

HIGHLIGHTS

ICCAS at the DMEA 2019

April 9 – 11, 2019 | Berlin

The newly developed standard “Service-Oriented Device Connectivity” (SDC) was introduced by the OR.NET association (OR.NET e.V.) at this year’s Connecting Digital Health event (DMEA) in Berlin. ICCAS was involved in the showcases where the partners explained the dynamically networked operating room with devices from different manufacturers. Numerous guests followed the invitation to learn about the benefits of the new standard.



General view on the OR.NET e.V. - exhibition booth at the DMEA 2019.
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[More about SDC](#)

[Press release \(German\)](#)

ICCAS Hyperspectral Imaging at the BMWi

May 9, 2019 | Berlin

At the “Innovationstag Mittelstand”, ICCAS joined the exhibition with a hyperspectral imaging (HSI) system developed in cooperation with physicians from Leipzig University Hospital and the Diaspective Vision GmbH. The system enables non-invasive measurements of cutaneous perfusion and surface moisture to detect patient status information during surgery. This event was initiated by the Federal Ministry of Economic Affairs and Energy (BMWi).

[Project](#)

PAST EVENTS

Contributions at DGE-BV Congress

March 28 – April 1, 2019 | Stuttgart

ICCAS’s topics presented at this year’s Congress of the German Society for Endoscopy and Imaging Techniques (DGE-BV) were: “Supervised tissue discrimination during thyroid and parathyroid surgery based on hyperspectral imaging” and “Cognitive situation awareness for an intelligent navigation assistance in minimally-invasive endoscopic surgery”. Andreas Melzer held an invited lecture on “Artificial intelligence and machine learning in the future OR.”

ICCAS electronic patient record system evaluated at EU ModEx

April 11 – 13, 2019 | Tallin, Estonia

ICCAS scientists visited a further EU civil protection exercise (ModEx) where three European emergency teams trained their cooperation. The researchers presented the electronic patient file and got important impressions of the real conditions of a field hospital. The exercise took place in Tallin and simulated the situation after a meteorite impact with accompanying flash flood.



The field hospital of the Austrian medical team.
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Successful transfer of ICCAS results in medical products

May 23 – 25, 2019 | Leipzig

At the Annual Conference of the Society for Neonatology and Paediatric Intensive Care Medicine (GNPI), a new user interface was presented that has evolved in cooperation between the Life Support Systems group and the Fritz Stephan GmbH. The new interface combines the display of a respirator and an Electrical Impedance Tomography (EIT) system and can additionally display distributions of ventilation- and blood circulation in the thorax. It gives the physician a more comprehensive overview of the patient’s ventilatory situation.



ICCAS at the conference booth.
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Special robot feature introduced at EAES Congress

June 12 – 15, 2019 | Sevilla, Spain

Within the scope of the 27th Congress of the European Association for Endoscopic Surgery (EAES), the SONO-RAY group introduced a special robot feature for the use during the combined focused ultrasound and radiation therapy: The KUKA Ibr iiwa robot is able to communicate with other devices by implementing the open

communication standard Service-oriented device connectivity (SDC). The joint EAES-OR.NET task force initiated by Andreas Melzer met with OR.NET director Thomas Neumuth to discuss the next step towards using the SDC-standard. Andreas Melzer was invited to hold the Alfred Cuschieri Lecture.

SONO-RAY group at ISTU/EUFUS Joint Symposium

June 13 – 15, 2019 | Barcelona, Spain

At the Joint International Symposium for Focused and Therapeutic Ultrasound (EUFUS/ISTU), the SONO-RAY group presented results on robot-assisted and MR-guided focused ultrasound hyperthermia at the exhibition booth and in poster presentations. Congress co-chair Prof. Andreas Melzer led two panels. Group leader Dr. Lisa Landgraf headed the session Therapy Ultrasound.



Dr. Lisa Landgraf and Johann Berger at the EUFUS/ISTU exhibition booth. © ICCAS

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ICCAS invited lecture at CARS Congress

June 18 – 21, 2019 | Rennes, France

At this year's Computer Assisted Radiology and Surgery Congress (CARS) the Model Based Automation and Integration group enriched the workshop "Digital Operating Room". Thomas Neumuth gave an invited lecture on artificial intelligence and machine learning in the operating room and networking of medical devices based on the SDC interface. Furthermore, the topic tissue classification based on hyperspectral imaging was introduced.

ICCAS shows its sporty side

June 19, 2019 | Leipzig

Under tropical conditions, an ICCAS-team took part in this year's Leipzig Corporate Run. The runners focused not only on personal best times but also on team spirit and sporting fun. With over 20,000 runners from 1,000 companies, this year's event achieved a new participation record. Thanks to more than 600 running enthusiasts, the University Medicine was once again awarded the title "Most Sporty Company".



New MR-guided endovascular procedures in London

June 23 – 26, 2019 | London, UK

At the renowned Hamlyn Symposium on Medical Robotics (HSMR) in London Andreas Melzer gave an invited lecture on new technologies for MR-guided endovascular procedures such as: cardiac biopsy, aortic coarctation stenting, heart valve prosthesis and thrombolysis in the workshop Endovascular Intervention.

Kenya partner universities visit ICCAS

June 26, 2019 | ICCAS, Leipzig

Teachers and administration staff from two Kenyan partner universities visited the ICCAS to learn more about practice-oriented university teaching and application-targeted project work. The researchers introduced the intelligent operating room, the digital patient model and a joint industry project. The 16 guests are currently participating in the university's training program for the worldwide support of small and medium-sized enterprises.



Visitors from Kenyan partner universities.

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Informatic students test ICCAS developments

June 27, 2019 | ICCAS, Leipzig

Medical informatics students from universities in Brunswick, Heidelberg and Amsterdam received an insight into the research in computer-assisted and robot-aided surgery at ICCAS. They could test minimally invasive surgery at laparoscopy trainers and a robot assisted biopsy. The 16 students are involved in the international Frank van Swieten Lectures of the university's Institute for Medical Informatics, Statistics and Epidemiology (IMISE).



Students test a robotics use case.

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RESEARCH

Future Med Technologies 2019 – Abstract book available

All scientific contributions of this year's doctoral workshop "Future Med Technologies" (FMT) have been published in an Abstract

book. The FMT workshop was organized by ICCAS in March for the exchange between doctoral candidates with regional companies to jointly launch intelligent medical technology. Thematic fields: Model-assisted therapy and future operating room, Active assisted living, Non-invasive imaging and Image-assisted intervention.

[Abstract book](#)



New Papers Published

Unger M, Markfort M, Halama D, Chalopin C. Automatic detection of perforator vessels using infrared thermography in reconstructive surgery. *Int J Comput Assist Radiol Surg.* 2019 Mar;14(3):501–7. [Link](#)

Lemke HU, Melzer A. Back to the roots of AI and their relevance for health care today. *Minim Invasive Ther Allied Technol.* 2019 Apr;28(2):65–8. [Link](#)

Unger M, Black D, Fischer NM, Neumuth T, Glaser B. Design and evaluation of an eye tracking support system for the scrub nurse. *Int J Med Robot.* 2019 Feb;15(1):e1954. [Link](#)

Cypko MA, Stoehr M. Digital patient models based on Bayesian networks for clinical treatment decision support. *Minim Invasive Ther Allied Technol.* 2019 Apr;28(2):105–19. [Link](#)

Kasparick M, Andersen B, Franke S, Rockstroh M, Golatowski F, Timmermann D, et al. Enabling artificial intelligence in high acuity medical environments. *Minim Invasive Ther Allied Technol.* 2019 Apr;28(2):120–6. [Link](#)

Neumann J, Franke S, Rockstroh M, Kasparick M, Neumuth T. Extending BPMN 2.0 for intraoperative workflow modeling with IEEE 11073 SDC for description and orchestration of interoperable, networked medical devices. *Int J Comput Assist Radiol Surg.* 2019 May 4. [Link](#)

Köhler H, Jansen-Winkeln B, Chalopin C, Gockel I. Hyperspectral imaging as a new optical method for the measurement of gastric conduit perfusion. *Dis Esophagus.* 2019 May 10. [Link](#)

Karakitsios I, Mihcin S, Melzer A. Reference-less MR thermometry on pre-clinical thiel human cadaver for liver surgery with MRgFUS. *Minimally Invasive Therapy & Allied Technologies.* 2019;1–7. [Link](#)

Kim Y-W, Barach P, Melzer A. The Seoul Declaration: A Manifesto for Ethical Medical Technology. *Minim Invasive Ther Allied Technol.* 2019 Apr;28(2):69–72. [Link](#)

Maktabi M, Köhler H, Ivanova M, Jansen-Winkeln B, Takoh J, Niebisch S, et al. Tissue classification of oncologic esophageal resectates based on hyperspectral data. *Int J Comput Assist Radiol Surg.* 2019 Jun 20. [Link](#)

of Medical Sciences”. The Academy is an independent institution in the United Kingdom representing the diversity of medical science. Furthermore, he has been appointed visiting professor by the National Cancer Center Graduate School of Cancer Science and Policy in South Korea for two years. At the teaching- and research center located in the east of Seoul, experts share their knowledge and practical experience in the fields of research, therapy, cancer control and -policy.



Dr. Claire Chalopin successfully completed her habilitation process. Her postdoctoral thesis deals with the technical development of intraoperative 3D ultrasound with contrast medium and dynamic infrared thermography for neurosurgery.

Dr. Claire Chalopin and Dean Prof. Christoph Josten after the successful teaching rehearsal in the Faculty Council.
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UPCOMING EVENTS

DORS 2019 – Only 2 months left!

August 26 – 30, 2019 | ICCAS, Leipzig

In about two months, our 6th Digital Operating Room Summer School (DORS) will open its doors. You are keen of latest computer-assisted technologies in different medical disciplines? You are interested in hands-on experience with surgical devices? You want to gain insights into modern OR's and Labs? We are looking forward to your DORS-visit in Leipzig!

[Information and registration](#)

Discuss with us about: AI against cancer

October 7, 2019 | Leipzig University Hospital, Atrium Pediatric Clinic

[Information](#)

ICCAS Open Day 2019 – Save the Date!

November 14, 2019 | ICCAS, Leipzig

JOB OFFERS

Scientific staff

MR-research group:

[Computer-assisted image-assisted interventions](#)

Research project:

[Development of assistance applications for the personalized tumor therapy](#)

Research project:

[Communication technologies and appropriate interfaces for medical technology applications](#) (2 vacancies)

PEOPLE

At this year's joint conference of the societies Mitteldeutsche Gesellschaft für Gastroenterologie and Mitteldeutsche Chirurgenvereinigung, **Hannes Köhler** won the Young Surgeon's Prize and **Marianne Maktabi** the poster prize for their common work on „Hyperspectral imaging during esophagectomy for the measurement of ischemic conditioning effects of gastric conduit“.

Prof. Andreas Melzer was elected a fellow of the British “Academy



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