



Panel Discussion 3:

**Multidisciplinary Precision  
Imaging Research.  
The role of Academic and  
Industry relationships**



**IS3R 2023**

Berlin/Germany

August 24–26, 2023

**Imaging's next  
chapter:**

**Illuminated with  
the intensity of  
natural light**

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# Clinical / Industry Relationship

- 8 years value partnership KSB - SHS
- SOMATOM X.ceed Clinical Use Test
- Goals of translational projects → Combining strengths of both partners
  - **Validation Studies:** real-world patient data → improve SW & HW
  - **Regulatory Clearance:** studies as part of regulatory clearance (CE & FDA)
  - **Market launch:** supporting marketing activities, strengthening each others reputation



Installation SOMATOM X.ceed



Interim solution during installation



Clinical Webinars & Productorials

**Kantonsspital Baden AG**  
4.738 Follower  
1 Monat

Neuer SOMATOM X.ceed: Partnerschaft mit Siemens trägt erste Früchte

Siemens Healthineers hat heute der Weltöffentlichkeit den neuen SOMATOM X.ceed vorgestellt. Bei uns im KSB ist dieses CT-Gerät bereits seit über einem Monat im Einsatz. Die technologische Partnerschaft mit Siemens trägt damit erste Früchte.

In der Bildgebung und in der interventionellen Radiologie bietet das Gerät diverse Vorteile, von denen das KSB zweifellos profitiert. So beispielsweise eine AI-basierte Benutzeroberfläche für eine optimierte Strahlendosis, 3D-lasergesteuerte Interventionslösungen oder auch eine der weltweit höchsten Ortsauflösungen.

Wir freuen uns auf die innovative und wegweisende Zusammenarbeit!

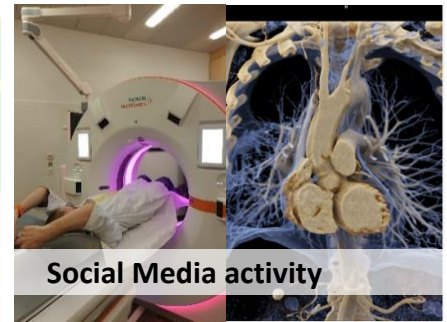
#innovation  
#referenzspital  
#technologienpartnerschaft  
#kantonsspitalbaden  
Rahel Kubik, Prof. Dr. PD Dr. Tilo Niemann Michael Kostrzewa Sandro Moser

	Effectiveness	Efficiency	Performance	Stability	Learnability	Satisfaction
Don (Scan&GO - Mobile Tablet / In-room workflow)	Green	Green	Green	Green	Green	Green
sted patient positioning	Green	Green	Green	Green	Green	Green
Workflow and results including postprocessing (automatic / manual)	Green	Green	Green	Green	Green	Green
es (Spiral, Sequence, iFluoro)	Green	Green	Green	Green	Green	Green
sted workflow with decision trees and the quality of the results (rhage & skull unfolding)	Green	Green	Green	Green	Green	Green

Legenda  
 Green = 3.25 to 4  
 Yellow = 2.5 to < 3.25  
 Red = 1 to < 2.5

**Feedback collection**

Are all needed functions / information available?  
 How easy/flooding can you work?  
 How fast is the System / SW reacting?  
 How robust and stable is the system?  
 How fast have you become familiar with the functionality?  
 How much pleasure do you have working with the functionality?



Social Media activity



# Translational studies SOMATOM X.ceed

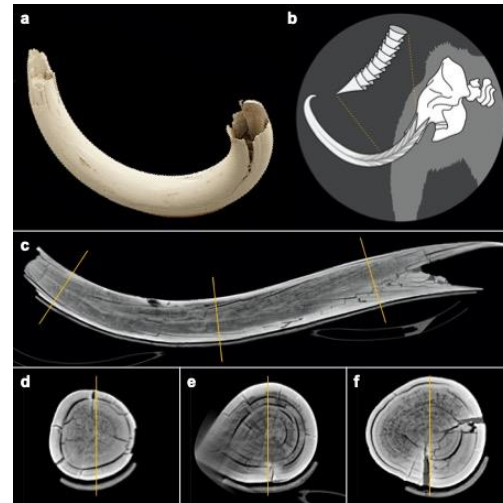
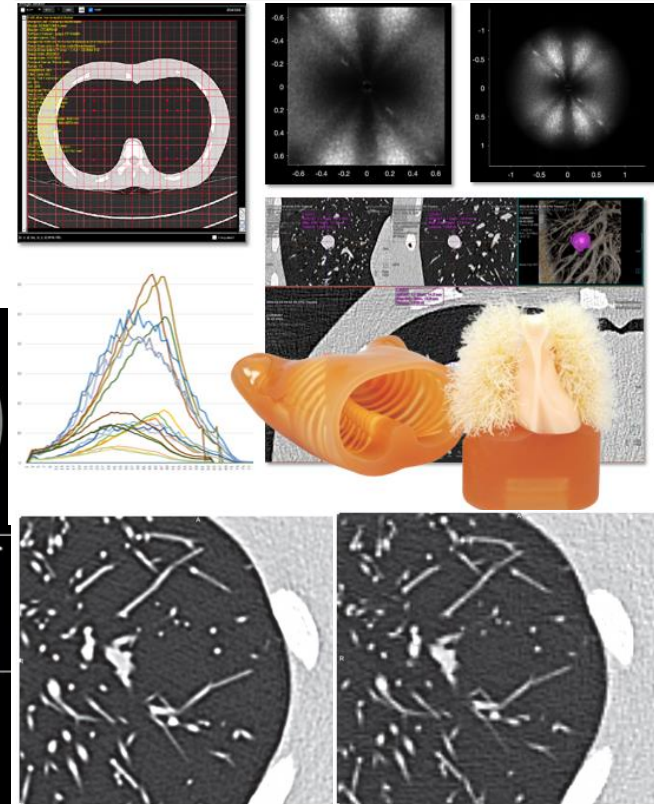
- **Interventional Radiology** with an integrated 3D laser
- Advantages of **wide bore**, e.g., IR procedures, bariatric imaging
- Improved Diagnostic **Image Quality**, High-Res & Low-Dose

*in vivo* 37: 99–105 (2023)  
doi:10.21873/in vivo.13058

**Assessment of Image Quality in Chest CT With Precision Matrix and Increased Framing Rate Using Single Source CT: A Phantom Study**

STYLIANOS MAVRIDIS<sup>1</sup>, MONA EL-GEDAILY<sup>1</sup>, RAHEL A. KUBIK-HUCH<sup>1</sup>, FRIEDRICH KNOCH<sup>2</sup>, JESUS FERNANDEZ LEON<sup>2</sup>, ANDRÉ EULER<sup>3</sup>, LUKAS HEFERMEHL<sup>4</sup> and TILO NIEMANN<sup>1</sup>

<sup>1</sup>Department for Radiology, Kantonsspital Baden, Baden, Switzerland; <sup>2</sup>Siemens Healthcare GmbH, Forchheim, Germany; <sup>3</sup>Department of Radiology, University Hospital Zurich, Zurich, Switzerland; <sup>4</sup>Department of Urology, Kantonsspital Baden, Baden, Switzerland



# Gantry Integrated Guidance System for CT Interventions



Article

## Evaluation of Accuracy and Performance of a Novel, Fully Gantry Integrated 3D Laser System for Computed Tomography Guided Needle Placement: A Phantom Study

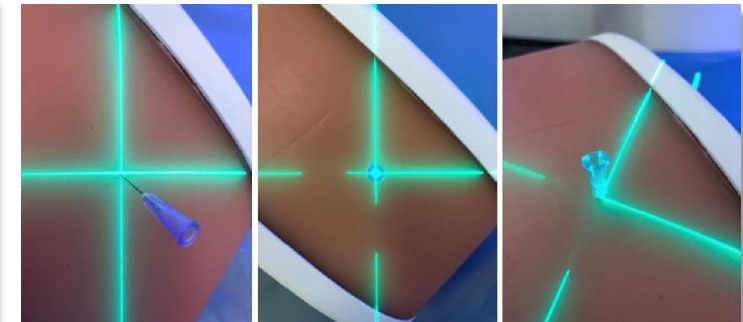
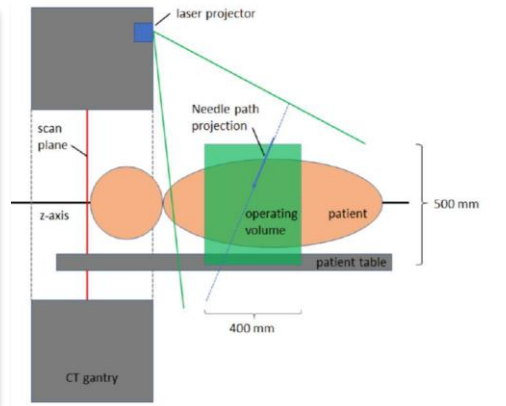
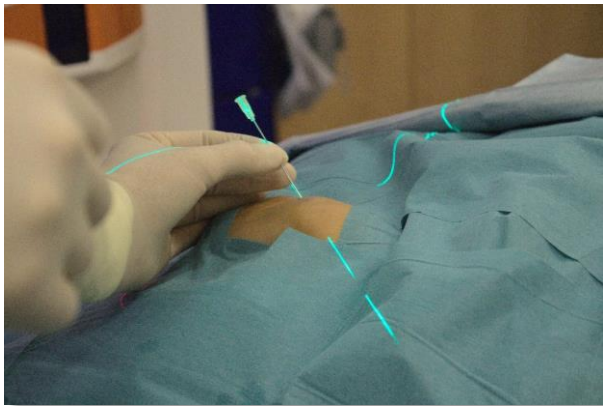
Katharina Weigel<sup>1,2</sup>, Rahel A. Kubik-Huch<sup>1</sup>, Matthias Baer-Beck<sup>3</sup>, Christian Canstein<sup>3</sup> and Michael Kostrzewa<sup>1,4,\*</sup>

**Tips and Tricks**

- Use fingers, swab etc. to improve laser alignment

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Webinar for SHS



# Gantry Integrated Guidance System for CT Interventions

- Interventions: faster, fewer needle corrections, less radiation dose
- Similar accuracy in needle placement novice & expert
- Full gantry integration avoids set up times → increases usage

## Constant user feedback lead to system improvement:

- Improvement in HW & SW reliability
- Improvement in GUI
- Feedback towards development of dedicated HW & SW for IO

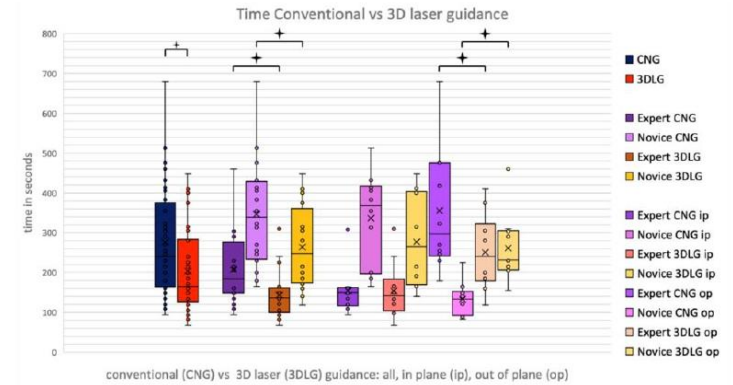


Figure 5. Procedural times for conventional needle guidance (CNG) and 3D laser guidance (3DLG), for expert and novice in in-plane and out-of-plane procedures.

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3) workflow and results including postprocessing (automatic / manual)						
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<b>Legenda</b> <span style="display: inline-block; width: 15px; height: 10px; background-color: #28a745; border: 1px solid black;"></span> = 3.25 to 4 <span style="display: inline-block; width: 15px; height: 10px; background-color: #ffc107; border: 1px solid black;"></span> = 2.5 to < 3.25 <span style="display: inline-block; width: 15px; height: 10px; background-color: #dc3545; border: 1px solid black;"></span> = 1 to < 2.5						
Are all needed functions / information available? How easy-flowing can you work? How fast is the System / SW reacting? How robust and stable is the system? How fast have you become familiar with the functionality? How much pleasure do you have working with the functionality?						



# Key Outcomes & Benefits

- Collaboration drives Innovation
  - Knowledge transfer: combining industry expertise with academic & clinical knowledge
  - Pooling of resources: access to specialized equipment, personnel & patients
  - Acceleration of progress: real-time feedback & improvements
- Collaboration benefits clinical institutions, industry & patients

***Advancing precision medicine for patients' benefit***





Thanks to

PD Dr Michael Kostrzewa, Prof. Tilo Niemann, Prof. André Euler & Team Kantonsspital Baden  
& the collaboration with SHS – Jesús Fernández León & CT Team