



# IDENTIFY

THE NEXT STANDARD  
OF CARE



MOTION MANAGEMENT & PATIENT SAFETY **REDEFINED!**

humediQ



# IDENTIFY

THE NEXT STANDARD  
OF CARE

IDENTIFY is an automated patient identification and positioning solution with an unparalleled user interface. It provides a safe, transparent & efficient patient-centric workflow, ensuring maximum cooperation between the patient and the therapist. IDENTIFY is a single solution that optimizes the clinical workflow while at the same time increasing treatment quality and mitigating risk. Delivering a unified workflow between imaging and treatment suites, we ensure that the right patient is being treated, in exactly the right location, at exactly the right treatment site and position, with the right accessories and setup. IDENTIFY continuously monitors the patient for movement throughout the entire treatment session.

## Features:

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Patient Identification

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Accessory Identification & Navigation

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Surface Guided Patient Setup

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Surface Guided Inter-fraction Positioning

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Surface Guided Intra-fraction Motion Management

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Respiratory Management (Deep Inspiration Breath Hold)

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Oncology Information System Integration

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Light & Sound Integration

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Room Surveillance



### **Surface Guided Radiation Therapy (SGRT)**

IDENTIFY cameras allow full head-to-toe orthopedic surface capture enhanced with a defined region of interest. These features assist in easy and accurate patient positioning at isocenter. Capable of streaming high-quality video at high speed, IDENTIFY provides the fastest technologically advanced SGRT system available on the market today.

### **Patient Safety & Quality**

Reproducibility is paramount to delivering safe and effective radiotherapy treatments. IDENTIFY was designed to deliver just that. From initial patient planning through to the treatment itself, IDENTIFY tracks, monitors and involves the patient throughout the process. Using industry standard interfaces, IDENTIFY seamlessly integrates with your existing infrastructure and enhances it with full automation.

### **Workflow Efficiency**

IDENTIFY's goal is for the therapist to spend quality time with patients rather than struggle with complex computer systems. IDENTIFY allows radiotherapy departments to benefit from unparalleled operational efficiencies. Utilizing state of the art technologies, IDENTIFY will significantly decrease the average patient setup time, increase accuracy and safety, and eliminate manual data entry.

# Surface Guided Technology with Multiple Applications

IDENTIFY generates surface renderings at different stages in the workflow. The orthopedic setup surface, from head to toe, is initially acquired in the imaging suite as part of the planning process. This surface is used in the treatment suite to reproduce the exact orthopedic setup. IDENTIFY's unique Augmented Reality Guidance allows patients to assist in positioning themselves, which saves on setup time and minimizes heavy lifting for your clinical staff.

IDENTIFY also captures a reference surface at isocenter on the first treatment day. This is used to assist therapists in identifying the perfect daily positional setup relative to isocenter on subsequent treatment days. In addition, therapists are always reminded to reposition the patient after moving the couch for imaging or collision avoidance. Finally, IDENTIFY monitors this surface for patient motion during treatment delivery.

**Maximizes patient and staff satisfaction!**

## IDENTIFY Automated Time-Out Workflow



### CAPTURE OF SETUP AT CT

- Capture of Patient ID via Palm Reader or RFID
- Capture of Correct Accessories
- Capture of Exact Accessory Position
- Capture of Patient Orthopedic Setup Surface
- Teach Patient DIBH technique [Deep Inspiration Breath Hold] using DIBH coaching function
- Configure DIBH settings
- Capture of perfect DIBH level
- Capture 4DCT Breathing Signal



### PATIENT CHECK-IN

- Patient Self Check-In using Palm Reader or RFID
- Automated Queuing to the Oncology Information System using HL7
- Displays Appointment Location and Time to Patient



### ACCESSORY SETUP

- Auto-Selection of Patient from Oncology Information Systems
- Reproducing Setup from Imaging Suite
- Accessory Navigation using Augmented Reality
- Accessory Verification
- Display of Patient Setup Notes and Setup Images
- Alternating Bolus
- Layered Accessories



### SURFACE BASED ORTHOPEDIC SETUP IN LOADING POSITION

- Patient ID Verification with Palm Reader or RFID
- Orthopedic Setup Reproduction using Augmented Reality Guidance
- Patient Assisted Positioning
- Verification of Orthopedic Setup compared to Imaging Suite



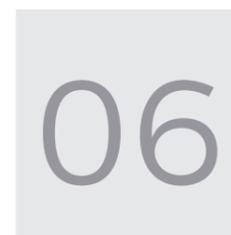
### SURFACE GUIDED POSITIONING AT ISOCENTER

- Position the patient within 2mm of reference treatment setup
- Positional Table Guidance using 6 degrees of freedom
- Visual color and numeric Interface showing accuracy of positioning



### SURFACE GUIDED INTRA-FRACTION MOTION MANAGEMENT

- Patient Surface is monitored for motion
- Marker on Patient can be used for Gating Techniques
- Unique, advanced Deep Inspiration Breath Hold Technique



### END OF TREATMENT

- Automated Session protocol exported to Oncology Information System
- Data can be accessed and analyzed for auditing and statistical purposes

# CT

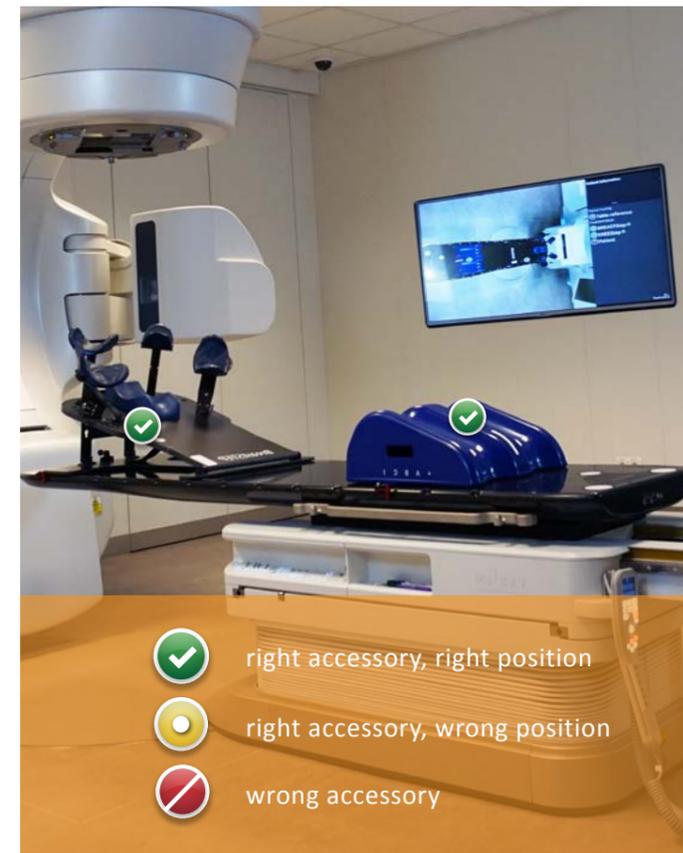
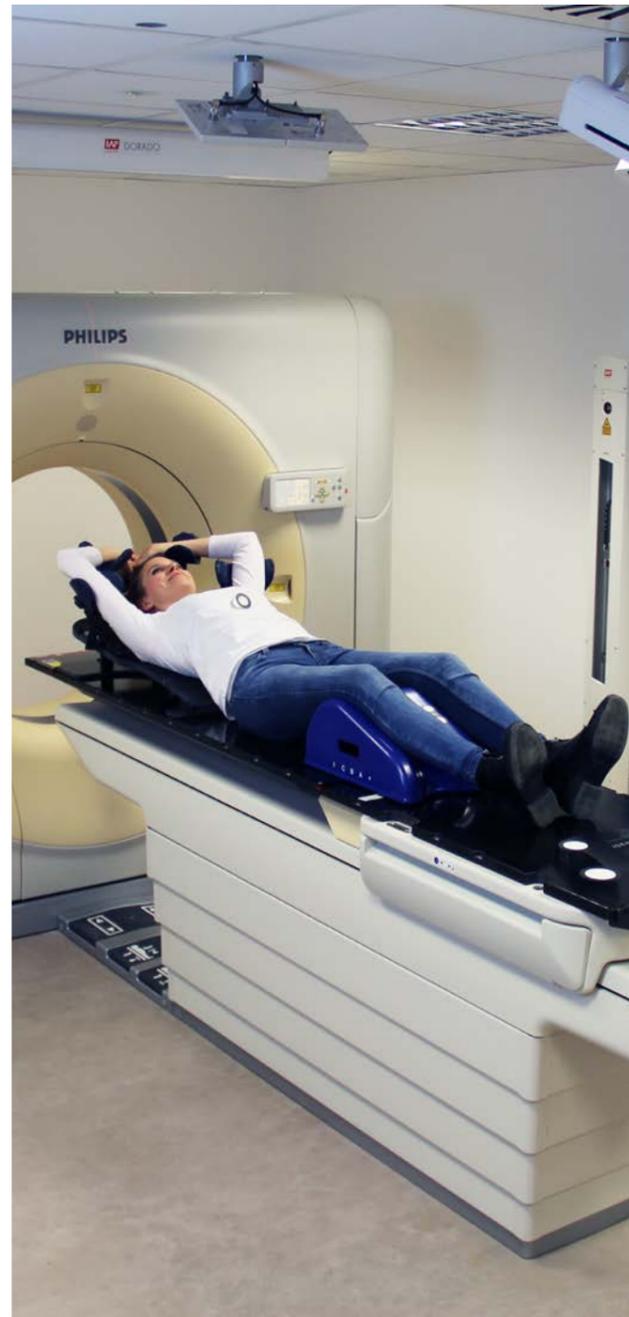
## Capture of Setup at CT

### At the Imaging Suite

- Capture of Patient ID via Palm Reader or RFID
- Capture of Correct Accessories
- Capture of Exact Accessory Position
- Capture of Patient Orthopedic Setup Surface
- Teach Patient DIBH technique using DIBH coaching function
- Configure DIBH settings
- Capture of perfect DIBH level
- Capture 4DCT Breathing Signal

This sequence, from Patient ID to capturing the breathing signal, is accomplished with simple clicks on a handheld device.

IDENTIFY captures the surface of the entire body. This helps to reproduce the orthopedic setup for every treatment session and identifies the cause of misalignments faster.



### IDENTIFY RFID

#### Patient Identification

IDENTIFY is integrated with the Oncology Information System to automatically synchronize the patient and treatment selection. This process ensures that the correct treatment will be delivered to the correct patient. RFID reader verifies the identity of the patient through the scan of the personal ID card.

#### Accessory Identification

IDENTIFY uses a RFID reader, which automatically recognizes accessories while they are being positioned on the treatment couch. IDENTIFY will display a "shopping list" of accessories required for that specific treatment. IDENTIFY clearly indicates missing or wrong accessories. Using Augmented Reality Guidance, IDENTIFY also assists therapists with correct navigation and positioning of accessories. Therapists are given the "green light" when the correct accessories are correctly positioned.

The treatment specialist is no longer required to scan bar codes or go through the accessory checklists.

# 01 Patient Check-In

## At the Waiting Room

- Patient Self Check-In using Palm Reader or RFID
- Automated Queuing to the Oncology Information System using HL7
- Displays Appointment Location and Time to Patient

IDENTIFY offers a robust and safe patient identification system. The Palm ID Reader or RFID reader securely recognizes the identity of the patient for each appointment.

As IDENTIFY is integrated with all the popular Oncology Information Systems, the patient can now queue themselves in at the reception desk and appointment details will be shared on the digital display. This is a more effective alternative to barcode queuing and other systems.

**Now you can have a simple, easy and extremely SAFE patient identification system throughout the entire department.**



When the right patient is recognized the system shows patient data and orthopedic setup guidance.



## IDENTIFY PALM

### Patient Identification & Patient Self check-In

The IDENTIFY Palm Reader is humediQ's contact free biometric patient identification and verification solution.

It identifies the patient through the scan of her or his unique hand vein profile. During the first appointment the patient's palm scan will be linked to the patient ID.

On each treatment day, IDENTIFY verifies that the right patient will be treated with the right setup.

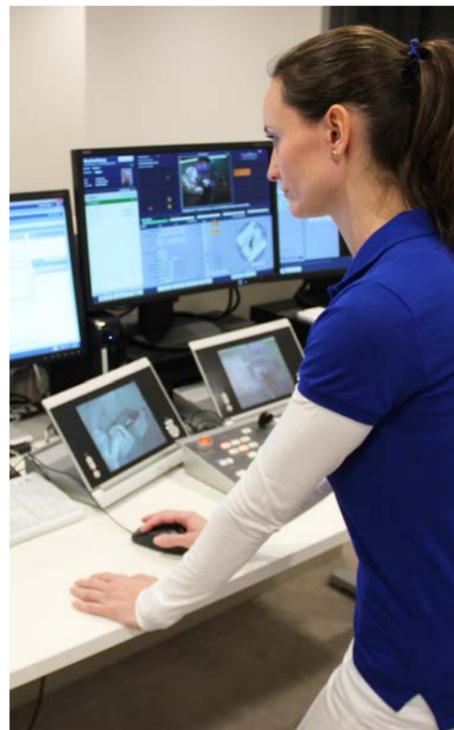
If the wrong patient scans their palm, IDENTIFY will alert the therapist and will prevent the workflow from proceeding. High security, speed and efficiency of the identification process are distinct advantages of the IDENTIFY Palm Reader.

# 02

## Accessory Setup

### Patient Selection from OIS

IDENTIFY automatically synchronizes with the patient, selected in the Oncology Information System, and presents the therapist with the full patient setup that was previously captured in the imaging suite.



### At the Treatment Room

- Reproducing Setup from Imaging Suite
- Accessory Navigation using Augmented Reality
- Accessory Verification
- Display of Patient Setup Notes and Setup Images

With IDENTIFY's augmented reality interface the therapist can quickly place correct accessories in the correct position, reproducing precisely the initial setup in the imaging suite. The clinical staff no longer needs to scan bar codes or go through the accessory checklists, which saves valuable time. The easy-to-understand color coding, in a traffic light pattern of red-yellow-green, enables the specialist to clearly see the missing or wrong aspects in the setup preparation.

When all accessories are in the right indexing location the setup is ready for the patient to lay down on the table.

### Alternating Bolus

Is today a bolus or non-bolus day? It's a tedious process that often leads to errors. IDENTIFY is the only digital system in the world that can verify which treatment fraction requires bolus and which one doesn't. Eliminating mistakes and increasing efficiency and confidence in your quality processes.

### Layered Accessories

IDENTIFY verifies accessories as they are introduced in to the treatment process, effectively treating them as layers. For instance, the accessories that go underneath the patient (eg. knee step and breast step) get verified first prior to patient verification. At this point the patient enters the room and is verified as the right patient to treat. Once the patient has assumed the correct orthopedic position, additional accessories (eg. bite block, bolus, handles, etc.) can be introduced and will be verified. This allows for real time accessory verification rather than single batch verification.

IDENTIFY provides an easy, safe and automated workflow that saves time.



# 03

## Surface Based Orthopedic Setup in loading position

### Orthopedic Setup

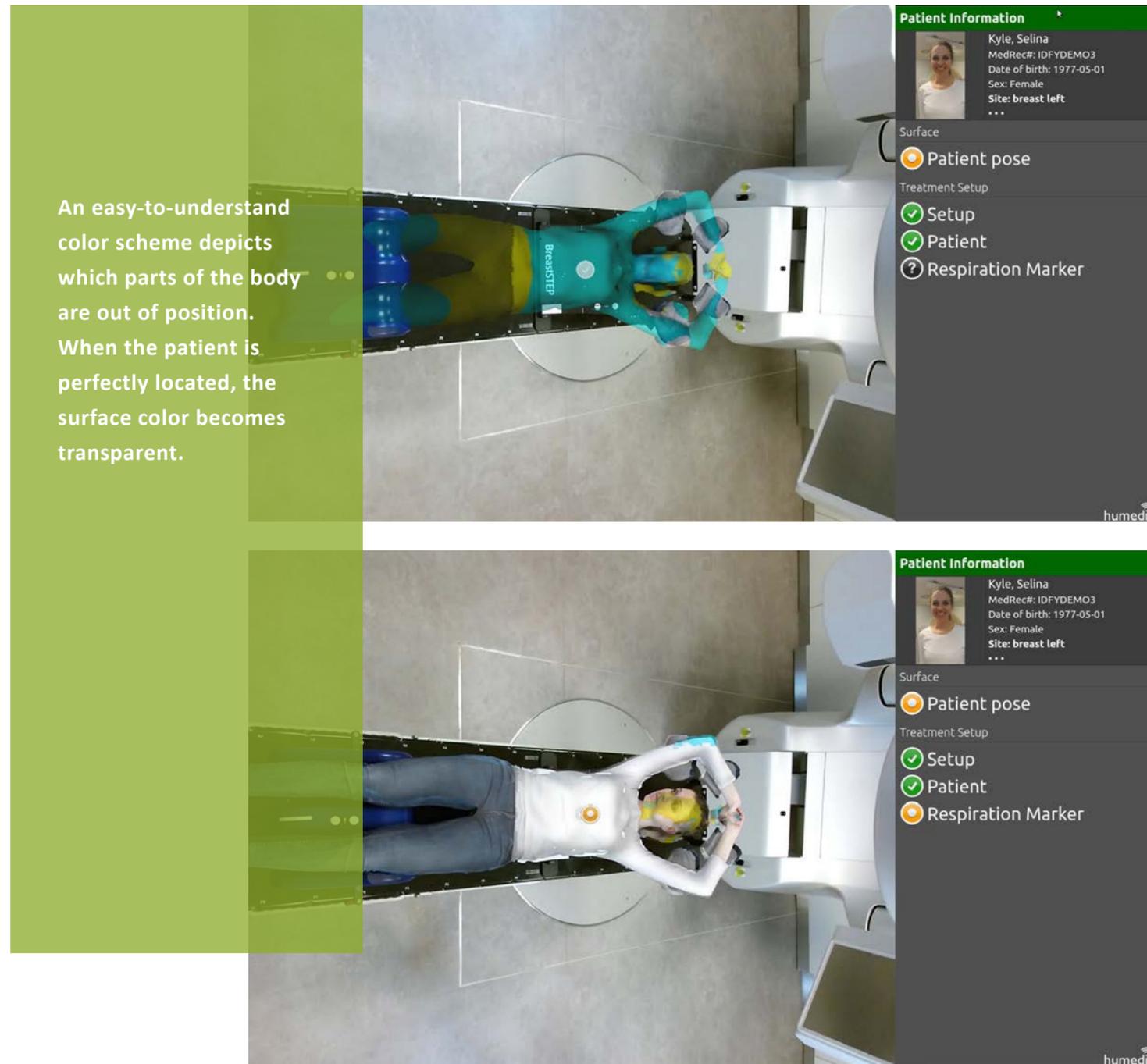
- Patient ID Verification with Palm Reader or RFID
- Orthopedic Setup Reproduction using Augmented Reality Guidance
- Patient Assisted Positioning
- Verification of Orthopedic Setup compared to Imaging Suite in loading position

As soon as the RIGHT patient is recognized, IDENTIFY displays the patient orthopedic treatment surface setup. While the patient is getting on the table and retrieving his or her perfect re-setup, the IDENTIFY monitor shows the patient, as if in a mirror, how to correct his/her orthopedic position. Augmented Reality Guidance combines the Surface captured at the Imaging Suite with the patient's own body in the Treatment Suite.

Self-positioning offers a set of benefits:

- Patient engagement raises perceived patient control and satisfaction.
- Clear color coding helps to educate the patient on the posture setup. Respiratory gating, in particular, is easily explained through the on-screen color feedback for appropriate chest level.
- The control over the positioning process decreases stress levels for the patients.
- The clear user-friendly interface is designed for an enhanced patient-centered treatment process.

An easy-to-understand color scheme depicts which parts of the body are out of position. When the patient is perfectly located, the surface color becomes transparent.



### IDENTIFY SURFACE

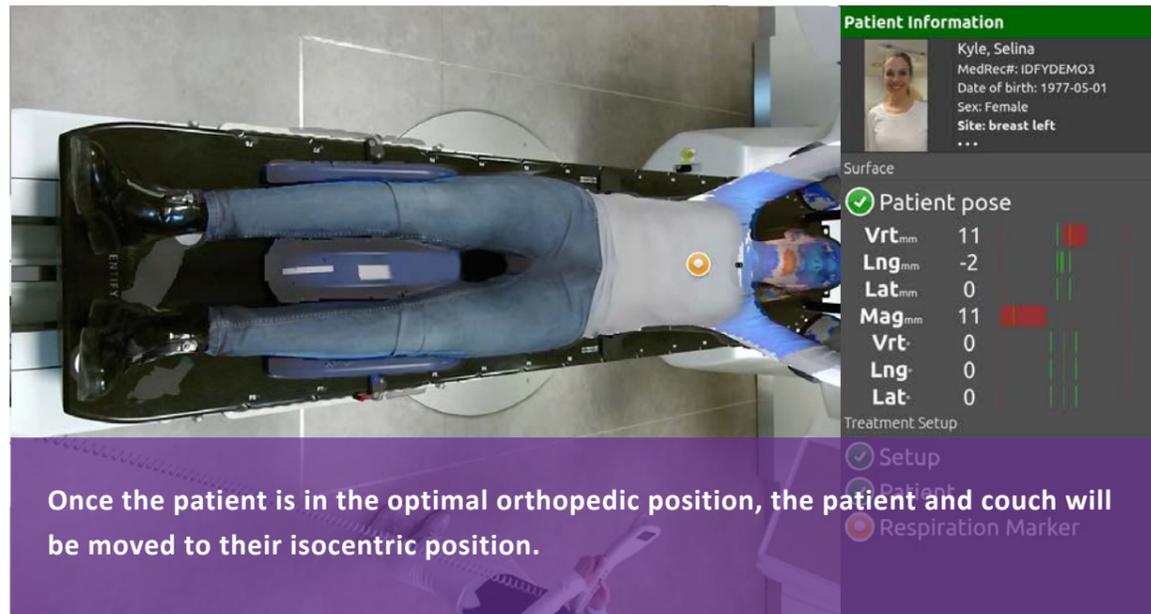
IDENTIFY SURFACE is humediQ's state of the art surface reconstruction solution. The patient's body surface is captured in treatment position in the Imaging Suite and patients are repositioned in the Treatment Suite to its baseline snapshot.

In combination with an optical respiratory marker, the orthopedic surface allows the therapist to reconstruct the respiratory signal of the patient in the exact same position – every time.



# 04

## Surface Guided Positioning at Isocenter



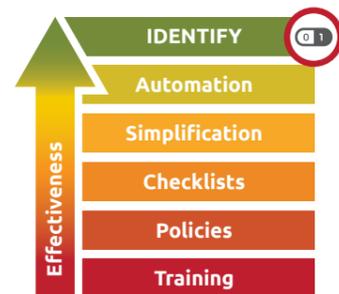
Once the patient is in the optimal orthopedic position, the patient and couch will be moved to their isocentric position.

### Guidance using 6 degrees of freedom

IDENTIFY guides the clinical staff to the ideal position at isocenter using 6 degrees of freedom. The interface displays simple instructions through color and numerical guidance, which results in more accurate initial positioning.

IDENTIFY supports TG147 requirements of Quality assurance for non radiographic radiotherapy localization and positioning systems, securing correct allocation of the patient in respect to isocenter within 2 mm accuracy.

When the perfect setup has been reached and confirmed, IDENTIFY releases the machine interlock, which allows for the beam to start. Simultaneously the Intra-Fraction Motion tracking is initiated. IDENTIFY's Surface Guided Positioning at isocenter enables you to implement a zero override culture for couch parameters.



### Highest Safety Standard

Distractions in busy clinics can potentially lead to errors. Interlock provides the highest safety standard. The IDENTIFY Interlock ensures that the treatment cannot start if the patient, location, or setup have not been confirmed.

# 05

## Surface Guided Intra-Fraction Motion Management

### Motion Monitoring

- Patient Surface is monitored for motion
- Marker on Patient can be used for Gating Techniques
- Unique, advanced Deep Inspiration Breath Hold Technique

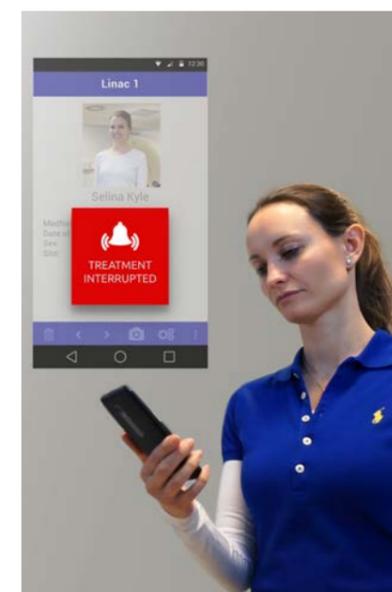
Our solution provides a unique opportunity to see your patient in relation to the initial setup during every second of their treatment.

Continuous monitoring of your patients using the state of the art IDENTIFY cameras is the next level of precision in radiotherapy. From Setup Confirmation, IDENTIFY monitors the patient position and shows the clinical staff the degree of motion.

IDENTIFY constantly tracks the ideal patient position. If the couch needs to be moved to allow for imaging or to prevent gantry collision between fields, IDENTIFY Intra-Fraction motion tracking ensures you always return the patient to the perfect position at isocenter.

IDENTIFY will also detect and can notify you if the patient has moved considerably enough to interrupt treatment. The change in position that otherwise might go unnoticed will be observed and reported by IDENTIFY.

IDENTIFY shows a clear representation of the patient posture changes so that it is easy to understand which part of the body must move or tilt to return the patient to an ideal setup. IDENTIFY helps you and the patient to maintain the ideal position during treatment.



Our seamless workflow allows therapists to perform intra-fraction motion tracking on every patient without adding to the treatment.

# 05

## Deep Inspiration Breath Hold

### DIBH & Respiratory Gating

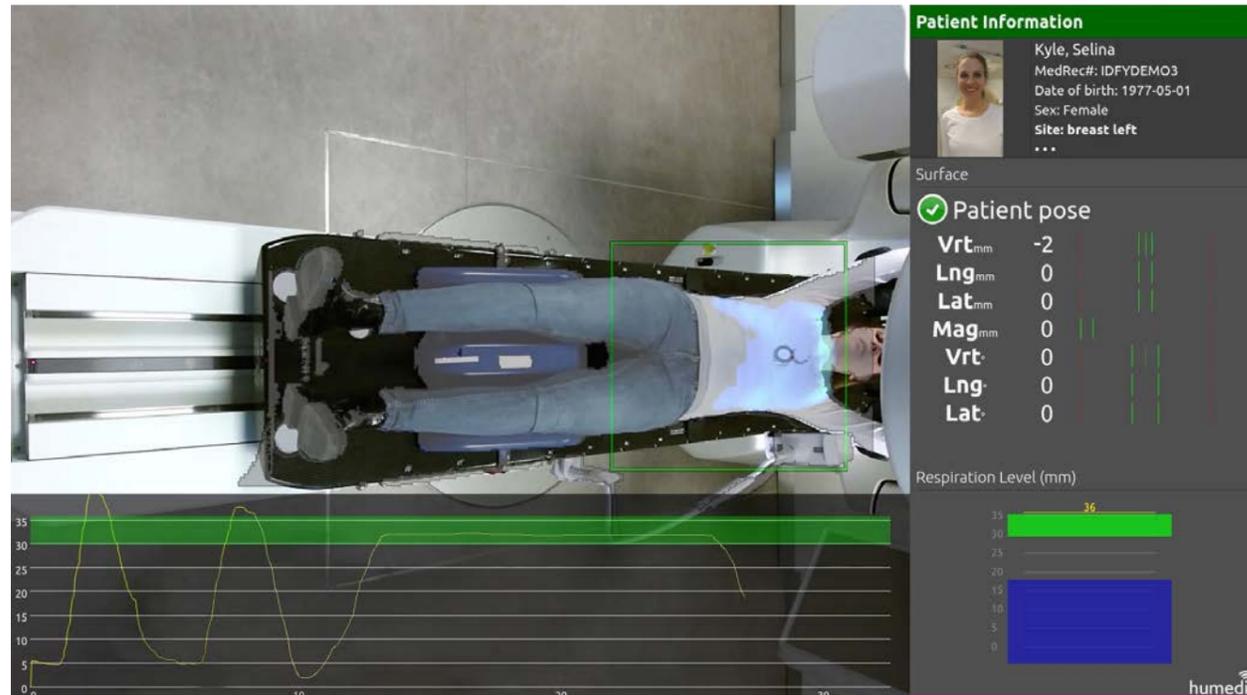
HumediQ is introducing a unique, innovative and integrated DIBH technology.

IDENTIFY provides a real-time marker based patient teaching and coaching function, visible to the patient on a couch-attached handheld device during imaging or treatment.

The coaching function allows the patient to stay more stably and for longer in their Deep Inspiration Breath Hold, thus increasing the quality of imaging and decreasing the overall treatment time. IDENTIFY's Surface Based DIBH tracking provides the clinical staff with clinically relevant information along the 6 degrees of measurement to guarantee a perfect DIBH treatment.

Using a 3D marker, deviation from the baseline is detected and treatment is interrupted if the configurable thresholds are exceeded.

Utilizing Augmented Reality Guidance, both care providers and patients play an active role in delivering this revolutionary treatment technique.



### Advantages of humediQ IDENTIFY DIBH

- Highly accurate combination of marker and marker-less technology
- The location of the 3D marker is recorded at the initial setup. During following fractions the augmented reality interface guides the radiotherapist to the right location of the marker, which ensures precise replication every time
- User-friendly interface, based on augmented reality guidance, combined with an advanced teaching and coaching mode allows for an easy, efficient patient involvement and shorter treatment times
- Unique marker based and Surface technology allows for the fastest video response rate, resulting in immediate notification of exit of breath hold target area
- Patient specific tolerance margins

Regions of interest can be selected and patient specific tolerances assigned to provide an ultimate, safe monitoring solution.

### DIBH Coaching Workflow

#### 1 In the Imaging Suite

- Place Marker on patient chest
- Enable Teaching mode to identify the amplitude of deep inspiration
- Select position of DIBH breathing band and size
- Patient uses the Coaching Mode to reproduce DIBH during Imaging Process

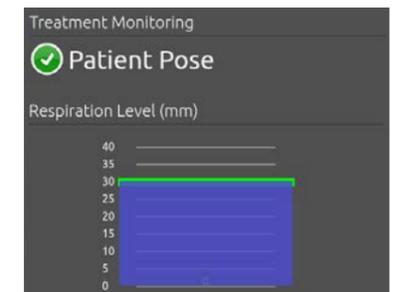


#### 2 In the Treatment Room

- Coaching handheld device is placed close to the patient's face
- The breathing level from the Imaging Suite coaches the patient on DIBH
- IDENTIFY Captures the DIBH surface

#### 3 Quality Establishment

- Breathing level combined with 6 degree spatial information will now provide ample information to perform a high quality DIBH treatment



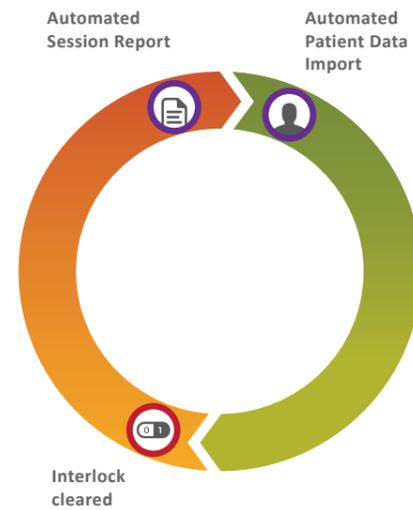
# 06 End of Treatment

## Automated session protocol

- Automated Session protocol exported to Oncology Information System
- Data can be accessed and analyzed for auditing and statistical purposes

Full information on setup and treatment - such as operator identity, exact session start and end time, setup photos, patient notes and complete patient data - is captured in an automatically generated non-editable PDF fraction protocol report that is relayed to the OIS patient chart after the session.

IDENTIFY ensures full circle data management, and ongoing documentation simplifies audit and quality management for your department. It will help you to track improvements in efficiency and quality of service brought by our system.



## Full circle quality assurance

IDENTIFY minimizes manual data entry through integration with OIS. IDENTIFY supports a “zero override” culture: even though overrides are allowed, they are recorded and reported.

At the end of each session a PDF document is generated to ensure the easiest documentation flow.

TG147 Compliant

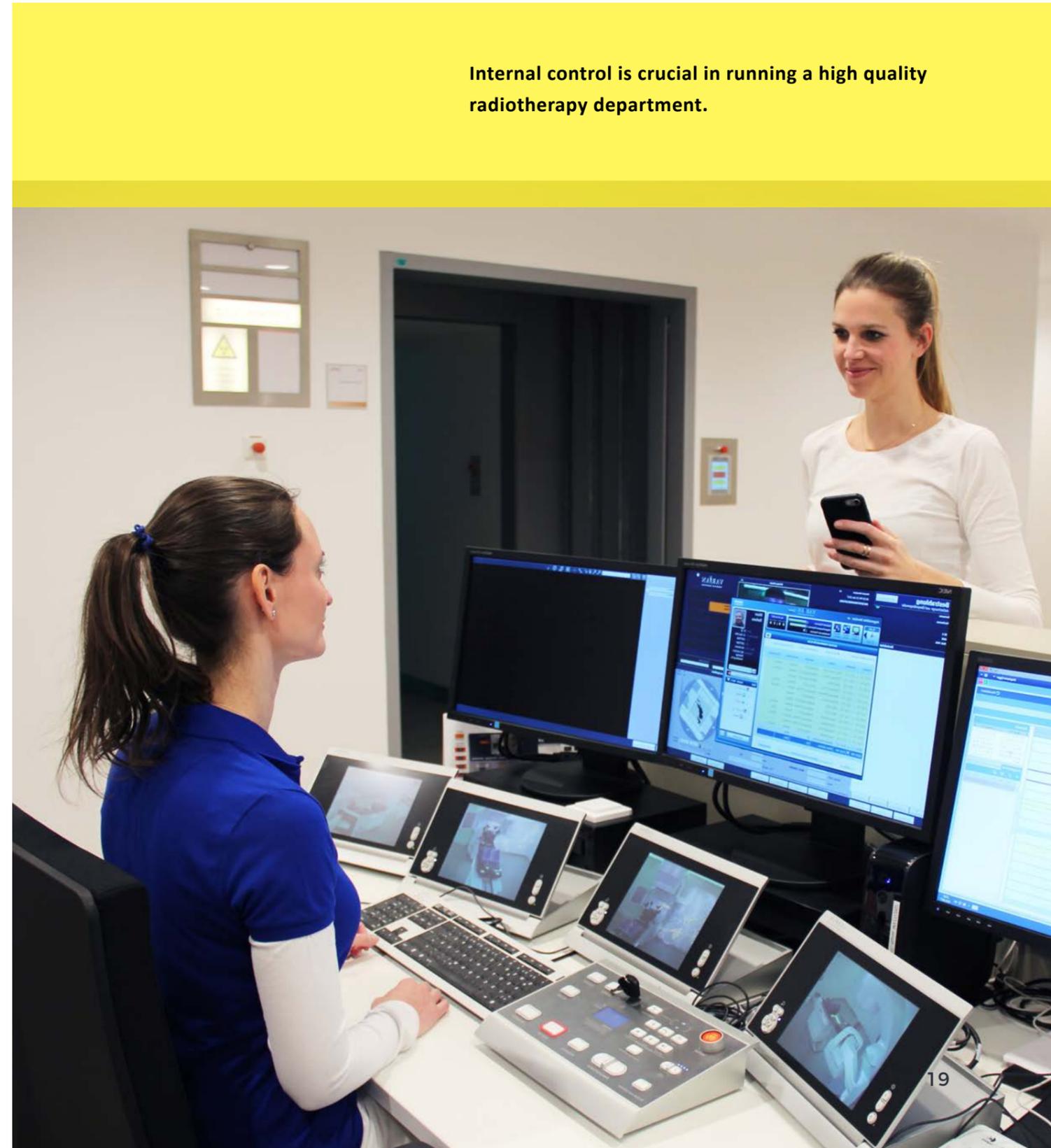
Auditable Processes

Zero Overrides

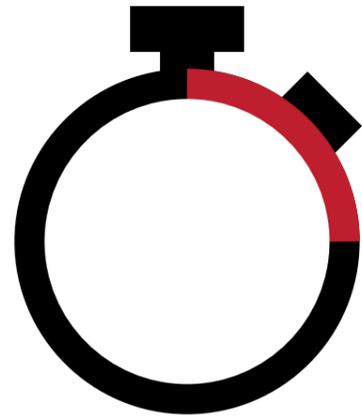
Minimal Manual Data Entry

Automated Session Protocols

Internal control is crucial in running a high quality radiotherapy department.



# Your Success with IDENTIFY



## MAXIMIZE SAFETY & EFFICIENCY

Reduce the time required for perfect patient setup.  
 Avoid multiple confirmation Cone Beam CTs.  
 Go paperless, from auto-setup notes through to automated session reports.  
 Easy to use: the same user interface on all machines.

- Time-out Procedures
- LEAN Processes
- Time Stamps
- Paper-free Workflows
- Easy to Train & Introduce to the New Staff

## PATIENT CENTERED

The IDENTIFY solution places the patient at the center of your attention.

Patient self-positioning, through a highly intuitive user interface and color coding, significantly increases patient engagement and satisfaction.



- Patient Satisfaction
- Confidence
- Reduction of Permanent Tattoos
- Reduction of Confirmation CBCT
- Patient Involvement

The World Health Organization (WHO) has published the Technical Manual for Radiotherapy Risk Profile. The manual is based on a complex and holistic analysis of adverse reported accidents during radiotherapy treatments. The goal of the study was to identify common risks during each step in the treatment process. As it is often said, success is more likely when one is well equipped. With IDENTIFY we seek to mitigate the risk to assist you in your everyday duty.

Risk	Potential impact	Suggested solution by WHO	Solution by IDENTIFY
Incorrect identification of patient	High	ID check open questions, Eliciting an active response as a minimum 3 points of ID Photo ID	<ul style="list-style-type: none"> <li>- Patient identification through unique hand vein profile scan with Palm ID or RFID</li> <li>- System integration with Oncology Information System</li> <li>- Patient photo display for additional verification</li> </ul>
Wrong side of body (left/right)	High	Independent checking and aids to setup	<ul style="list-style-type: none"> <li>- Full body patient surface verification for exact positioning head to toe</li> </ul>
Manual data entry	Medium	Automated data transfer In vivo dosimetry	<ul style="list-style-type: none"> <li>- Automatic transfer of patient data from Oncology Information System</li> <li>- Automated setup checklists</li> <li>- Workflow verification through One-Click-Confirmation</li> <li>- Automatic generation of treatment report and upload to the Oncology information system</li> </ul>
Wrong position	High	Independent checking and aids to setup	<ul style="list-style-type: none"> <li>- Automatic capture of immobilization devices and their position at the planning stage</li> <li>- Interlock in case of incorrect setup</li> <li>- Augmented reality guidance for correct setup</li> <li>- Self-positioning of the patient through surface guidance</li> <li>- Reproducibility of correct setup: patient, accessory and posture verification through IDENTIFY</li> </ul>
Incorrect isocenter	High		
Wrong immobilization devices	Medium		
Incorrect treatment equipment accessories	High		
Incorrect use or omission of accessories	High		
Missing Bolus	High		
Unnecessarily complex setup limiting reproducibility	High	Machine protocol check Treatment protocols Peer review audit	<ul style="list-style-type: none"> <li>- Automated identification of patient and accessories</li> <li>- Automated checklists and One-Click-Confirmation setup</li> <li>- Automated treatment report generation</li> </ul>
Patient changing position during setup	High	Visual monitoring during treatment	<ul style="list-style-type: none"> <li>- Ongoing 3D surface monitoring with fast response cameras</li> <li>- Notifications to clinical staff in case patient moved out of predefined tolerance</li> <li>- Regions of interest establishment and tolerance levels assignment</li> <li>- LINAC interlock to provide ultimate, safe patient monitoring solution</li> </ul>

# Upgrade features for seamless integration



With integration of IDENTIFY Room Surveillance you can communicate all the important information when it is needed the most. Walls are not a boundary anymore!



## IDENTIFY Room Surveillance

Our Room Surveillance system consist of 2 surveillance cameras in the treatment room, microphone and speaker in both treatment and control rooms and a monitor at the treatment console.

This add-on to IDENTIFY system enables you to monitor and communicate with the patient during treatment. You can provide immediate feedback and instructions to the patient that can be critical during radiation treatment.

Patients, on the other hand, can benefit from much needed reassurance and peace of mind during treatment.

# Upgrade features for seamless integration



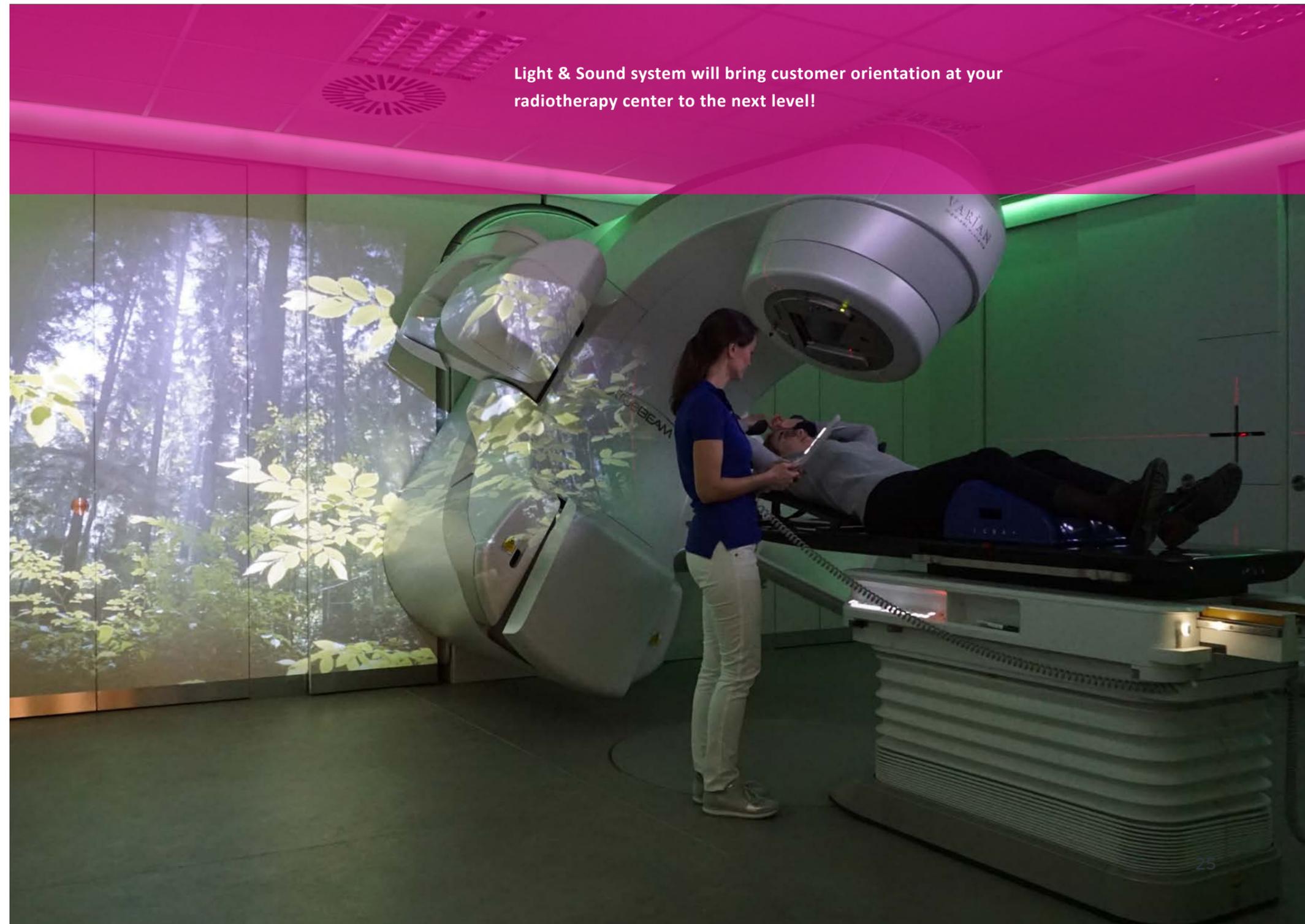
## Light & Sound

Our goal is to significantly improve everyday routine and well-being of both clinicians and patients. This is why we develop innovative solutions that can bring a positive change to the treatment process.

The relaxed state of the patient is helpful in reaching convenient and easy to hold posture during the setup.

With IDENTIFY Light & Sound solution a patient can choose personalized mood and feel of the treatment room.

Patients entering the room can verify the identity through PALM ID. Should the identification be positive, the device will switch to the individual light and sound theme that patient had selected previously. The sound will match the light motif with relaxing meditative melodies.



# Why I ❤️ IDENTIFY



## Radiotherapy Technician

- EASY SET-UP: patient contributes to self-positioning
- AUTODOCUMENTATION: shows that you did everything right
- BETTER RELATIONSHIP: patient understands the technician's job
- EASY to change shifts or fill in for colleagues



## Radiotherapy Physicist

- EASY SET-UP: patient contributes to self-positioning
- AUTOMATED MORNING CHECK
- AUTODOCUMENTATION: shows that you did everything right
- REDUCES counter-checking between functions
- DIGITAL BUDDY-CHECK: make NO mistakes



## Radiation Oncologist

- QUALITY ASSURED PROCESS
- HIGHER RESOURCE EFFICIENCY
- EASY LOGISTICS: location, time optimization and information sharing
- REDUCES counter-checking between functions
- PEACE OF MIND: lower risk of technicians mistakes



## Patient

- FEELS SAFER
- QUALITY ASSURED PROCESS
- BETTER TREATMENT UNDERSTANDING
- LESS WAITING TIME
- FEELS TAKEN CARE OF



## Hospital CEO

- HIGHER RESOURCE EFFICIENCY
- QUALITY ASSURED PROCESS
- LOWER RISK PROFILE
- REDUCES counter-checking between functions
- EFFICIENT BUDDYCHECKING

“Our comprehensive patient positioning and monitoring solution is designed with patients at heart. Efficiency and ease of operation of our product will definitely have a positive effect on the workflow of our partners.”

Christian Hieronimi,  
CEO at HUMEDIQ Global

