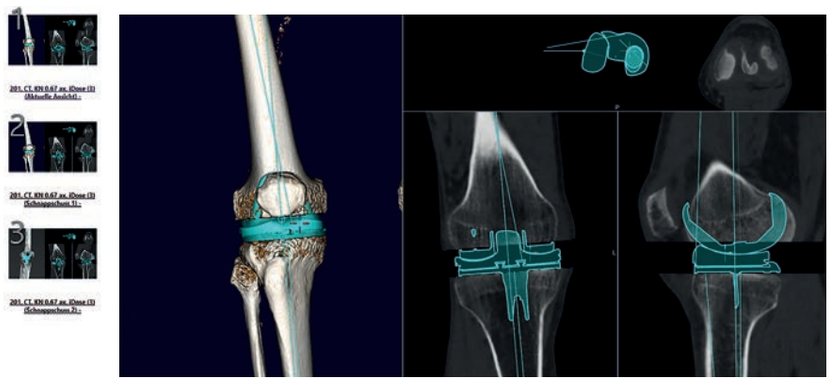
Stitching with individual sectional images

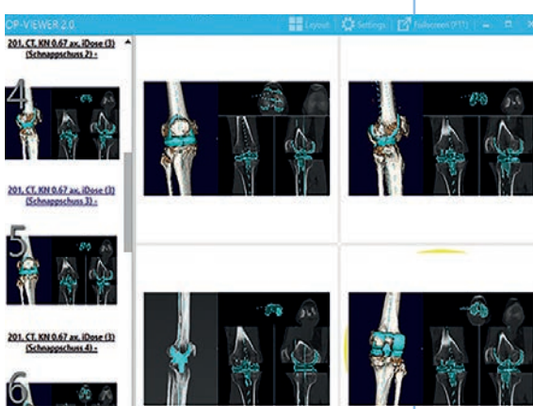
Combining individual sectional images (hip joint, knee centers and talus) to a contiguous object lets you measure the entire leg in various dimensions. This is possible even if only partial sections need to be recorded during imaging.

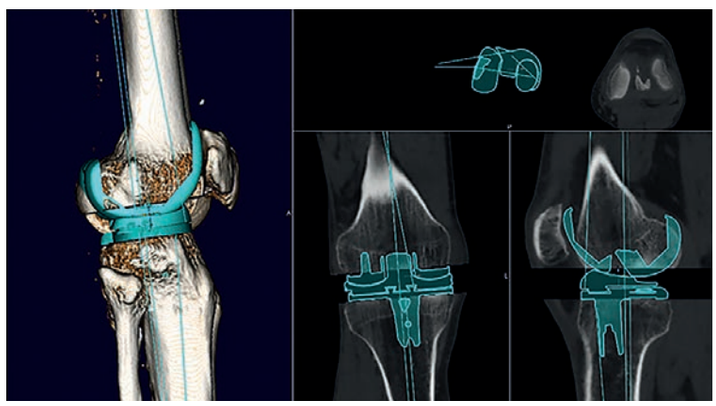
This means a significant decrease in radiation for your patient, but with the same quality of planning.

OP viewer

mediCAD Knee® 3D lets you display planning information and images from a storage medium (e.g. a USB stick) on a screen in the operating room. The layout of the OP viewer can be adapted as needed to display a different number of images.







Thieme eRef integration

Effective immediately, the **mediCAD®** preoperative planning software from mediCAD Hectec GmbH includes Thieme eRef content. In Thieme eRef, doctors receive comprehensive situational-based and case-based medical information from Thieme reference books and journals, as well as information from databases. Through the integration of eRef into the **mediCAD®** planning software, doctors can now access the content in eRef at any point of digital operation planning.

14 days

FREE OF CHARGE

Use of eRef is free of charge for **14 days** after registration!

Manufacturer information

mediCAD Knee® 3D requires Windows 7/10, 64 Bit with .NET Framework 4.5 and a current processor with at least 4 x 4 GHz and at least 8 GB RAM.
Recommended display resolution: Full HD.
No diagnostic monitor is required.

3D training

mediCAD Knee® 3D requires no prior program knowledge and is easy to learn. The user is intuitively guided through the program and all instructions are displayed in plain text on the interface. Training generally takes approximately 3-4 hours to complete.

mediCAD Hectec can offer you qualified training sessions for each module. The training sessions can either be conducted at your workplace or online via the internet. X-ray images are read in the DICOM® format via an interface of your PACS/RIS system. **mediCAD Knee® 3D** communicates with all DICOM® interfaces and is therefore compatible with all PACS systems. Many common image formats can also be read.

We would love to present you with **mediCAD Knee® 3D** solution! Our sales team is happy to help and is available to answer any questions you may have.

We also gladly welcome any ideas that you might have to make our product even greater.

You can also order a free demo version of **mediCAD Knee® 3D**. The demo version corresponds to the full version of the program and is valid for 30 days. There are no restrictions on the functionalities or the implant database in the demo version.
To order the demo version, please contact us at:

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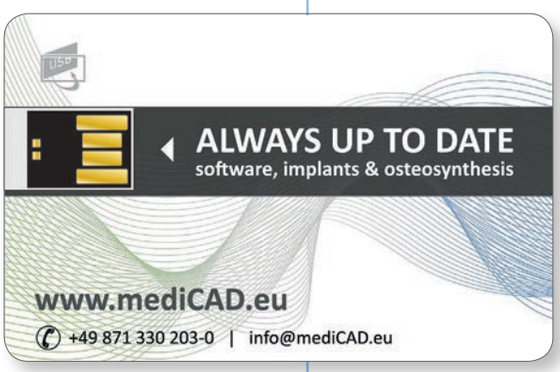
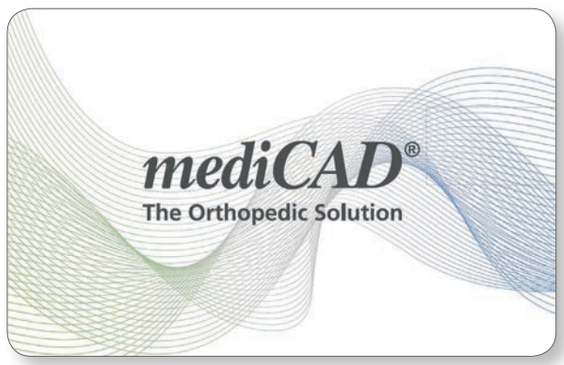
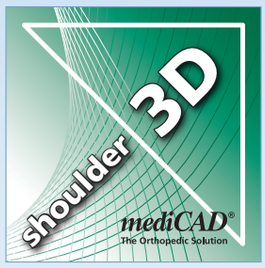
www.mediCAD.eu
sales@mediCAD.eu

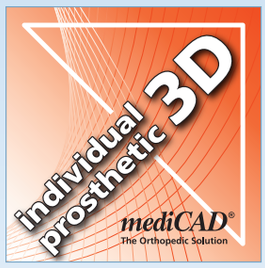


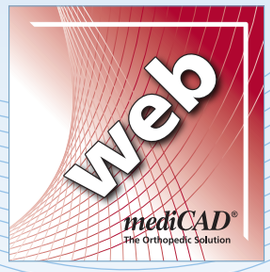


Successful surgery
through digital planning

Additional products from mediCAD Hectec:







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