# IDENTIFY

THE NEXT STANDARD
OF CARE

**S³GRT**

SIMPLE
SAFE GUIDED RADIATION THERAPY
SURFACE

humediQ

# IDENTIFY
## THE NEXT STANDARD OF CARE

IDENTIFY is an automated patient identification, positioning and motion management solution with an unparalleled user interface. It provides a **Safe**, transparent and efficient patient-centric workflow, ensuring maximum cooperation between the patient and the therapist. IDENTIFY is a non-invasive single solution that **Simplifies** and 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, through **Surface** Guidance, the patient for movement throughout the entire treatment session. IDENTIFY is a great, affordable, solution to perform Deep Inspiration Breath Hold (DIBH) and other complex treatment techniques.

**S³GRT**   SIMPLE
**SAFE** GUIDED RADIATION THERAPY
SURFACE

# S<sup>3</sup>GRT

## SURFACE

✓ Patient Positioning
✓ Intra Fraction Motion Management
✓ Gating and audible motion alert
✓ DICOM compatible
✓ Deep Inspiration Breath Hold
✓ Sub mm Accuracy
✓ Full Body/Orthopedic Position Verification

IDENTIFY is the only system on the market that allows for full head-to-toe orthopedic surface capture and reproduction. Our highly accurate SGRT cameras assist in easy and fast patient positioning at isocenter. Capable of streaming high-definition video at high speed, IDENTIFY provides the fastest technologically advanced SGRT system available on the market today.

## SAFE

✓ Patient ID Verification
✓ OIS Integration
✓ Automated Accessory Verification
✓ Automated Accessory Position Verification
✓ Alternating Bolus Verification

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.

## SIMPLE

✓ Augmented Reality View
✓ Patient Queuing
✓ Automated Reporting
✓ Light & Sound Integration
✓ PTZ Camera Integration

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.
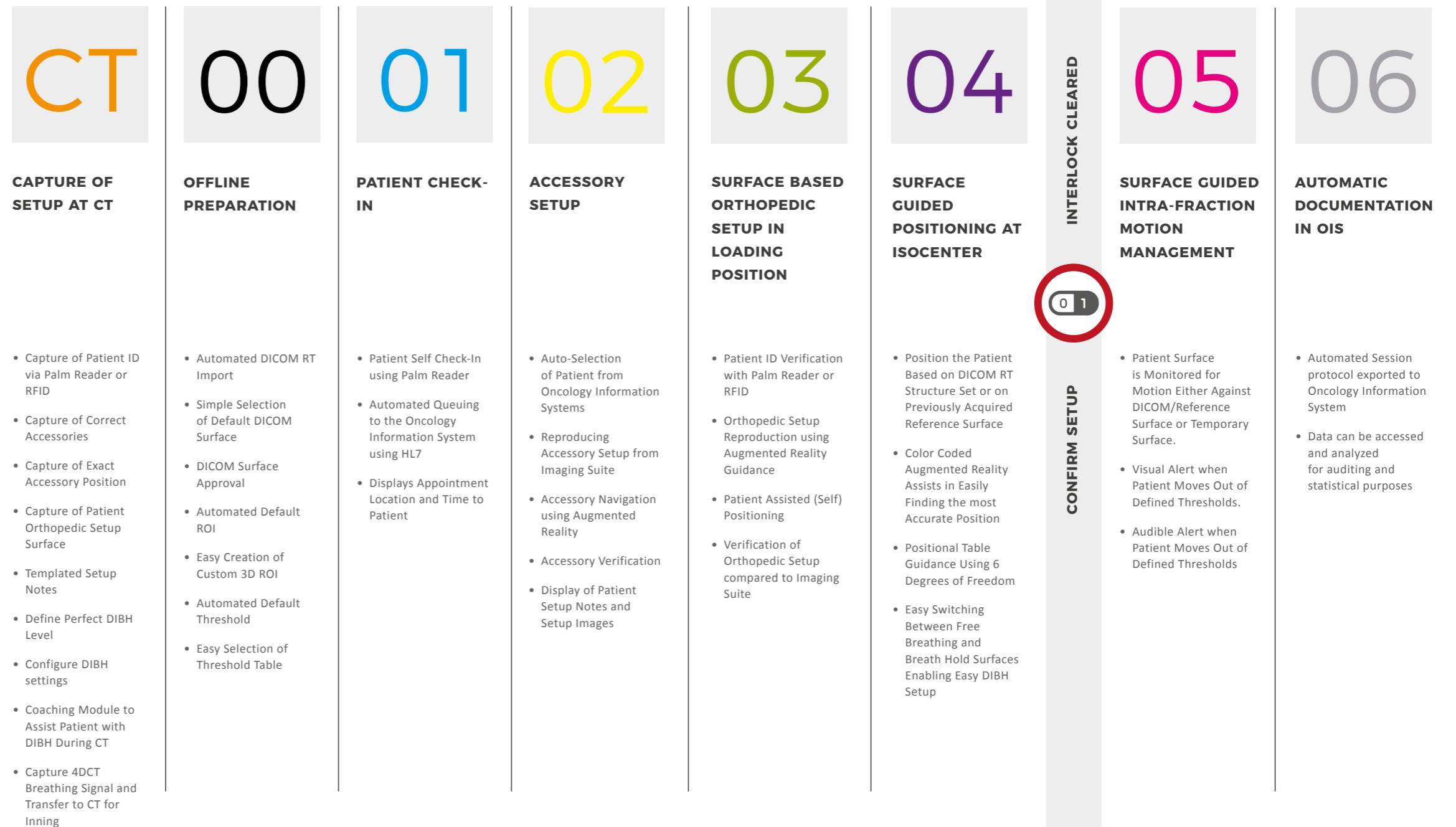
# Surface Guided Technology with Multiple Applications

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 uses a DICOM RT surface to position the patient. It also allows you to capture 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 continuously monitors this surface for patient motion during treatment delivery.

**Maximizes patient and staff satisfaction!**

# IDENTIFY Automated Time-Out Workflow

## CT — 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
- Templated Setup Notes
- Define Perfect DIBH Level
- Configure DIBH settings
- Coaching Module to Assist Patient with DIBH During CT
- Capture 4DCT Breathing Signal and Transfer to CT for Inning

## 00 — OFFLINE PREPARATION

- Automated DICOM RT Import
- Simple Selection of Default DICOM Surface
- DICOM Surface Approval
- Automated Default ROI
- Easy Creation of Custom 3D ROI
- Automated Default Threshold
- Easy Selection of Threshold Table

## 01 — PATIENT CHECK-IN

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

## 02 — ACCESSORY SETUP

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

## 03 — SURFACE BASED ORTHOPEDIC SETUP IN LOADING POSITION

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

## 04 — SURFACE GUIDED POSITIONING AT ISOCENTER

- Position the Patient Based on DICOM RT Structure Set or on Previously Acquired Reference Surface
- Color Coded Augmented Reality Assists in Easily Finding the most Accurate Position
- Positional Table Guidance Using 6 Degrees of Freedom
- Easy Switching Between Free Breathing and Breath Hold Surfaces Enabling Easy DIBH Setup

**INTERLOCK CLEARED**

**CONFIRM SETUP**

## 05 — SURFACE GUIDED INTRA-FRACTION MOTION MANAGEMENT

- Patient Surface is Monitored for Motion Either Against DICOM/Reference Surface or Temporary Surface.
- Visual Alert when Patient Moves Out of Defined Thresholds.
- Audible Alert when Patient Moves Out of Defined Thresholds

## 06 — AUTOMATIC DOCUMENTATION IN OIS

- 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
- Templated Setup Notes
- Define Perfect DIBH Level
- Configure DIBH settings
- Coaching Module to Assist Patient with DIBH During CT
- Capture 4DCT Breathing Signal and Transfer to CT for Inning

This entire sequence is accomplished with simple clicks on a handheld device.

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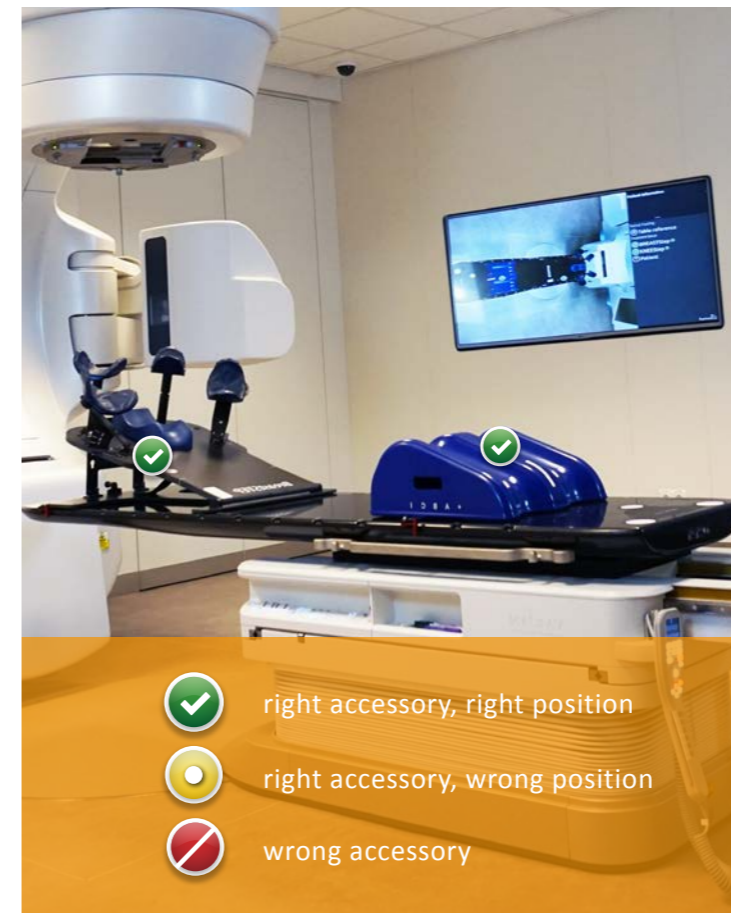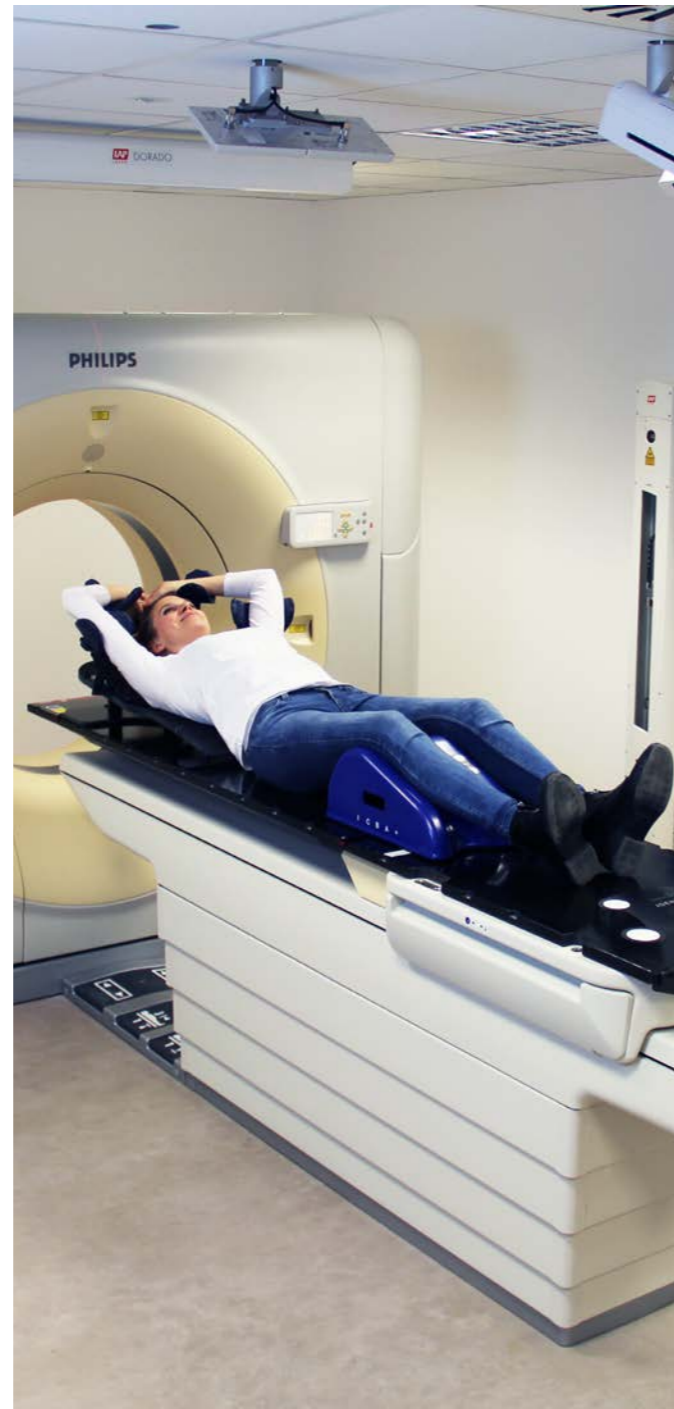




right accessory, right position

right accessory, wrong position

wrong accessory

### 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. Our Palm reader swiftly verifies the identity of the patient through a scan of the veins in the patient's hand. This process is much faster and accurate than facial recognition or iris scans.

#### 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.

# 00
# Offline Preparation
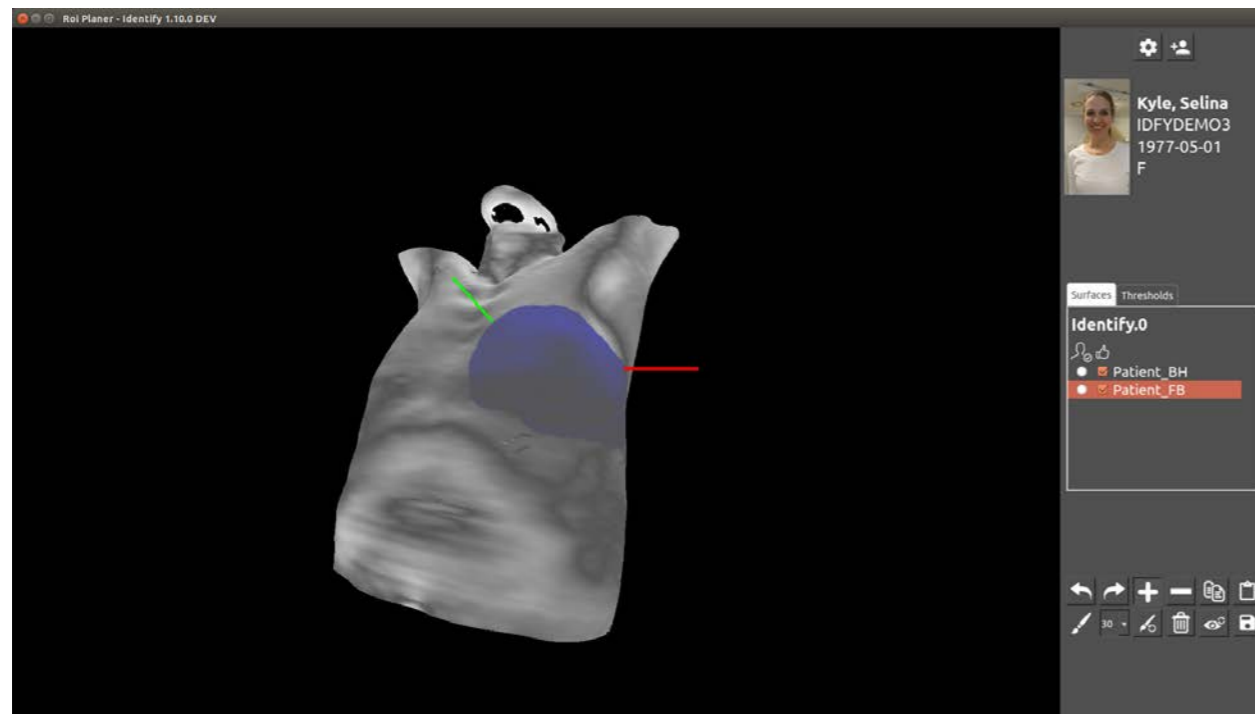


## Easy and Fast Offline Preparation

- Automated DICOM RT Import

- Simple Selection of Default DICOM Surface

- DICOM Surface Approval

- Automated Default ROI

- Easy Creation of Custom 3D ROI

- Automated Default Threshold

- Easy Selection of Threshold Table

The Treatment Planning exported RT Structure Set and RT Plan Data is automatically imported into IDENTIFY. Using our intuitive off-line platform, which can be installed on virtually any Windows PC in the department, you can easily:

- Optionally, approve imported DICOM Data sets

- Select which Reference Surface you'd like to use as default upon couch movement to isocenter

- Create, erase or delete your region of interest using a 360 degree view

- Select preset tolerance or threshold tables based on the Rx Site or the Treatment technique

These actions are effortlessly done utilizing the left, middle and right mouse buttons.



**The Treatment Planning exported RT Structure Set and RT Plan Data is automatically imported in to IDENTIFY.**

# 01
# Patient Check-In

## At the Waiting Room

- Patient Self Check-In using Palm Reader
- Automated Queuing to the Oncology Information System using HL7
- Displays Appointment Location and Time to Patient
- Replaces systems where barcodes are easily misplaced or lost

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

Since IDENTIFY is integrated with all the popular Oncology Information Systems, the patient can now queue themselves in at the reception desk, without the help of any staff member, and appointment details will be shared on the digital display.

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

Hello
**Selina Kyle**

Your appointment today will be in
**Linac 1**
at
**10:45**

10:32

**When the right patient is recognized in the Treatment Suite, the system shows patient data and orthopedic setup guidance.**

Patient Information
Kyle, Selina
MedRec#: IDFYDEMO3
Date of birth: 1977-05-01
Sex: Female
Site: breast left

Treatment Setup
Setup
Patient

humediQ

### 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 Accessory Setup from Imaging Suite
- Accessory Navigation using Augmented Reality
- Accessory Verification
- Display of Patient Setup Notes and Setup Images
- Alternating Bolus
- Layered Accessories



IDENTIFY
Alt. Bolus 3mm
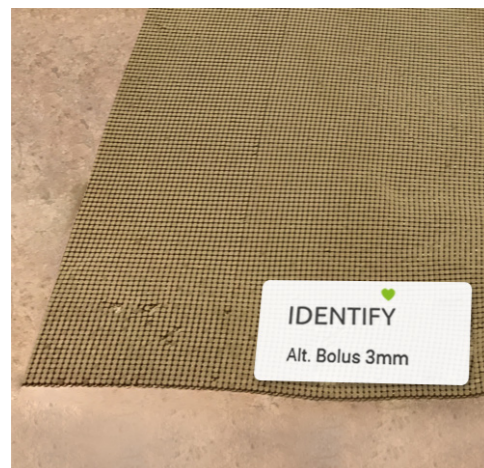
With IDENTIFY's augmented reality user experience, the therapist can quickly place correct accessories in the correct position, reproducing precisely the initial setup in the imaging suite. The clinical staff no longer needs to scan barcodes or go through the accessory checklists, which saves valuable 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. The experience is completely non-invasive. IDENTIFY is fully automated, and it informs the therapist in the background without needing physical interaction with the system.

## Alternating Bolus

Is today a bolus or non-bolus day? It's a tedious process that normally is manually tracked in the OIS and 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. This eliminates mistakes and increases efficiency and confidence in your quality processes.

## Layered Accessories

IDENTIFY verifies accessories as they are introduced 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 and a fluid, efficient workflow.

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

# 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 (Self)Positioning

- Verification of Orthopedic Setup compared to Imaging Suite

As soon as the RIGHT patient is recognized, IDENTIFY displays the patient orthopedic treatment surface setup that was captured in the imaging suite or as a reference in the treatment suite. While the patient is getting comfortable on the couch, the IDENTIFY wall screen and optional ceiling monitor shows the patient, as if in a mirror, how to correct his/her orthopedic position. Augmented Reality Guidance combines the Reference 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.

- Since the patient is able to position themselves, the clinical staff will need to perform fewer corrections through lifting of the patient, resulting in better Occupational Health and Safety.

- Patient Self Positioning saves time and allows for more quality time with your patient.

**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.**

# 04
# Surface Guided Positioning at Isocenter

## Guidance using 6 degrees of freedom

- Position the Patient Based on DICOM RT Structure Set or on Previously Acquired Reference Surface

- Color Coded Augmented Reality Assists in Easily Finding the most Accurate Position

- Positional Table Guidance Using 6 Degrees of Freedom

- Easy Switching Between Free Breathing and Breath Hold Surfaces Enabling Easy DIBH Setup

IDENTIFY guides the clinical staff to the ideal position at isocenter using DICOM RT Structure Set Data or a Reference Surface. The setup is guided by the 6 degrees of freedom. The interface displays simple instructions through color and numerical guidance, which results in more accurate initial positioning.

IDENTIFY's structured light cameras are submillimeter accurate supports and exceed the TG147 requirements of Quality Assurance for non radiographic radiotherapy localization and positioning systems, which is defined as 2mm tolerance for non SRS motion tracking and 1mm for SRS motion tracking.

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, tracking patient motion for EVERY patient. IDENTIFY's Surface Guided Positioning at isocenter, in combination with the accessory navigation, enables you to implement a zero override culture for couch parameters.

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

## 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 'digitally verified'.**
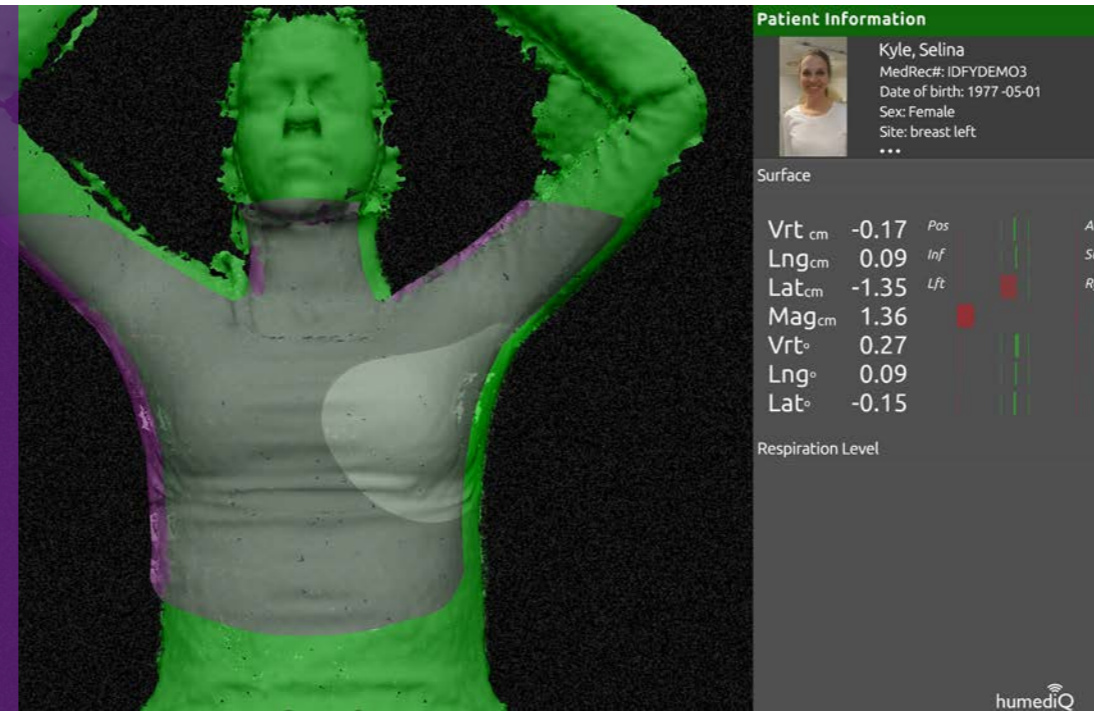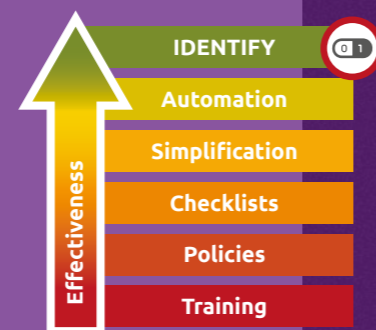


## IDENTIFY SGRT CAMERAS

- Sub-mm accurate (<0.5mm)

- Up to 10 frames per second

- Projector color is a soft blue and non-invasive during setup. It does not interfere with green and red lasers and can be used in parallel.

- Cameras work well on darker skin

- No skin blur effect

- Projector can be paused from handheld, if necessary

- Automated DICOM RT Plan and Structure Set import and association with patient.

- Easy capture and selection of Free Breathing, DIBH surfaces or DICOM structure sets.

- Fast and intuitive 1-touch Intra-Fraction Motion Management for EVERY Patient

- IDENTIFY automatically switches to IDENTIFY SGRT cameras when couch moves out of loading position

- Allows for easy positioning using DICOM dataset as reference surface

- Allows for smooth and accurate DIBH treatments

- Can be used with or without bolus

# 05
# Surface Guided Intra-Fraction Motion Management



## Constantly Tracking the Ideal Patient Position

- Patient Surface is Monitored for Motion Either Against DICOM/Reference Surface or Temporary Surface.

- Visual Alert when Patient Moves Out of Defined Thresholds.

- Audible Alert when Patient Moves Out of Defined Thresholds.

Continuous monitoring of your patients using the state of the art, highly accurate, IDENTIFY SGRT 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 centered 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 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.

In the United States, reimbursement code G6017 can be used to charge for intra-fraction motion tracking under specific circumstances. Contact your HUMEDIQ clinical director for more details.
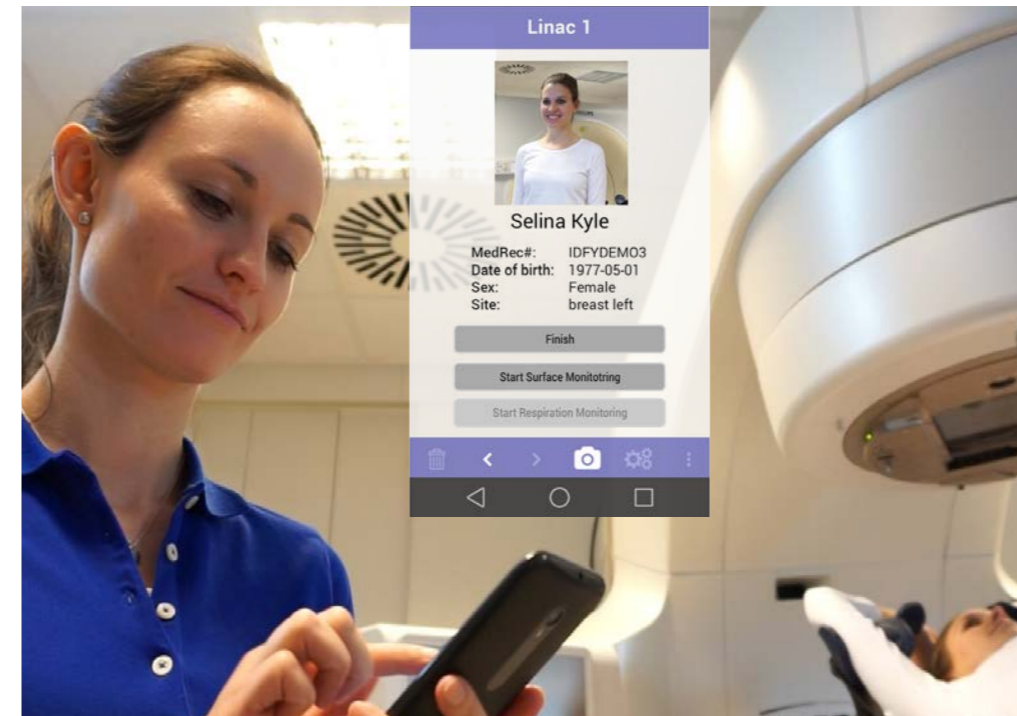


**Our seamless workflow allows therapists to perform intra-fraction motion tracking on every patient without adding to the treatment setup time.**
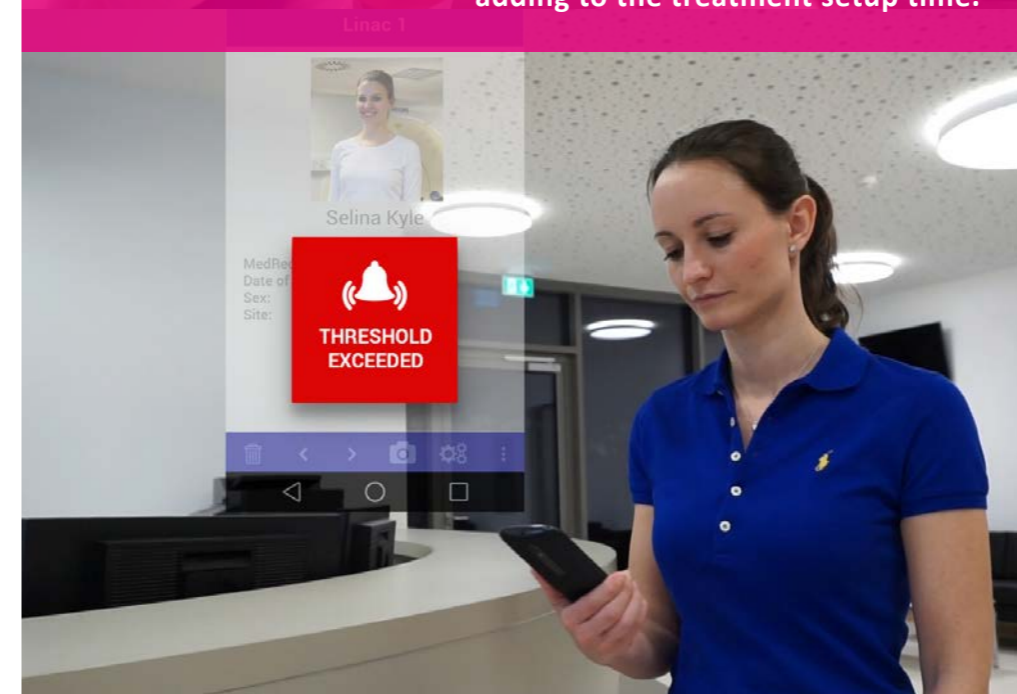


## Motion Monitoring

IDENTIFY provides a unique opportunity to see your patient in relation to the initial setup during every moment of their treatment.

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 both visually and by using an audible alert. This will allow your clinical staff to determine whether any action is required.

# 05
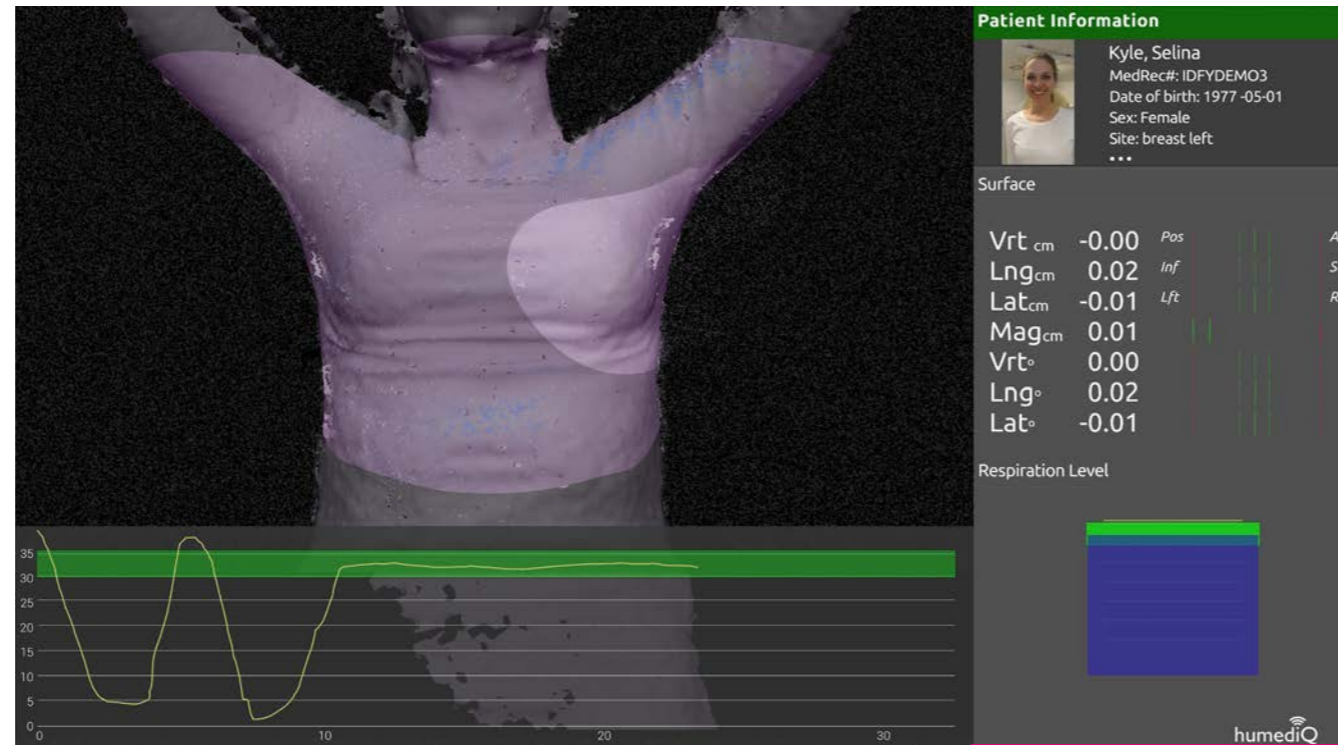# Deep Inspiration Breath Hold

## DIBH & Respiratory Gating

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

After the patient is set up in Free Breathing, the Reference Surface is easily switched to the DIBH DICOM RT Structure Set. Using IDENTIFY's real-time coaching module, visible to the patient on a couch-attached handheld device during imaging or treatment, the patient knows exactly how to reproduce her breath hold. The use of a coaching module, rather than solely depending on audible instructions, allows for the patients to hold their breath longer, shorten treatment times and increase the quality of imaging.

IDENTIFY's Surface Based DIBH tracking provides the clinical staff with clinically relevant information along the 6 degrees of Freedom (6DOF).

In addition to the 6DOF, IDENTIFY also provides Augmented Reality Guidance on whether the patient is arching their back or is breathing in a way that is inconsistent with the time of imaging.

The combination of 6DOF and Color Coded Augmented Reality Guidance guarantee a perfect DIBH treatment.



### Patient Information

Kyle, Selina
MedRec#: IDFYDEMO3
Date of birth: 1977-05-01
Sex: Female
Site: breast left
...

Surface

| | | | |
|---|---|---|---|
| Vrt cm | -0.00 | Pos | Ant |
| Lng cm | 0.02 | Inf | Sup |
| Lat cm | -0.01 | Lft | Rgt |
| Mag cm | 0.01 | | |
| Vrt ° | 0.00 | | |
| Lng ° | 0.02 | | |
| Lat ° | -0.01 | | |

Respiration Level

## Advantages of HUMEDIQ IDENTIFY DIBH

- Highly accurate, surface guided technology using DICOM RT Structure Set and DICOM RT Plan

- User-friendly interface, based on augmented reality guidance, combined with an advanced coaching mode allows for an easy, efficient patient involvement and shorter treatment times

- IDENTIFY;s proprietary Surface technology and algorithms allow 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

- Scan the patient in Deep Inspiration Breath Hold using IDENTIFY's respiratory management and coaching module or any other technology that allows you to ensure the patient is in the perfect Breath Hold.

- Configure the breath hold level and breath hold tolerance in IDENTIFY

- At Treatment Planning, contour the body outline on the DIBH CT set, plan the DIBH treatment and export to IDENTIFY.



### 2 In the Treatment Room

- Coaching handheld device is placed close to the patient's face

- The breathing level is defined as the outline of the DIBH DICOM RT Structure set and the breath hold tolerance from the Imaging Suite is used to coach the patient on the ideal Breath Hold.



### 3 Quality Establishment

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

- Augmented Reality Guidance provides the clinical staff with additional data to ensure the patient is not arching or breathing in a different way
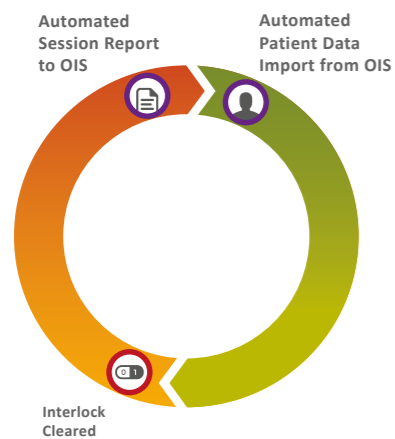
# 06
# Automatic Documentation in OIS
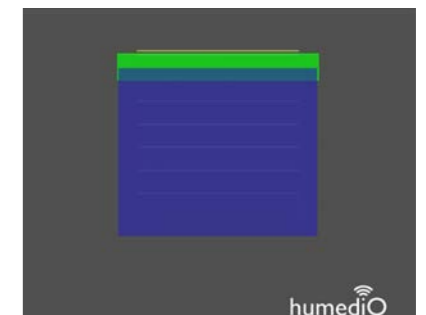
## Automated Session Protocol

- 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, patient movement statistics and screenshots of breathing phases - are captured in an automatically generated non-editable PDF report that is automatically relayed, at the end of each session, to the patient record in the OIS system. No therapist intervention is needed.

A 'Sessions to Date' summary in each report allows for only the latest report to be reviewed.

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.

**Automated Session Report to OIS**

**Automated Patient Data Import from OIS**

**Interlock Cleared**

# Your Success with IDENTIFY

## Radiation Therapy Treatment Deviations Potentially Prevented by a Novel Combined Radio-Frequency Identification (RFID), Biometric and Surface Matching Technology

Hui Zhao, Y. Jessica Huang, Vikren Sarkar, Prema Rassiah-Szegedi, Frances Su, Martin Szegedi, Long Huang, Adam Paxton, Bill J. Salter

University of Utah, Salt Lake City, UT

### INNOVATION/IMPACT

We believe this to be a first evaluation of a novel combined RFID, biometric and surface matching technology (Identify, HumediQ, Munich, Germany) on potential for prevention of radiation therapy treatment deviations.

### INTRODUCTION: HUMEDIQ IDENTIFY

The **Identify** technology (HumediQ, Munich, Germany) combines Radio-Frequency Identification (RFID), biometric and surface matching techniques with the intent of improving the safety and efficiency of patient setup and treatment.

The typical Identify workflow in CT SIMULATION entails:
  *a) Biometric authentication*- patient face photo and palm image acquisition
  *b) Setup device(s) capture* - capture of all treatment device's "presence" on couch via RFID, and position/orientation via video acquisition
  *c) Capture of patient setup position/orientation* - via video surface capture

Typical Identify workflow in the LINAC TREATMENT SUITE includes:
  a) Verification of correct patient identification via patient photo and biometric (palm) verification
  b) Verification of patient-setup-devices' presence on treatment couch, and correct position/orientation
  c) Verification of correct patient *loading* orientation via body surface verification
  d) Capture/Verification of correct patient *treatment* position/orientation using video surface capture
  e) Monitoring of patient motion during treatment.

### METHOD

108 radiation therapy treatment deviations recorded at our facility over the past 8 years were analyzed. The impact of HumediQ Identify on potential prevention of machine-related treatment deviations was analyzed.

### RESULTS

**Table 1** tallies treatment deviations, including near misses, at our facility over the last eight years (1/2009 to 1/2017). Among the total 108 patient-involved treatment deviations, three major categories are defined: Physician Order deviations, treatment planning deviations, and machine-related treatment deviations. Physician order deviations include deviations from clinical orders such as port approval before treatment, V-sim-and-TX vs V-sim only, physician's imaging instructions, request for pacemaker measurement, IMRT QA before treatment, and physician's special instruction requests throughout the course of treatment. Treatment planning deviations include deviations from the treatment planning process, such as planning on the wrong machine, dose/MU calculated with wrong SSD or field size, planning with energy different from prescription, planned beams without treatment machine clearance, and treatment calendar setup error. Machine treatment deviations included missing treatment accessories (bolus, cerrobend block, mouth guard, etc.), use of wrong treatment accessories, treatment at wrong SSD, treatment at wrong isocenter position, treatment with wrong collimator angles, treatment with the wrong site setup instructions among multi-sites and treatment of wrong patient / wrong plan.

There were 61 machine-related treatment deviations (56.5% of all deviations) at our facility in the past eight years, and 48 of these deviations (78.7%) were interpreted as being LIKELY PREVENTED by using the current version of HumediQ Identify software (version 2.0).

Table 1. Treatment deviations at our facility from 1/2009 to 1/2017

| Category | Number | Percentage |
|---|---|---|
| Physician order deviation | 21 | 19.4% |
| Treatment planning deviation | 26 | 24.1% |
| Machine treatment deviation | 61 | 56.5% |
| Total | 108 | 100% |

Table 2. The **potential** impact of HumediQ Identify on prevention of machine treatment deviations

| Deviation prevented by HumediQ Identify | Number | Percentage |
|---|---|---|
| Likely | 48 | 78.7% |
| Not likely | 13 | 21.3% |
| Total | 61 | 100% |

We retrospectively assessed the potential of HumediQ Idnetify technology to prevent the MACHINE-related treatment deviations we experienced over this 8-year time frame. **Table 2** shows the breakdown of errors that, in our estimation, would have been a) LIKELY PREVENTED or b) LIKELY NOT Prevented. Combined face photo and biometric (palm identification) was seen as an improvement over the previous patient ID procedure of face photo and date of birth, especially for non-English speaking patients. The addition of the Biometric component of patient ID was seen as less vulnerable to human error. RFID verification of patient-specific setup devices included the verification of immobilization and accessory devices and their correct position on the treatment couch. This direct verification approach was regarded as superior to the previous process of assuming that the therapists had followed the Setup Instructions correctly, and was viewed as being capable of eliminating the Treatment Accessory deviations.

Accurate initial patient position and orientation at loading position was accomplished by patient self-positioning according to color-coded video feedback agreement of real-time surface with Simulation surface (ceiling mounted screen). This direct surface matching between CT simulation and treatment loading position eliminates deviations of patient treatment posture. Patient treatment-surface body position is subsequently captured after imaging, and monitored for changes/motion during treatment delivery. The treatment position surface monitoring was seen as capable of preventing day to day treatment position deviations, such as treatment at wrong SSD and wrong shifts from setup position to ...

### CONCLUSIONS

79% of our previous Machine-related treatment deviations were regarded as preventable by the current version of HumediQ Identify.

### REFERENCES

http://humediq.com/index.php

## "79% of our previous machine-related treatment deviations were regarded as preventable by the current version of HUMEDIQ Identify"

## So Much More than SGRT

The Huntsman Cancer Institute at the University of Utah partnered with HUMEDIQ based on a vision that IDENTIFY could provide increased safety and workflow efficiencies. Based on a historic review of 8 years of detailed treatment deviation data, researchers found that IDENTIFY likely would have prevented 79% of all machine related treatment deviations. This would represent a reduction of 44% of the institution's total annual treatment deviations.

## International Safety Standards

IDENTIFY does not only provide exceptional SGRT functionality but also provides additional safety features as recommended by TG-100 (Application of risk analysis methods to radiation therapy quality management) and achieves many of the objectives and uses of AAMI standards and recommended practices as documented in the 'AAMI RT2:2017 Radiation Therapy Readiness Checklist' guidelines. (AAMI: Association for the Advancement of Medical Instrumentation).Members of the AAMI Radiation Therapy Committee include Varian, Elekta, Mevion, Accuray, Brainlab, IBA, Philips and several others.

# 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.

Scientific papers have shown that relaxation has an impact on patient positioning. To the patient, the treatment machine can be very daunting and stressful. Getting the patient to a relaxed state is helpful in reaching convenient and easy to hold posture during the setup.

With IDENTIFY Light & Sound solution a patient can choose a personalized theme for the treatment room.

Patients entering the room verify their identity through PALM ID. This will trigger the individual light and sound theme the patient had selected previously. The sound will match the visual experience with relaxing meditative melodies.

## IDENTIFY Room Surveillance

Our Room Surveillance system consists 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.

**Light & Sound system will bring customer satisfaction at your radiotherapy center to the next level!**
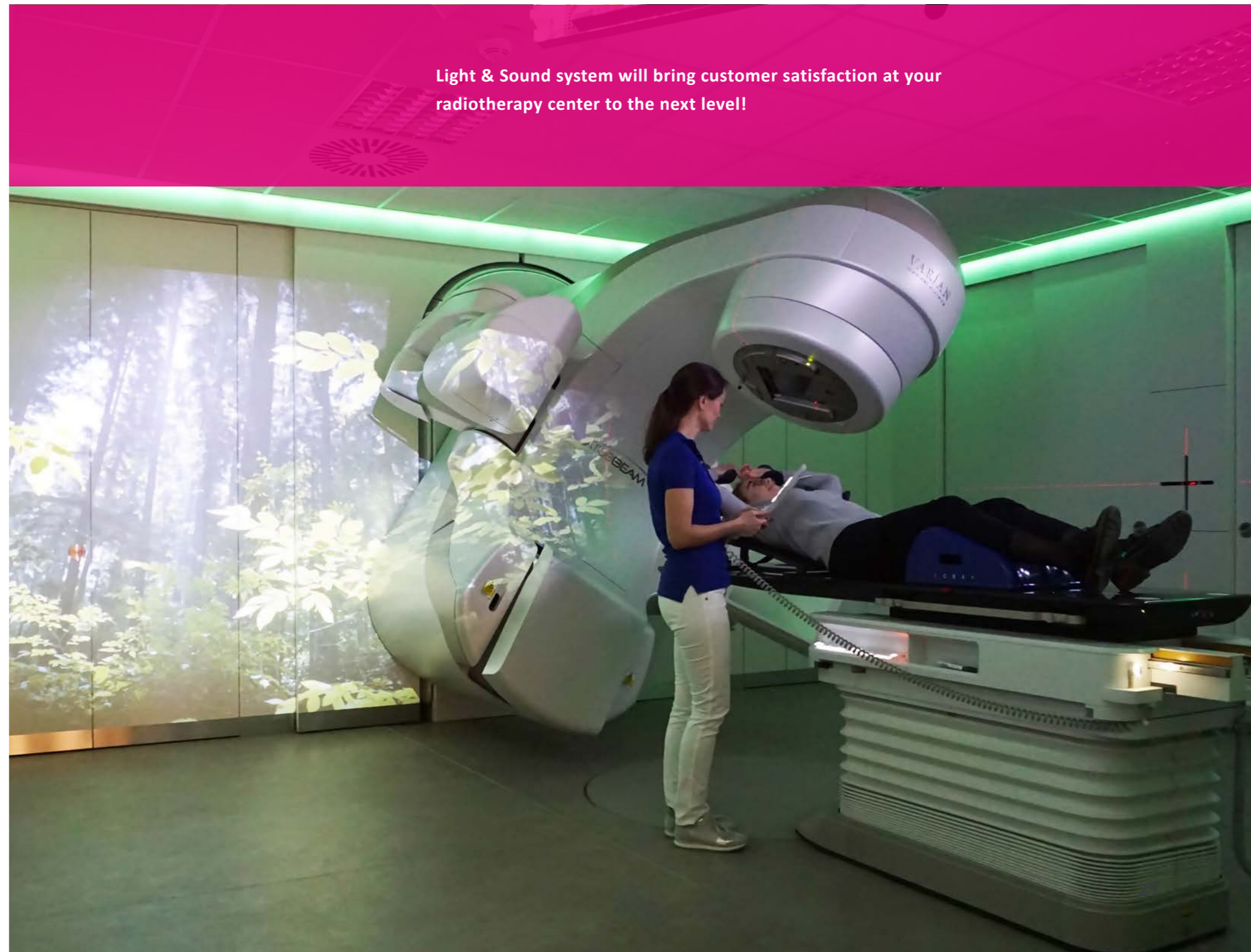
# Upgrade features for seamless integration

### Patient Reported Outcomes & Alerts

When patients check in to the department, there is no better time to inquire about their health and overall well being. Using the IDENTIFY Palm Reader, you can now easily ask your patient some important questions like pain levels or whether they feel dizzy. Any answer outside the tolerance will trigger an alert to your clinical staff ensuring you engage with your patient pro-actively and can prevent incidents (like falling due to dizziness).

You can also ask Patient Satisfaction related questions, allowing you to track own Patient Satisfaction Index in real time.

The Patient Reported Outcomes are integrated with HUMEDIQ's CAREONLINE solution, which in turn can send the results to the assessment modules in your OIS.

CAREONLINE is an all-in-one digital solution for efficient, coordinated care. Hand in hand, patients and clinicians revolutionize existing workflows throughout the overall patient journey.
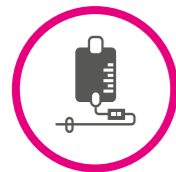
### IDENTIFY for Medical Oncology

IDENTIFY is expanding it's patient safety solution to MEDICAL Oncology, ensuring that each patient is receiving the correct medication.

After the patient's identify is verified using the IDENTIFY Palm Reader, the medication is verified using Near Field RFID alerting the clinical staff if the wrong medication was scanned.



**IDENTIFY is expanding it's patient safety solution to Medical Oncology, ensuring that each patient is receiving the correct medication.**

# Why I 💚 IDENTIFY

### Radiation Therapist

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

### Radiotherapy Physicist

- EASY SET-UP: patient contributes to self-positioning
- AUTOMATED MORNING CHECK
- AUTO DOCUMENTATION: 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 radiation therapists 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 BUDDY-CHECKING

"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**

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