



Application report

# Commissioning and quality assurance with the THALES 3D SCANNER



# The Time Factor

## Efficient commissioning and quality assurance of the Halcyon™ Linear Accelerator

### Background

Meine Strahlentherapie Nürnberg GmbH is a company with a long history. Founded in 1970, it was the first radiotherapy practice in Bavaria and is still recognized for its experience and use of the latest methods. Its team of physicians has years of experience in radiation medicine and, along with the practice team, supports patients throughout their therapies.

The clinic has operated a Halcyon™ linear accelerator since 2021. The Halcyon™ linear accelerator is designed

for simple operation in imaging and treatment so that the practice team can focus entirely on the patients. The standardized work procedures are easy to learn and boost efficiency in daily use. Continuing this approach, the team led by chief medical physicist Dr. Erich Gebhardt has been using a THALES 3D SCANNER compatible with the Halcyon™ 2.0, 3.0, 3.1 and Ethos™ since 2022.

→ For more information on MVZ see [www.meine-strahlentherapie.de](http://www.meine-strahlentherapie.de)

## The System

The THALES software offers numerous options for the commissioning and regular quality control of linear accelerators. The web-based software can be integrated into the hospital network. Meine Strahlentherapie Nürnberg GmbH uses the THALES software with a direct connection of a laptop to the water phantom using

the Mozilla Firefox browser. No other tools are needed for data capture, administration or evaluation. The data archive has a search function that makes measurement sequences easy to find and individual analyses easy to make.



**Find out more  
about the  
THALES software**



### Trajectory Workspace

The software uses an integrated method for generating trajectories with a minimal number of interactions, predefined target profiles and PDDs with suggested depth dose measurements.



### Dr. Erich Gebhardt

Dr. Erich Gebhardt did his doctorate on "Dosimetry in the Proximity of Radioactive Sources in Medicine" and has been the Director of Medical Physics since 1995. His responsibilities range from radiotherapy, nuclear medicine and diagnostic radiology to further education talks and presentations.

Intuitive and user-friendly

# The THALES 3D SCANNER in clinical use

MVZ Meine Strahlentherapie Nürnberg GmbH uses the THALES 3D SCANNER for the efficient commissioning and quality assurance of the Halcyon™ linear accelerator.

All wiring and connections are conveniently enclosed in the THALES carriage system. After connecting the system, it takes only a few minutes to fill the water reservoir. Field detectors from various manufacturers can be used for measurements, and can be mounted horizontally or vertically.

Meine Strahlentherapie Nürnberg GmbH uses chambers CC13 and CC04 for extensive measurements, and the Nano Razor from IBA-Dosimetry for small field measurements. The THALES features user-friendly cable management in which the detectors are connected directly to the electrometer in the carriage system. The integrated electrometer of the THALES 3D SCANNER offers two independent channels with different bias voltages.

“Verification of the beam path is indispensable for medical physics. Thanks to its scanning area and compact size, the THALES system is perfect for the task!”

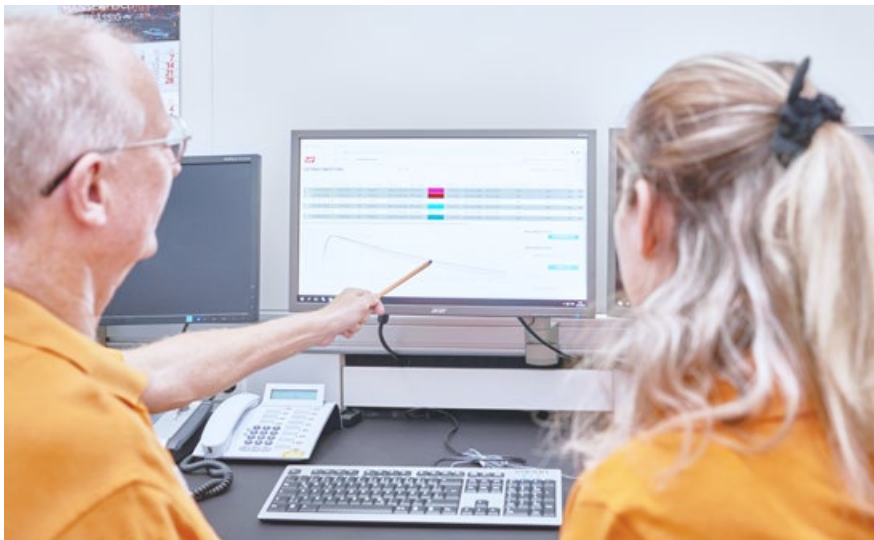
**Dr. Erich Gebhardt,**

Director medical physics,  
MVZ Meine Strahlentherapie Nürnberg GmbH



#### **Precise Alignment in Just a Few Steps**

The correct adjustment of the field detector is made with the help of the water level sensor. It can determine the water level to an accuracy of  $\pm 0.2$  mm, ensuring measurement objectivity. The reference detector is aligned using the positioning plate included in the scope of delivery. This is done directly at the water phantom with the robust manual control unit. The phantom is then moved into the bore with the patient couch. The automatic alignment of the central axis (CAX) completes set-up in just 15 minutes.



#### **Validating the Beam Model**

Meine Strahlentherapie Nürnberg GmbH uses THALES Software regularly for 60–70 measurements of various field sizes and depth configurations, including crossline, inline, diagonal and PDD profile measurements. The THALES software offers a range of analysis tools for examining and comparing measured data for quality assurance.



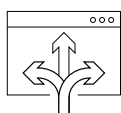
THALES 3D SCANNER

## Benefits at a Glance



### Minimum prep time

From set-up to measurement in just 15 minutes



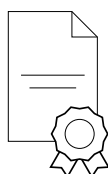
### Intuitive operation

User experience-optimized software provides for efficient and productive use



### Minimum machine occupation

50–60 quality measurements per hour for a large variety of field sizes



### Confirmed compatibility with Halcyon™ and Ethos™

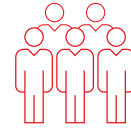
Suitability has been verified in the VARIAN compatibility program

# About us

LAP is one of the world's leading suppliers of systems that increase quality and efficiency through laser projection, laser measurement, and other processes. Every year, LAP supplies 15,000 units to customers in industries as diverse as radiation therapy, steel production, and composite processing. LAP employs 300 people at locations in Europe, America, and Asia.



**90+**  
Partners



**300**  
Employees



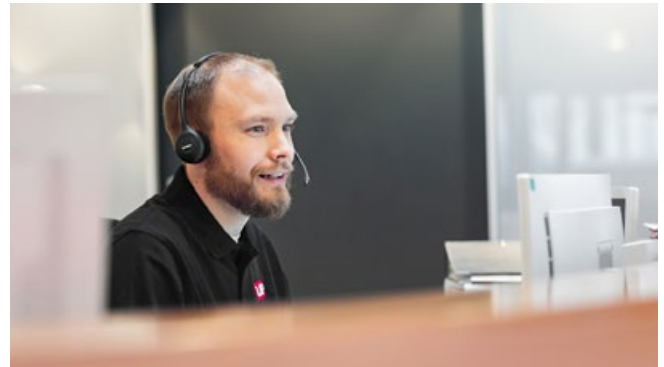
**7**  
Locations



## Quality

We work to uniform standards and with certified processes. For us, "Made in Germany" means the highest precision in manufacturing and quality inspection of each device. For our customers, this means planning and process certainty.

All our worldwide locations use a quality management system according to EN ISO 13485 or EN ISO 9001. Our products have all the necessary approvals and registrations almost everywhere in the world.



## Service

We ensure the maximum availability of your equipment so you can concentrate on your core process. Wherever you need us, our certified service technicians are quickly on site in any time zone. We support you from installation and commissioning, through user training, up to maintenance, repair, or unit replacement.

Our efficient logistics ensure the fast availability of spare parts worldwide. For technical questions and support, our helpdesk is at your disposal by telephone, via e-mail, or remote diagnosis.



More about our  
global QM system



Contact us!  
[info@lap-laser.com](mailto:info@lap-laser.com)

## Contact us!

P +49 4131 95 11-95

E [info@lap-laser.com](mailto:info@lap-laser.com)

**in** LAP Laser

**▶** [laplaser](#)

### **LAP GmbH Laser Applikationen**

**Zeppelinstr. 23**

**21337 Lüneburg**

**Germany**

LAP GmbH Laser Applikationen, Germany / LAP Measurement Technology GmbH, Germany / LAP FRANCE SAS, France  
LAP Laser Applications Asia Pacific Pte. Ltd., Singapore / LAP Laser Applications China Co. Ltd., China / LAP of America Laser Applications, L.L.C., USA / LifeLine Software, Inc., USA / Our worldwide partners: Argentina / Australia / Brazil / Bulgaria / Canada / Chile / Colombia / Croatia / Czech Republic / Dominican Republic / Egypt / Finland / Greece / Hungary / India / Indonesia / Italy / Japan / Jordan / Kuwait / Latvia / Lebanon / Lithuania / Malaysia / Mali / Malta / Mexico / Netherlands / Norway / Oman / Philippines / Poland / Portugal / Qatar / Romania / Saudi Arabia / Slovakia / Slovenia / South Africa / South Korea / Spain / Sweden / Switzerland / Taiwan, China / Thailand / Turkey / United Arab Emirates / United Kingdom / Venezuela / Vietnam / Zambia

LAP is a registered trademark of the LAP Group in several countries worldwide including the USA and EU. Designations of other companies and products are used for identification purposes only (e.g. to inform about the compatibility). These names can be trademarks or registered trademarks which belong to their respective owners. The use of any of these trademarks by third parties may infringe the rights of the respective owner.

**[www.lap-laser.com/thales](http://www.lap-laser.com/thales)**