

## HIGHLIGHTS

### EU CIVIL PROTECTION EXERCISE MODEX | OCTOBER 14 – 18, 2018 | BUCHAREST, ROMANIA

Prof. Thomas Neumuth and Erik Schreiber supported the project team 'European Modular Field Hospital' (EUMFH) during the EU's largest civil protection exercise 'ModEX' in Bucharest. A total of 517 emergency personnel from 17 countries and more than 1500 Romanian volunteers took part in this exercise. Prof. Thomas Neumuth and Erik Schreiber evaluated the digital patient file for disaster relief developed at ICCAS under real conditions.



The EUMFH team together with further helpers of the mobile field hospital. | © ModEX 2017/2018

[Link video](#)

### VISIT OF THE EUROPEAN COMMISSIONER FOR HUMANITARIAN AID & CRISIS MANAGEMENT | NOVEMBER 23, 2018 | ICCAS

ICCAS welcomed the EU Commissioner for Humanitarian Aid and Civil Protection Christos Stylianides, who followed an invitation from the consortium of the European Modular Field Hospital (EUMFH) project. Main results of the conceptional phase were presented and future steps discussed. In a statement, Stylianides emphasized the high importance of science for developments in disaster relief. ICCAS as the only project partner of an European university is participating with the electronic patient record and the information technology network. The Commissioner also visited ICCAS's Intelligent Operating Room and a surgical robotic application. [Video recording of the visit](#)



EU Commissioner Christos Stylianides with Prof. Thomas Neumuth, Prof. Jürgen Meixensberger and Prof. Erich Schröger in ICCAS's Intelligent OR. | © ICCAS, photo: Swen Reichhold

## PAST EVENTS

### CONTRIBUTIONS AT MICCAI 2018 | SEPTEMBER 16 – 20, 2018 | GRANADA, SPAIN

At the 21st International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI 2018), ICCAS presented a method for the context-aware assignment of medical device functions to input devices in integrated operating rooms. Juliane Neumann won the best paper award for her work on 'Perioperative workflow simulation and optimization in orthopedic surgery'. The Digital Patient Model - group hosted a tutorial on 'ModelsCDS: Digital Therapy and Patient Models for Clinical Decision Support'.

### SONO-RAY WITH CONTRIBUTIONS AT CIRSE 2018 | SEPTEMBER 22 – 25, 2018 | LISBON, PORTUGAL

Dr. Lisa Landgraf presented two topics at the Conference of the European Cardiovascular and Interventional Radiological Society. The SONO-RAY group explained the state of research on the integration of robotic concepts into the interventional oncology workflow of combined focused ultrasound and radiation therapy and an ultrasound therapy system for high throughput in vitro analysis.



Dr. Lisa Landgraf at CIRSE 2018. | © ICCAS

### PANEL DISCUSSION AT SZ-KONGRESS: 'DIGITAL HEALTH – GESUNDHEIT NEU DENKEN' | SEPTEMBER 25 – 26, 2018 | MUNICH

Prof. Thomas Neumuth was one of the experts of the panel discussion on 'Smart Hospital' at the Süddeutsche Zeitung Congress 'Digital Health'. Together with participants from science, industry and medicine he discussed how digital technologies can simplify therapy and administration processes.



Prof. Thomas Neumuth as panelist at the SZ Congress. | © SZ-Kongress Digital Health, A. McMaster

## KEYNOTE LECTURE AT BMT 2018 |

SEPTEMBER 26 – 28, 2018 | AACHEN

At this year's 52nd Annual Meeting of the German Society for Biomedical Engineering (BMT 2018), ICCAS scientists contributed with several topics. Prof. Andreas Melzer chaired the section 'MR safety and compatibility of medical devices' and held a lecture on 'New devices for MR interventional procedures'. Prof. Thomas Neumuth gave a keynote lecture on 'Patient specific model guided therapy'. Furthermore, Dr. Stefan Franke spoke about 'Context-awareness for control consoles in integrated operating rooms' and Dr. Claire Chalopin about 'Hyperspectral based discrimination of thyroid and parathyroid during surgery'. Johann Berger gave a lecture on the 'Assessment of natural user interactions for robot-assisted interventions'. Xinrui Zhang held a lecture on the 'Combination of Focused Ultrasound Hyperthermia (FUS-HT) and radiation therapy. In 2020 the BMT will take place in Leipzig.



Prof. Thomas Neumuth during his keynote lecture on 'Patient specific model guided therapy' at the BMT 2018 in Aachen.

## ANNUAL MEETING GERMAN SOCIETY OF UROLOGY (DGU) |

SEPTEMBER 26 – 29, 2018 | DRESDEN

At the opening plenary of this year's Annual Meeting of the German Society for Urology (DGU), Prof. Andreas Melzer held an invited talk on aspects of the future operating room. Furthermore, Dr. Stefan Franke gave a talk at the forum 'Robot-assisted surgical techniques of tomorrow'. Prof. Thomas Neumuth served an article for the accompanying magazine 'Current Congress' on 'Tomorrow's surgery – A look into the future of urology'.

[Link article](#)

## PANEL DISCUSSION AT FRAUNHOFER INTERACTIVE EXHIBITION #ZUKUNFTSARBEIT |

OCTOBER 8 – 12, 2018 | BERLIN

Prof. Andreas Melzer was one of the panelists of the discussion about future work health during the Fraunhofer Interactive Exhibition 'Future Work'. Here, top-level representatives from science and politics talked about the workplace of the future in the fields of health and nursing care.



Prof. Andreas Melzer in an expert discussion at the Fraunhofer Interactive Exhibition #Zukunftsarbeit. | © Svea Pietschmann

## ORGANIZATION OF SMIT2018-IBEC2018 AND THE SEOUL DECLARATION |

NOVEMBER 8 – 10, 2018 | SEOUL, SOUTH KOREA

This year a joint Conference of the International Society for Medical Innovation and Technology (SMIT) and the Korea Society of Medical and Biomedical Engineering (IBEC) took place in Korea. Prof. Andreas Melzer acted as congress organizer and member of the international scientific committee. Furthermore, he gave an invited lecture on 'Future Operating Room & Safety' and presented results of the SONO-RAY group.

According to the motto of the conference 'Medical Technology for Human Values', the participants announced the 'Seoul Declaration: A Manifesto for Ethical Medical Technology' for the first time in the world. It should serve as a guideline for the medical device development.



During the 30th SMIT Conference in Seoul the delegates signed 'The Seoul Declaration: A Manifesto for Ethical Medical Technology' © Young Woo Kim

[Link to declaration](#)

## ICCAS AT MEDICA 2018 |

NOVEMBER 12 – 15, 2018 | DÜSSELDORF

At the world forum for medicine MEDICA 2018, Prof. Thomas Neumuth talked about medical technology and artificial intelligence. He also took part in the panel discussion on 'Operating Theater 4.0 – The OR.NET Approach to Safe and Dynamic Device Networking'.

## PROJECT- & COLLABORATION WORK

### PROJECT MEETING MOVE | SEPTEMBER 13, 2018 | LEIPZIG

Max Rockstroh organized the status meeting of the BMBF funded joint project 'Modular Validation Environment for Medical Networks' (MoVE) which took place in Leipzig. The consortium discussed the main project topics such as the approval, certification process and risk management of open networked medical products in integrated OR environments.



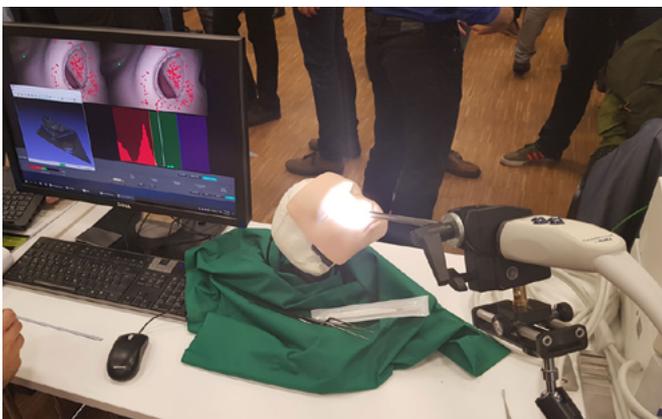
Project consortium MoVE | © ICCAS, photo: Leonie Lang

### JOINT WORKSHOP ON HYPERSPECTRAL IMAGING | NOVEMBER 14, 2018 | LEIPZIG

Under the direction of Prof. Ines Gockel (Clinic for Visceral Surgery at Leipzig University Hospital), and Dr. Claire Chalopin more than 30 international participants from research, clinic and industry attended presentations on the clinical application of hyperspectral imaging for tissue examination. A next meeting will follow in Heidelberg in the first quarter of 2019.

### COMPASS AT BMBF MITTELSTANDSKONFERENZ | NOVEMBER 19 – 20, 2018 | BERLIN

At this year's Mittelstandskonferenz organized by the Federal Ministry of Education and Research (BMBF), the COMPASS project was presented at a booth in the sector 'Human-Technology Interaction'. In this project, research is being carried out to improve the OR navigation. During the exhibition an assistance system for stereo endoscopy in the ENT area was demonstrated.



Demo setup for the COMPASS project at the Mittelstandskonferenz 2018 in Berlin. | © ICCAS

## RESEARCH

### LAUNCHING OF TWO PROJECTS: COMPASS AND LYSIS

Two new projects have launched at ICCAS. In September, the BMBF-funded joint project 'Cooperative Immersive Assistance System for Minimally Invasive Surgery' – COMPASS started, in which ICCAS and several partners from science, clinic and industry develop an artificial navigation awareness for the intelligent support of minimally invasive endoscopic navigation.

On October 9, the kick off of the BMBF-funded project 'Innovative Imaging for Tissue Differentiation in Minimally Invasive Surgery' – LYSIS took place at ICCAS. In close cooperation with Diaspective Vision GmbH and the Clinic and Polyclinic for Visceral, Transplantation, Thoracic and Vascular Surgery at Leipzig University Hospital (UKL), ICCAS is researching on a computer-assisted method for the automatic characterization, recognition and presentation of tissue from intraoperative hyperspectral imaging data.



The LYSIS project consortium: Jonathan Philip Takoh (UKL), Hannes Köhler, Dr. Axel Kulcke (Diaspective Vision GmbH), Dr. Claire Chalopin, Prof. Ines Gockel (UKL), Prof. Thomas Neumuth, Sebastian Murad Rabe (UKL). (f.l.t.r.)

### NEW PAPER IN THE FIELD OF 'MACHINE LEARNING'

Thomas Neumuth und Stefan Franke's paper 'Clear oxygen-level forecasts during anaesthesia' has now been published in Nature Biomedical Engineering. Machine learning can predict and help interpret the risk of hypoxaemia during general anaesthesia.

The DOI for this paper is 10.1038/s41551-018-0313-z. The DOI can be used to retrieve the abstract and full text by adding it to the following URL: <http://dx.doi.org/>.

## PEOPLE

### JULIANE NEUMANN



won the Best Paper Award for her work: 'Perioperative workflow simulation and optimization in orthopedic surgery' at the Medical Image Computing and Computer Assisted Intervention (MICCAI) satellite workshop 'OR 2.0 – Context Aware Operating Theaters' in Granada, Spain.



### ALEXANDER OESER

successfully presented his work on a novel system for assessing laboratory orders. He received the 1st price at the design challenge competition of the Visual Analytics in Healthcare (VAHC) workshop of the American Medical Informatics Association (AMIA 2018) in San Francisco.

## UPCOMING EVENTS

### ICCAS STATUS SEMINAR 2018 | JANUARY 24, 2019 | LEIPZIG

ICCAS's Status Seminar on the research of the year 2018 will take place on January 24, 2019. Exciting presentations as well as the outlook on future tasks will await the visitors. We cordially invite all interested parties to be our guests.



### SONO-RAY STATUS SEMINAR 2018 | JANUARY 25, 2019 | ONCORAY, DRESDEN

The 2nd status seminar of the BMBF-Meta Center for Innovation Competence SONO-RAY will take place at the Center for Radiation Research in Oncology (OncoRay) in Dresden. The two project groups will present their achievements of 2018 and will give a forecast to further research in 2019.

### SAVE THE DATE! PHD-WORKSHOP AND TRANSFER MEETING 'FUTURE MED TECHNOLOGIES' MARCH 5, 2019 | LEIPZIG UNIVERSITY HOSPITAL AND ICCAS

The two-part event is intended to bring together young talents and experienced manufacturers in the field of medical technology development. Students are engaged to present their technology-related research topics and to gain information about job offers or future working environments from partners of the accompanying industrial exhibition. Industry representatives are welcomed at the ICCAS to find out more about our projects and to get into conversation with the community.

[More information](#)

## MEDIA

### EU COMMISSIONER CHRISTOS STYLIANIDES VISITED ICCAS

[Video recording of the visit](#)  
[Press release](#)



### TV REPORT ON HIGH INTENSIVE FOCUSED ULTRASOUND (HIFU) AT LEIPZIG UNIVERSITY HOSPITAL



### MDR Aktuell, December 9, 2018

On the occasion of the press conference on the treatment of pancreatic cancer with High Intensity Focused Ultrasound (HIFU) in Berlin, the television channel 'MDR Aktuell' reported on HIFU applications in Central Germany. At the Leipzig University Hospital (UKL), HIFU is already being used to treat benign uterus tumours. The treatment of pancreatic tumours is planned to start next year. SONO-RAY group leader Dr. Lisa Landgraf and her team is researching how HIFU can be used in combination with radiotherapy for the treatment of malignant tumors in cooperation with the Center for Radiation Research in Oncology (OncoRay), Dresden.



THE ICCAS TEAM WISHES EVERYONE A MERRY CHRISTMAS AND A VERY GOOD START INTO A HEALTHY AND SUCCESSFUL NEW YEAR 2019!



### IMPRINT

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