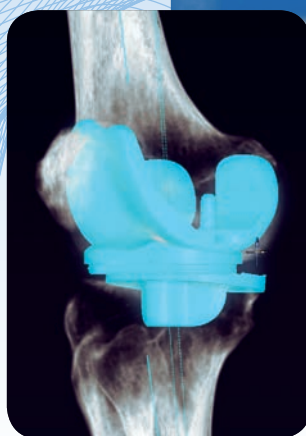
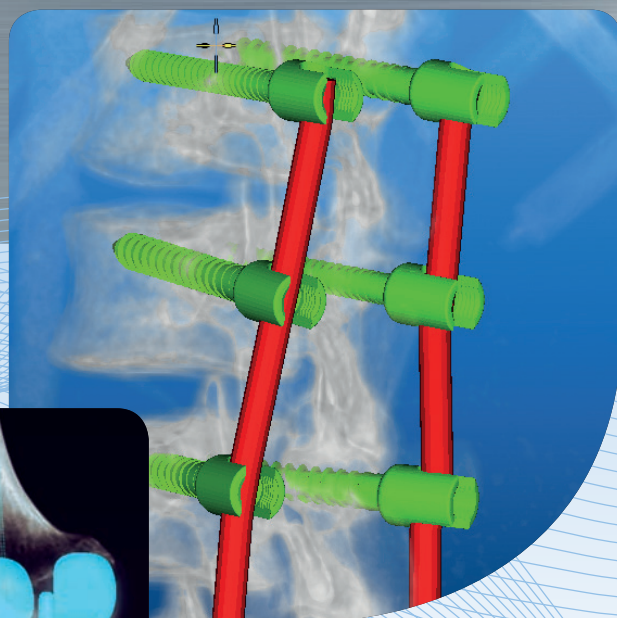
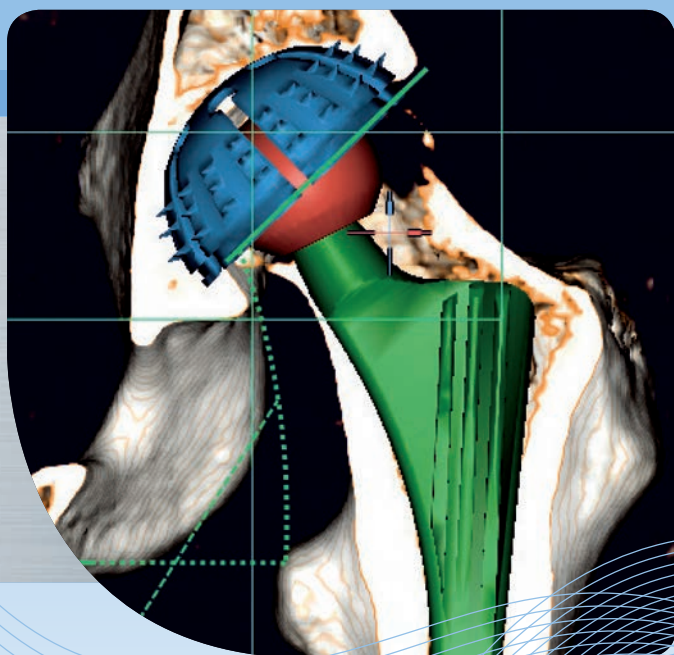


# Preoperative Planning Postoperative Control

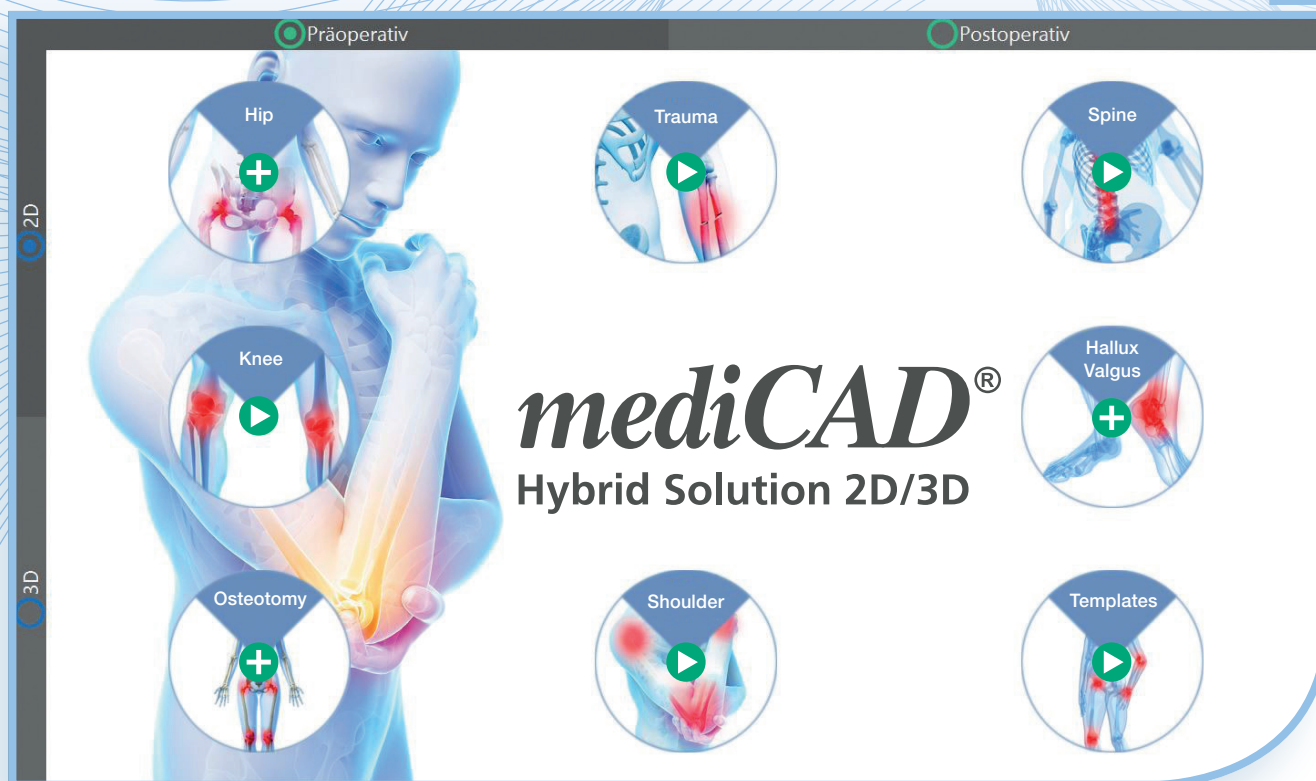


***mediCAD***<sup>®</sup>

The Orthopedic Solution

[www.mediCAD.eu](http://www.mediCAD.eu)





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### Greetings!

In many countries, it is required by law for surgeons to utilize pre-operative planning and to archive their work. **mediCAD®** is a medical software package that helps ensure a high level of planning and operational quality. Specialized tools for handling and editing digital images have become indispensable and will remain essential for the foreseeable future. They help determine, display, calculate, and document the most effective alternatives and reveal useful information before surgery. **mediCAD®** is a high-performance, modular software package that provides such information in a compact, easily understood format. Whether you use **mediCAD®** during daily hospital routines or for scientific purposes, it will help you plan better and ensure quality. Now is a great time to schedule a free, on-site demonstration. We are sure you will be impressed by **mediCAD®**'s highly refined design, user-friendly operation and cutting-edge procedures, designed in collaboration with doctors for doctors. There are more than 20,000 surgeons working with **mediCAD®** around the world.

Best,  
mediCAD Hectec GmbH



### INFORMATIONS

The system was developed in collaboration with doctors for doctors, giving you and your patients:

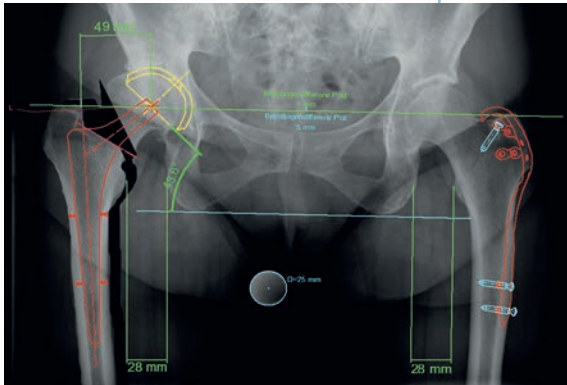
- A globally recognized planning program
- Access to all current planning methods
- Modular design
- Standard operating procedures
- Immediate access to 23 languages
- Documentation of all steps
- Time savings of up to 90% over conventional planning
- Access to more than 130 international implant manufacturers with more than 500.000 templates
- **mediCAD®** is certified according to 93/42/EWC and DIN EN ISO 13485 and approved as a medical product.
- In international markets, **mediCAD®** is also sold under the name IMPAX Orthopaedic Tools (through AGFA Healthcare)
- Both programs are approved as medical products according to FDA 510k / Health Canada CMDCAS.
- mediCAD Hectec continuously refines and develops **mediCAD®**
- Custom functions and special modules.
- **mediCAD®** has been used by medical professionals for more than 20 years

Made in Germany



### Hip

The hip module helps you plan hip implants. It is based on planning methods, which were previously done manually, for hip endoprosthesis using radiographic imaging and prosthesis templates.



*Calculation and implementation of intertrochanteric osteotomies*

#### Now you can quickly:

- Select and fit suitable cup and shaft combinations
- Correct an adduction or abduction
- Determine pre and post-operative leg-length compensation and display this on the image
- Use the FAI module (femoroacetabular impingement), developed in close collaboration with Dr. Wolfgang Zinser
- Plan an intertrochanteric osteotomy.

Use the autoplan function for rapid, automated planning: The hip module contains an autoplan function that determines individual reference points and then automatically suggests shafts and cups. The best-fitting implants are suggested for each individual case and automatically inserted. They can be later modified based on your preference. The option to pre-select a specific manufacturer makes it easy to limit choices to your preferred implants.

### Intertrochanteric Osteotomy

The module „intertrochanteric osteotomy“ allows planning an osteotomy at the upper portion of the femur, the greater trochanter. The intertrochanteric osteotomy often provides the possibility to delay the use of a prosthesis.

The module allows to plan the resection close to the trochanter and to rotate around a defined center of rotation. The osteotomy can be flexibly changed. Also the rotation of the femoral head can be simulated.

Suitable osteosynthesis components like nails, plates, screws, etc. can be easily selected from a database.

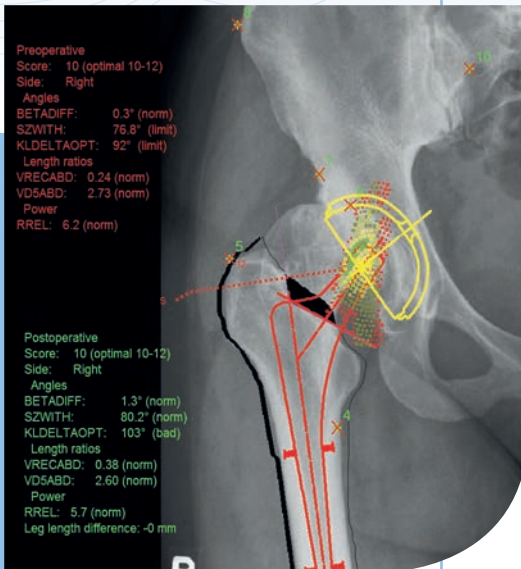
### FAI

The FAI function in the module hip provides the user with tools and techniques which can be used to diagnose pathologies such as: CAM, Pincer, Mixed-impingement as well as dysplasia of the hip.





## Biometry



Looking for a biometric analysis?

No problem!

**mediCAD®** automatically suggests the optimal position of the joint center point while considering body size, weight and initial biometric analysis. The load distribution is improved and physiological muscle flexing is re-established using the biometrically determined standard range for anchoring of prostheses.

Optimized implant geometry avoids biomechanically unfavorable results.

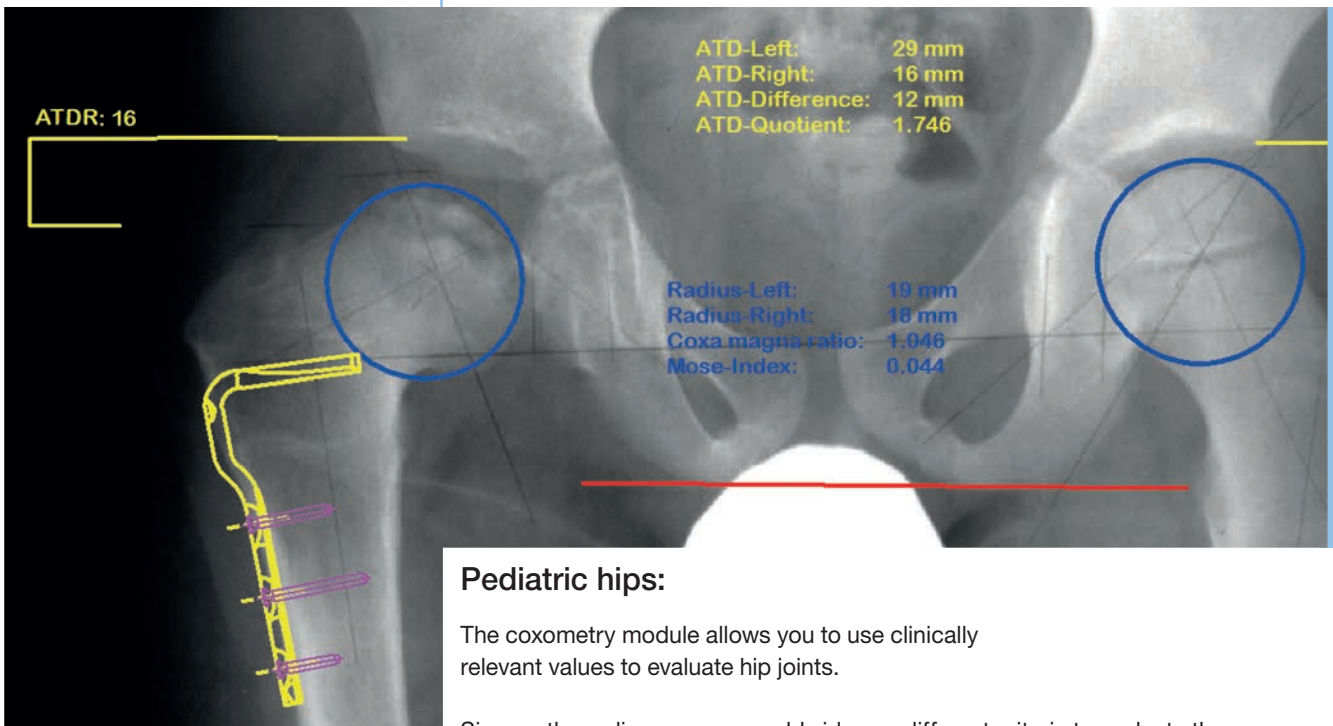
**mediCAD®** has unique capabilities for answering these types of questions.

**mediCAD®** calculates and displays the right pivot point for optimized joint geometry, simulating the load-bearing situation of a healthy joint.

The mathematically optimized pivot point lies within the green zone, placing it in the optimal range according to a 12-point score.

The inner cortical is automatically detected for precise fitting of the implant.

## Coxometry



### Pediatric hips:

The coxometry module allows you to use clinically relevant values to evaluate hip joints.

Since orthopedic surgeons worldwide use different criteria to evaluate the hip situation, the coxometry module modifies the procedure to meet your needs. **mediCAD®** evaluates most of the criteria using known grading tables such as the acetabular head index or the cup angle of inclination.

Saving and/or printing of planning images provides an avenue for follow-up studies.

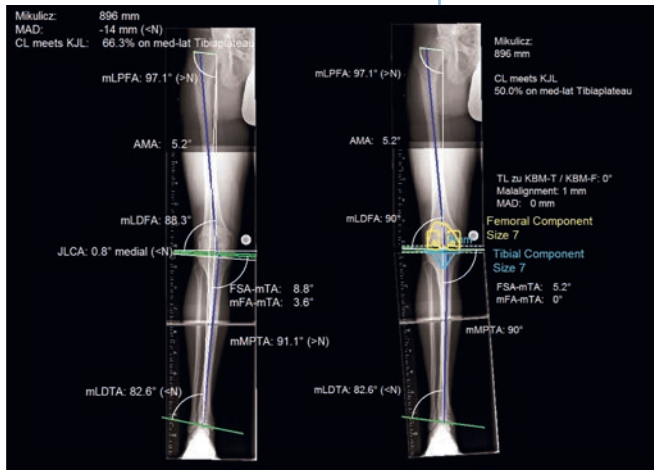


### Knee

The knee module is used to plan knee prostheses. Potential axial misalignments can be detected and corrected during planning session prior to actual surgery. This enables both pre- and post-operative of load distribution correction on the entire leg.

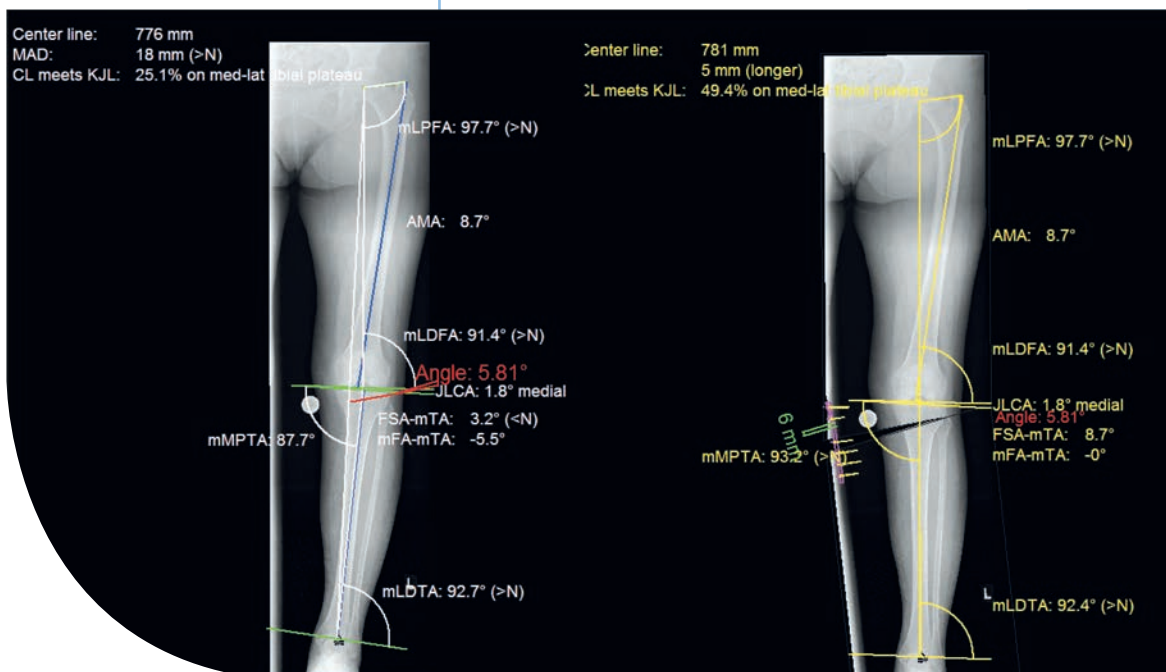
Depending on the surgeon's preference, **mediCAD®** can correct the misalignment automatically or through manual adjustments.

It calculates the mechanical axes, weight-bearing line and all relevant angles that are expected post-op.



### Osteotomy

The osteotomy module can be used to plan femoral or tibial corrective osteotomies, with single or multiple osteotomies, using the open wedge or closed wedge technique. Axial misalignments are found automatically and corrections are handled both automatically or manually. An integrated database makes it easy to select suitable osteosynthesis components such as nails, plates, screws and more. With **mediCAD®**, merging partial images to create a complete long-leg image is a very simple and intuitive process.





## Osteotomy according to Dror Paley

An analysis determines the type, number, size and localization of the osteotomies. When correction is complete, all joint-related mechanical weight-bearing axes and joint tangents must lie within the normal range.

### Common methods:

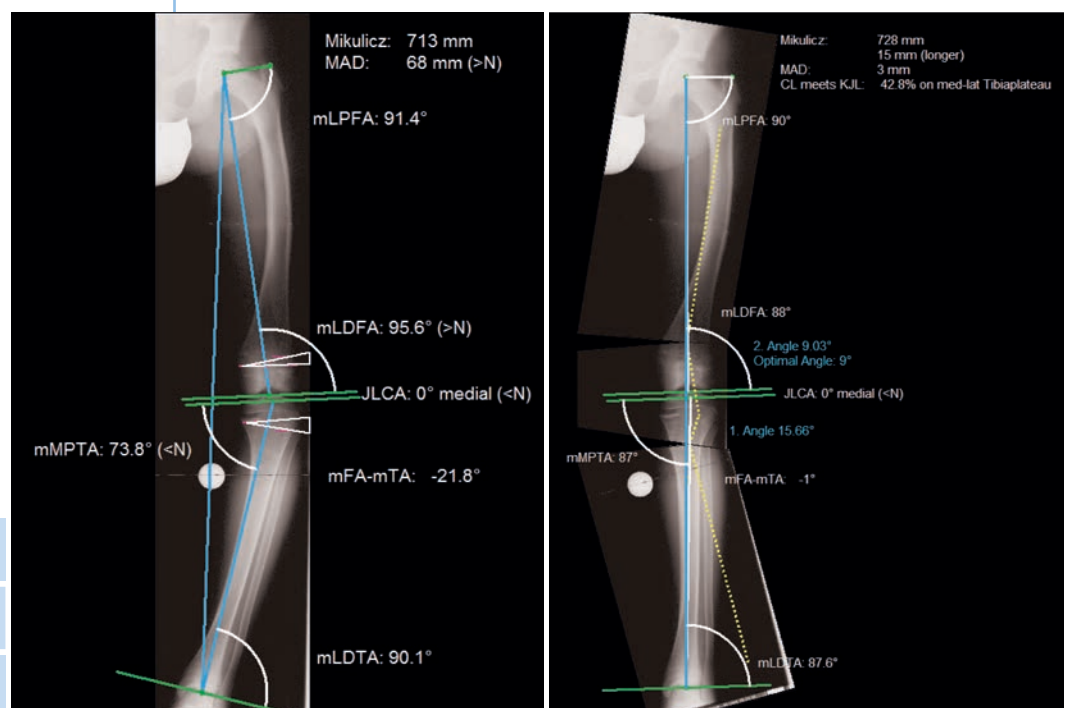
Open Wedge or Closed Wedge, Translation

All pre- and post-operative results are shown. Misalignments can be calculated using the expanded osteotomy module according to Dror Paley.

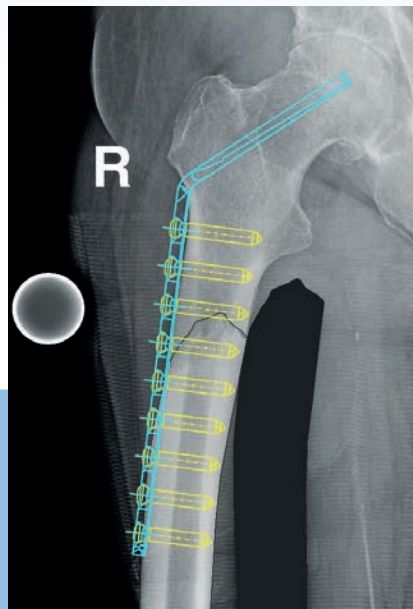
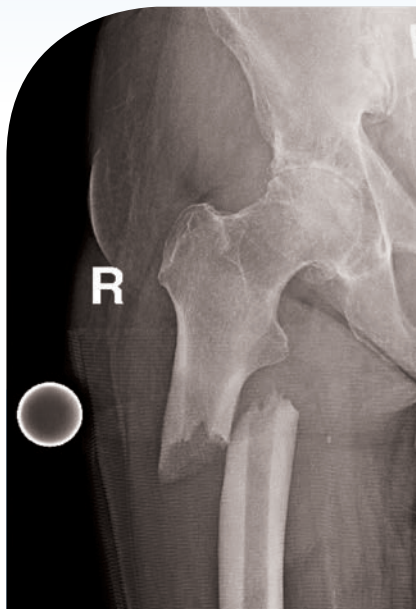
The process has been used for years at the Gelenkzentrum Rhein-Main ([www.gelenkzentrum-rheinmain.de](http://www.gelenkzentrum-rheinmain.de)). The mathematical principles are based on the studies of Prof. Dror Paley of Baltimore, as well as Prof. Dr. J. Pfeil and Prof. Dr. B. Gladbach.

- Analysis of the pre-operative situation
- Determination of CORA/NCORA, single or multiple osteotomies
- Simulation of post-operative results.
- Automatic calculation of optimal angles.
- Determination of the apex and actual angle of deformity from the AP and sagittal views.
- Interactively select and evaluate the correction yourself.

Dror Paley's principles of deformity correction. Developed for **mediCAD®** with Prof. Dr. J. Pfeil and Prof. Dr. B. Gladbach of Wiesbaden







## Trauma

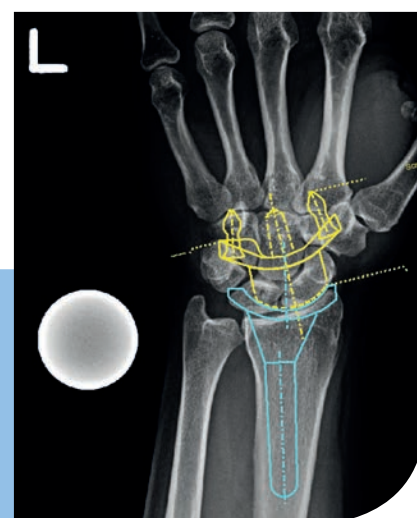
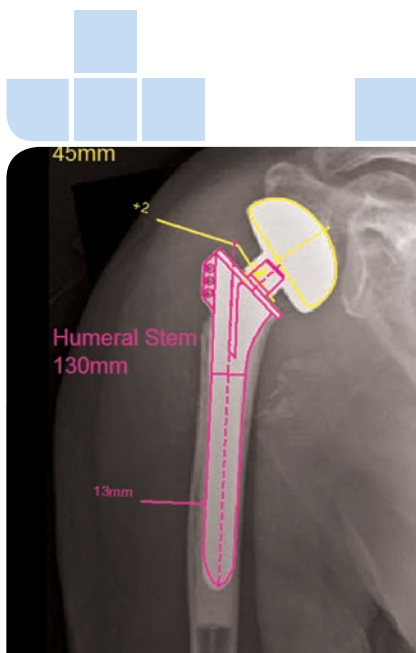
Bone segments can be isolated and shifted as well as required osteosynthesis products put into place. Implant templates for plates, screws and nails are included. With **mediCAD®**, merging partial images in order to create a complete image is a very simple and intuitive process.

- Very simple and intuitive image processing for reconstructing skeletal elements.
- Data library for pins, screws, and plates.

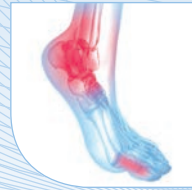
## Shoulder, Elbow Hand, Finger

Enables determination of the size and position of implants for shoulder, elbow, hand and finger, ensuring optimized planning.

- Post-operative results can be simulated.

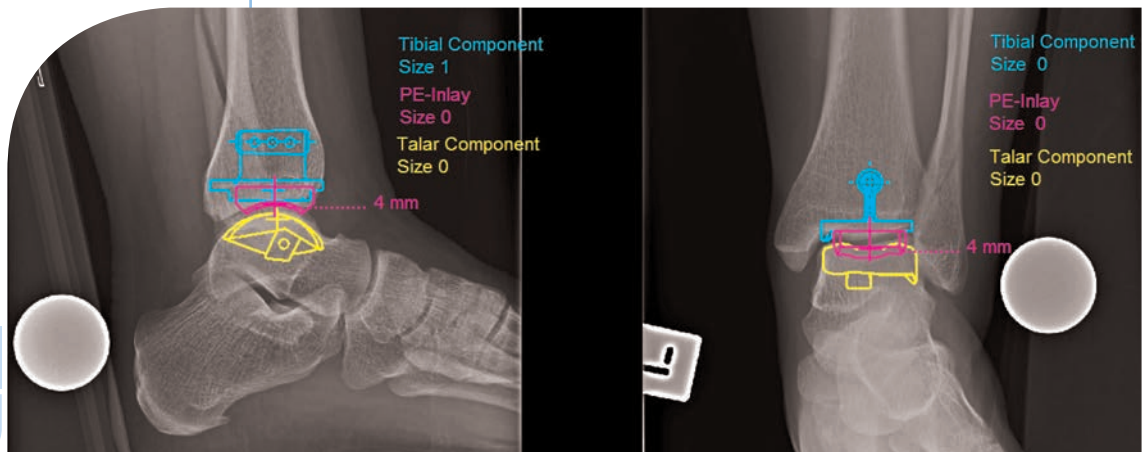






## Foot / Ankle Joint

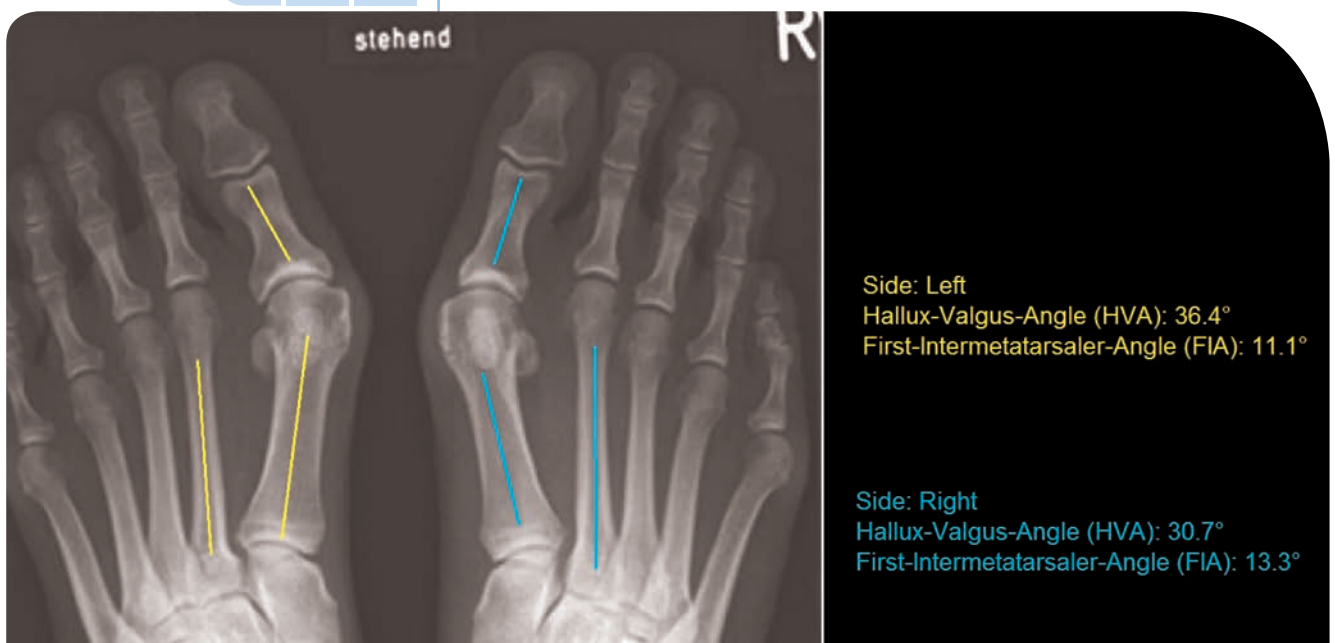
Enables optimized planning, determination of size and position of implants for feet, ankle joints and toes.

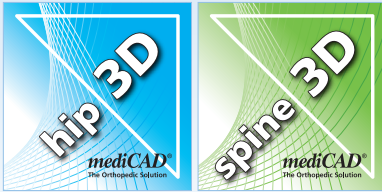


## Hallux Valgus

Analysis of the pre-operative situation through automatic calculation of all relevant angles. Post-operative results can be simulated at any time.

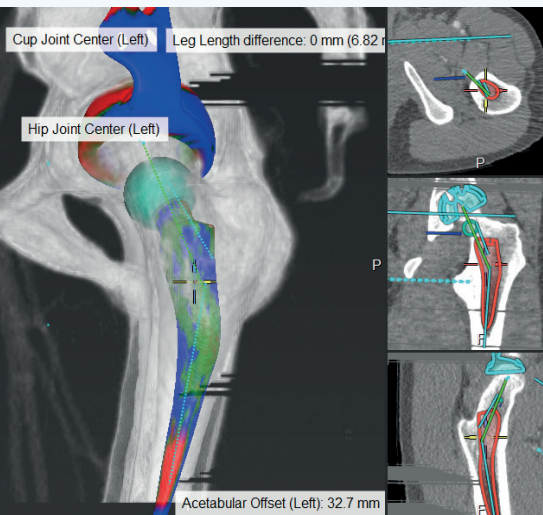
Individualized dimensioning options and a variety of implants are accessible.





## Hip 3D

You can use this module to implement preoperative planning of hip endoprosthesis in 3D.



Many features are available such as :

- Segmenting of the 3D object
- Removal of the femoral head
- Full intuitive planning of the socket, inlay, head and stem
- Planning of revision endoprosthesis
- Hip length compensation
- Femoral cut
- CCD angle dimensioning
- Acetabular ante-retroversion
- Femoral ante-retroversion
- Femoral offset
- Acetabular offset
- Range of motion simulation
- Distance and implant-bone
- Contact visualization
- Transparent view for better recognition of the planned position
- Fragment positioning in the event of a trauma
- Possibility of exporting as STL for 3D printing
- Individual prosthesis interface with leading manufacturers and data anonymization
- Thieme eRef integration
- PACS export

## Spine 3D

This new module opens entirely new worlds for the doctors carrying out planning sessions. CT or MRI images can now be used for planning in 3D.

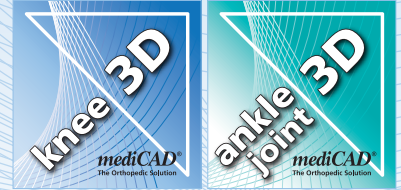


The following functions are available:

- High-resolution MIP and MPR representation in colour
- Various visualization representations
- 360-degree image of the patient and the prosthesis
- Internal visual of the patient
- Display or hide regions of the body
- Focus on specific areas of the body
- 3D measurements
- Batch of the spinal focus
- Scoliosis in accordance with Cobb
- Scoliosis in accordance with Ferguson
- Internal pedicle distance
- Spinal canal width index Lordosis
- Kyphosis
- Atlantodental distance
- Dens batch
- Diameter of the spinal canal
- Spondylolisthesis
- Disc height
- Disc angle
- Instability in accordance with Van Akkerveeken
- Sacral angle
- Pelvic Tilt
- PT Pelvic Incidence PI
- Pelvic Angulation PA
- Pelvic Lordosis Angle
- Pelvisacral Angle PSA
- Sacral Slope C7 Plumb Line
- Pelvic Thickness CS
- Pelvic Thickness SPT
- Planning spondylodesis
- Planning cages

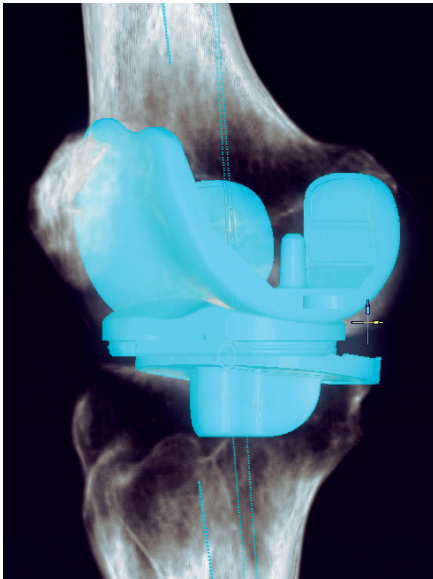
**mediCAD Spine® 3D** provides active support for all of our customers, for all the various measurements that can be performed automatically. You can also reduce the automatic results to the desired value manually.





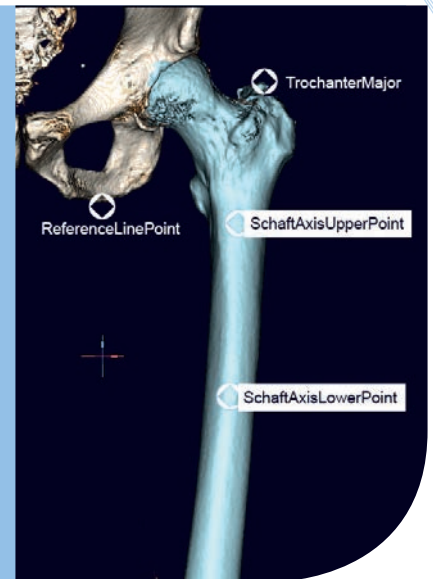
## Knee 3D

You can use the knee 3D module to analyze and correct deformities and carry out the preoperative planning for the endoprosthesis.



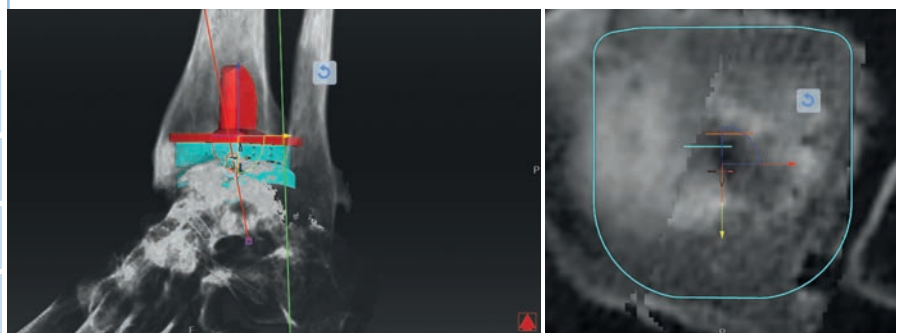
### Additional features include:

- Full intuitive planning of the femur and tibia components
- Automatic detection of relevant points in the CT scan.
- Stitching together partial CT images, thus reducing the amount of time the patient is exposed to radiation while the images are taken
- Osteotomies
- Implant bone distance visualization
- Measurement of the torsion of femur and tibia
- Adding slope to tibia when placing implant



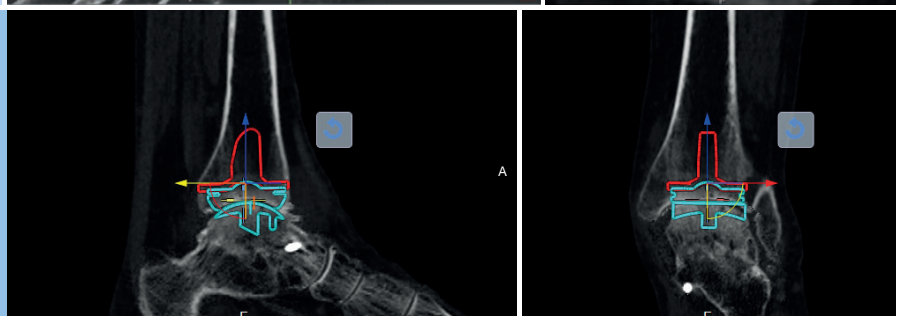
## Ankle Joint 3D

In the ankle joint 3D module, you can correct a misalignment of the ankle bone, realign the Mikulicz line and therefore know how many degrees the ankle joint needs to be corrected before the ankle joint surgery.



### Features:

- Planning of implants
- Measurements
- Range of Motion
- Implant bone distance visualization







## Manufacturer information

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**mediCAD Hectec GmbH**  
**Opalstraße 54**  
**DE-84032 Altdorf**  
**GERMANY**

**FDA 510(k): K140434**  
**CMDCAS 512917 MP23CMDR / 170616856**



The quality management system of mediCAD Hectec is certified according to DIN EN ISO 13485, issued by said site 0483. The product complies with the basic requirements of 93/42/EWC as provided by the quality management system and is approved as a Class I m medical product in accordance with this directive.

## Hardware recommendations

**mediCAD®** runs smoothly on any current Windows PC, laptop, or netbook and on selected tablet computers. Recommended display resolution is 1280x1024. A diagnostic monitor is not required.

### *Templates:*

We are happy to integrate your preferred manufacturer's implant and accessory templates into the system. Currently the system contains approximately 500,000 templates from more than 130 manufacturers.

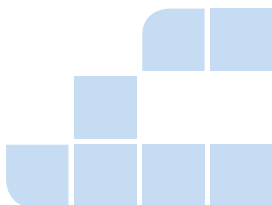
## Training - DICOM®

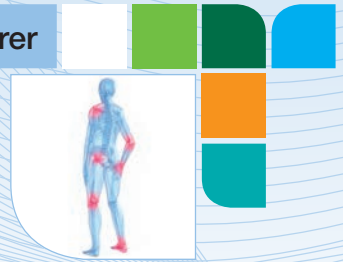
### *Introduction / Training*

**mediCAD®** requires no previous knowledge and is easy to learn. The user is guided intuitively through the program with all instructions displayed in plain language on the interface. Training usually requires approximately two hours.

mediCAD Hectec is ready to provide skilled training for every module. Both on-site and online training are available.

Radiographs are imported in DICOM® format through an interface on your PACS/RIS system. **mediCAD®** communicates with all DICOM® interfaces, making it compatible with all PACS systems. Many common image formats can also be imported.





## Implant manufacturer

**mediCAD®** has the world's largest database of implants.

Surgeons can select from approximately 500,000 templates and more than 130 international manufacturers. The database is expanded and updated monthly with new and revised implant systems.

3M  
AAP Implantate AG  
Acumed  
Adler Ortho  
Aequos  
Aesculap  
alloPlus  
Alphamed Fischer  
AQ Implants  
Amplitude  
Arge  
Arge Implant  
Argomedical  
Arthrex  
Ascension Ortho  
Ateos Medical  
B&JR  
Beznoska CZ  
Bioprofile  
Biotechni  
Brehm  
C2F Implants  
Ceramconcept  
CeraVer  
Chiroplant  
Chiropro  
CHM  
Consensus Orthopedics  
Copf-Bionic  
Corin  
Dedienne Sante  
Depuy Synthes  
DJO Surgical  
Encore Medical  
Evolutis  
Exactech  
Falcon Medical  
FH Orthopedics



Global Orthopaedic Technology  
Groupe Lepine  
Gruppo Bioimpianti  
Hit Medica  
ICONACY  
Implantcast ImplanTec  
Integra  
Intraplant  
IO International  
Orthopaedics  
JM  
JRI  
K-Implant  
KLS Martin Group  
KMI  
Königsee  
KYOCERA Medical Corporation  
Lima Lto  
Link  
Logimed  
Marquard Medizintechnik  
Mathys  
MatOrtho  
Maxx Health  
Medacta  
Medartis  
MEDGAL  
MEDIN  
MedRaSys  
Medtronic  
Meira  
Merete  
MicroPort  
Moje  
MTM  
Newdeal  
ODEV Ortho Development  
OHST



OMNIlife science  
Orthodynamics  
Orthofix  
OrthoPediatrics  
OS Orthopedic Services  
Permedica  
Peter Brehm  
Privelop  
Proteim Orvosi Műszergyártó Kft.  
Protheos  
S&G Implants  
Sanatmetal Kft.  
SAMO SpA  
Santech  
SBI Small Bone Inovations  
SEM science-et-medecine  
SERF  
Smith & Nephew  
Speetec  
Stemcup  
Stratec  
Stryker  
Surgival  
Symbios  
Synimed  
Tantum  
Tecres  
Tornier  
Traiber  
UOC  
Whiteside Biomechanics  
Wittenstein  
Wright Medical  
X.NOV  
Zimmer Biomet



- Special validations are available at any time (in conjunction with the prosthesis manufacturer).
- We support our customers during planning of complete tumor and modular systems.



## Providers

**mediCAD®** uses the DICOM® standard. Please contact us for special adaptations to other digital systems. Here is a small excerpt from the list of our many partners:

AGFA HEALTHCARE  
ALTERIS  
AMETIQ  
ARCFORGE  
ARCHIMED  
ASHVINS by  
MEDICALCOMMUNICATIONS  
AYCAN  
BW-PLUS  
CARESTREAM  
CERNER  
CHILI  
DIGITAL MEDICS  
DIX-RAY

FUJIFILM  
GE-HEALTHCARE  
GEMED  
INFINITT  
IQ-WEBX  
ITH-ICOSERVE  
ITZ-MEDICOM  
MEDAVIS  
MEDIDOK  
MEDIGRATION  
MED-RAY  
MERCURY  
NEXUS | INOVIT | MEDOS  
OEHM & REHBEIN

PANSYS  
PERGAMON  
PHILIPS  
PHÖNIX-PACS  
PLANORG MEDICA  
RESQMED  
SECTRA  
SIEMENS HEALTHCARE  
SPIRIT | TIANI  
SYNEDRA  
TELEMIS  
VEPRO AG  
VISUS TT  
WIROMA AG

DICOM® is the registered trademark of the National Electrical Manufacturers Association for its standards publications relating to digital communications of medical information.








## Four ways to contact us!




☎ +49 871 330 203-0  
☎ +49 871 330 203-99

🌐 [www.mediCAD.eu](http://www.mediCAD.eu)  
@ [info@mediCAD.eu](mailto:info@mediCAD.eu)


  
[www.mediCAD.eu](http://www.mediCAD.eu)  
 +49 871 330 203 0  
[info@mediCAD.eu](mailto:info@mediCAD.eu)

**mediCAD<sup>®</sup> PLUS**  
The Orthopedic Solution

Always up to date  
software, implants & osteosynthesis

**mediCAD<sup>®</sup> PLUS**  
The Orthopedic Solution

I would like to receive  
information about the  
following planning  
modules:

- |                                 |   |   |
|---------------------------------|---|---|
| <input type="radio"/> Hip       | <input type="radio"/> Osteotomy           | <input type="radio"/> Knee 3D               |
| <input type="radio"/> Knee      | <input type="radio"/> FAI                 | <input type="radio"/> Foot, Hallux Valgus,  |
| <input type="radio"/> Biometry  | <input type="radio"/> Osteotomy according | <input type="radio"/> Ankle joint           |
| <input type="radio"/> Coxometry | <input type="radio"/> to Dror Paley       | <input type="radio"/> Shoulder, Elbow, Hand |
| <input type="radio"/> Hip 3D    | <input type="radio"/> Spine 3D            | <input type="radio"/> Trauma                |



## Reference objects

Scaling stations and reference balls - accessories for radiology  
Calibration balls / reference dimension, 25 mm diameter. Calibration balls are made of stainless steel. Our hollow balls are significantly lower in weight than conventional solid steel balls. The balls have a smooth surface that makes them easy to clean. To achieve the most accurate results possible, the balls are placed at the same level as the bone. We offer specially designed disposable adhesive pads to facilitate attachment of the ball to the patient. Our different scaling aids give you two very simple & intuitive ways to add a scaling object to your radiographs.

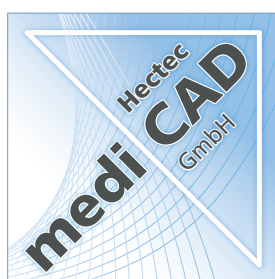
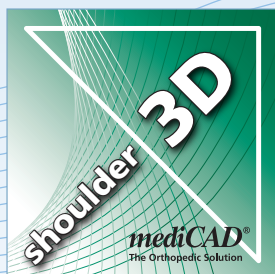
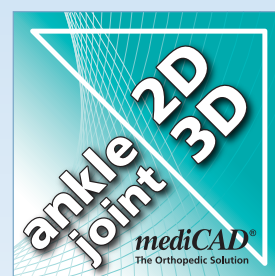
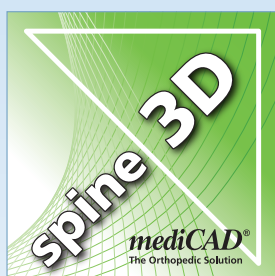
- Flexible arm for precise placement
- Length of arm is adjustable
- Integrated 25-mm scaling ball
- Precise placement at bone level
- Large base plate for placement on flat surfaces
- Practical clamp for long-leg images
- mediMARK<sup>®</sup> - new scaling device! [www.mediCAD.eu/mediMARK](http://www.mediCAD.eu/mediMARK)



[www.mediCAD.eu/equipment](http://www.mediCAD.eu/equipment)

# Successful surgery by digital planning

## Additional products by mediCAD Hectec:



**mediCAD Hectec GmbH**, Opalstraße 54, DE - 84032 Altdorf - GERMANY

☎ +49 871 330 203-0

☎ +49 871 330 203-99

✉ [info@mediCAD.eu](mailto:info@mediCAD.eu)

[www.mediCAD.eu](http://www.mediCAD.eu)

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