Dear Reader,

we are pleased to present you the latest newsletter of ICCAS for Q2 / 2023.

Various conferences, events, and presentations attended are briefly presented, as are new publications and personnel achievements. We hope you enjoy and find interesting information.

Andreas Melzer & Thomas Neumuth

#TECHNOLOGIES_AND_SCIENCE_PRESENTATION
- ICCAS @ ISTU-EUFUS 2023
- ICCAS @ DMEA 2023
- ICCAS @ 6G SUMMIT
- ICCAS @ FUTURE OF HEALTH XPERIENCE 2023
- ICCAS @ LONG NIGHT OF COMPUTER GAMES
- ICCAS @ DHEALTH 2023
- ICCAS PRESENTS RESEARCH RESULTS ON OPEN GOVERNMENT DISTRICT DAY IN DRESDEN
- ICCAS PRESENTS RESEARCH RESULTS TO HEAD OF STATE CHANCELLERY - MINISTER OF STATE - OLIVER SCHENK
- ICCAS @ INNOVATION DAY FOR SMES
- ICCAS @ 31ST EAES INTERNATIONAL CONGRESS
- ICCAS @ CARS 2023
- ICCAS @ BERLIN 6G CONFERENCE
- COMPUTER SCIENCE STUDENTS VISIT ICCAS
- ICCAS @ HAMLYN SYMPOSIUM

#MEDICAL_TECHNOLOGIES
- Final project meeting AIQNET
- Final project meeting MOMENTUM
- Project PostStroke completed

#PUBLICATIONS_ONLINE
- Whitepaper on AI in Healthcare published
- Tagesgesspiegel Background Interview with Thomas Neumuth
- Conference presentations Anna Schatz and Johannes Keller - dHealth 2023

#MISCELLANEOUS_FROM_ICCAS
- Successful dissertation - Bernhard Glaser
- Joint Working Group for telecommunications technologies in healthcare established
Presentations and Conferences in Q2

April 17th – 20th, 2023 - Lyon
ICCAS @ ISTU-EUFUS 2023
Andreas Melzer was co-organizer of the second joint meeting ISTU - EUFUS 2023, which took place in Lyon from April 17th to 20th, 2023, and chaired the session on „Body Clinical Updates (Other Than Brain)“. With more than 500 participants from all over the world, the hybrid conference is the largest in the field of therapeutic ultrasound and is dedicated to the presentation and discussion of current topics and challenges of therapeutic ultrasound in scientific and clinical applications. In addition, three research-related ICCAS papers were presented at the poster session and demonstrations of the BMBF project 3MP FUS were held jointly with the Fraunhofer IBMT.

April 25th - 27th, 2023 - Berlin
ICCAS @ DMEA Berlin
Within the framework of DMEA 2023, ICCAS presented the ambulance of the future to an international audience of experts. Numerous visitors were able to inform themselves about the current state of development. As one of the highlights of the conference, numerous questions about the concept and the operation of the ambulance in the MOMENTUM research project were discussed with Max Rockstroh and the researcher team.

May 9th – 10th, 2023 - Dresden
ICCAS @ 6G Summit
Tobias Pabst and Max Rockstroh were participants at the 6G Summit in Dresden to exchange ideas with national and international experts from the field of communications engineering. Contacts to manufacturers and operators of network components were intensified and new research projects were initiated with various companies. The event gives a good overview of current trends in mobile communications and presents a wide range of possible applications.

May 10th – 11th, 2023 - MediaCity Leipzig
ICCAS presented @ Future Health Xperience - FHX_2023
Digital, cross-sectoral and useful in the interests of the patient - this vision stood out in the stage programs of the multi-day specialist and networking event as a desirable future for the healthcare system. During the event, ICCAS presented the MOMENTUM RTW and the technological developments for first aid with 5G for on-site rescue operations. At the same time, Thomas Neumuth gave a lecture as part of the program on the topic „Insights into the „Next Big Thing(s) in Health“. As a highlight for the participants, we then offered two guided tours through the ICCAS. The participants were given the opportunity to visit the laboratories and the demo operating room live on site.

May 15th, 2023 – Leipzig
ICCAS @ Long Night of Computer Games - HTWK
The research clinic of the Momentum project was represented at the „Long Night of Computer Games“ at the HTWK Leipzig. In our outpatient clinic, numerous interested students were able to find out about possible graduation topics at ICCAS and get to know our project and the outpatient clinic. For entertainment, visitors had the opportunity to play Ninten-
do Switch games together in the ambulance. Thank you to everyone who was interested!

**May 16th – 17th, 2023 - Vienna**
**ICCAS @ dHealth 2023**

Our scientists Anna Schatz and Johannes Keller presented their research results at ICCAS at the dHealth2023 in Vienna. Anna Schatz spoke about the future development of support systems for work processes and needs in the trauma room in relation to the arrival of trauma patients. For this purpose, a requirements analysis was carried out, focusing on the needs of the clinical users in the hospital before the patients’ arrival. Her presentation „Data Exchange Between Ambulance and Trauma Center: Interview Study About the Needs of Emergency Trauma Room Staff“ ran in Scientific Session 3 - Health Professionals & Information Access.

Johannes Keller presented the results of the Models for Personalized Medicine - MPM project at ICCAS. First, the functionality and the technical background of the Digital Twin were shown, then the various applications of the system, especially those of the project partners, were presented. The presentation „Using Digital Twins to Support Multiple Stages of the Patient Journey“ ran in Scientific Session 6: IT along the patient pathway.

**June 11th, 2023 – SMWK - Dresden**
**Hands on Science - ICCAS presents research results on the Open Government District Day - #TORV23**

On the day of the open government quarter - TORV23 in Dresden, the team around Thomas Neumuth presented the research results of the ICCAS on the medicine of the future to the Prime Minister Michael Kretschmer, the Minister of Science Sebastian Gemkow and numerous visitors on the premises of the Saxon State Ministry for Science, culture and tourism in Dresden.

Numerous questions were answered about the ambulance of the future - the MOMENTUM ambulance and the use of our robot dog in emergency care. We are pleased about the great interest in the topics of medicine of the future and hope to be able to give a good insight into the work in Leipzig.

**June 12th, 2023 – BioCity Leipzig**
**Head of the State Chancellery - Minister of State Oliver Schenk - visits LifeScience Site Leipzig**

On June 12th, 2023, Thomas Neumuth, in his capacity as a member of the board of biosaxony and technical director of the ICCAS presented the head of the Dresden State Chancellery - Minister of State Oliver Schenk - the developments on the ICCAS as a representative of the research location Leipzig.

After the presentation of the ICCAS ambulance of the future, a visit to the Medical Forge and the BioCity, intensive discussions with all those involved regarding the design and further development of the LifeScience location in Leipzig followed.
June 15th, 2023 – Berlin
ICCAS @ Innovation Day for SMEs
The ICCAS presented at the Innovation Day for SMEs 2023 | innovag2023 of the Federal Ministry of Economics and Climate Protection (BMWK) the results of the research project - SORLIC, which, together with our long-standing cooperation partners, the ACL, the clinic and polyclinic for oral, maxillofacial and plastic facial surgery, University Hospital Leipzig and the development service provider for embedded systems tecVenture.
The development results of the research project, a system for the intra-operative planning of flaps in surgery, were shown. The system captures image data outside of the visible range and processes it in order to estimate the position of blood vessels before the intervention, make the result available in real time and display it using augmented reality.

June 20th, 2023 - Rome
ICCAS attends the 31st EAES - European Association for Endoscopic Surgery - International Congress 2023 - „The future belongs to the next generation“
The EAES Congress aims to provide brilliant and enthusiastic young surgeons with the opportunity to learn about a wide range of minimally invasive and endoscopic cutting-edge technologies, new procedures and techniques, protocols and more. As part of the program, Andreas Melzer led the H04 ultrasound course together with Calin Tiu (Romania).

June 23th, 2023 - Munich
Andreas Melzer took over CARS - Session Chair „Innovations in Surgery with AI Methods and Tools“
As part of CARS 2023 (Computer Assisted Radiology and Surgery Congress) in Munich, Andreas Melzer took over the Session Chair „Innovations in Surgery with AI Methods and Tools“. The CARS Congress is the annual international event for scientists, engineers and physicians to present and discuss the most important innovations shaping modern medicine worldwide. After the successful hybrid CARS conference in Tokyo 2022, the congress took place as a hybrid conference in Munich in 2023.

June 27th – 29th, 2023 – Berlin
ICCAS @ Berlin 6G Conference
As part of the Berlin 6G Conference, the prototype of the „ambulance of the future“ was presented live at the Conference. Among other things, representatives of the Federal Ministry of Education and Research visited the exhibition area and found out about the work of the ICCAS. Thomas Neumuth also gave a keynote in the „6G in Healthcare“ session during the event. He opens the session with the lecture „6G Health: Inspiring innovations for a healthier future“. Among other things, the ICCAS sub-project in the national project „6G Health“ was presented. During the session, various aspects and future benefits of 6G use in medicine were highlighted.

June 29th, 2023 - Leipzig
Computer science students visit ICCAS
As part of the international Frank van Swieten lectures at the Institute for Medical Informatics, Statistics and Epidemiology (IMISE), 20 bachelor’s and master’s students in medical informatics from the Universities of Heidelberg and Amsterdam visited ICCAS and gained an insight into research here in Leipzig. The agenda included a visit to the intelligent operating room, insights into the research work on hyperspectral imaging and robotics research at ICCAS.

June 29th, 2023 – London
ICCAS @ Hamlyn Symposium on Medical Robotics
At this year’s Hamlyn Symposium on Medical Robotics in London, Andreas Melzer represented ICCAS and presented our research results. In addition to his functions as a program committee member, he
took part as a panelist in the workshop „Collaborative robotics in the medical field: where we are and where we need to go“ with the lecture „Collaborative Robotics for Ultrasound Guided Procedures“.

Andreas Melzer moderated the clinical forum and hosted the session „Breaking through the Translation Barrier: Clinical Applications of Robotic Tech“ and organized the all-day workshop „Endoluminal robots: a journey from unmet medical needs, design challenges, regulatory bodies, and commercial opportunities“ along with other scientists. In addition, ICCAS had one more success in the Surgical Robot Challenge. The submitted entry was selected as one of the winners.

April 25th – 27th, 2023 - Berlin
Final project meeting AIQNET
After three years the consortium partners from clinics, software development and medical technology presented the results of the project at the DMEA, from April 25th - 27th, 2023. As part of the sub-project, ICCAS developed a „Digital Patient Model“ that integrates different perspectives on treatment and the patient himself. The goal was to improve AI-based clinical quality and performance assessment based on prior knowledge about the patient or the course of treatment. This includes the aspects of diagnosis and the present disease, information about therapies as well as the specific characteristics of the patient. At the DMEA in Berlin, the AIQNET ecosystem with its various project partners presented itself once again to an international audience of experts at the end of the project.

May 5th, 2023 - Leipzig
Final project meeting MOMENTUM
After a little more than three years, the Momentum research project came to an end with a final meeting in Leipzig. Thereby all involved partners present their research work in lectures and live presentations and discuss current and future challenges with 5G in the medical context and especially in rescue medicine.

June 30th, 2023 - Leipzig
Project PostStroke completed
The PostStroke project to empower stroke patients has been successfully completed. An innovative digital concept called PostStroke Manager was developed by ICCAS together with the Clinic and Polyclinic for Neurology to improve post-stroke care. The concept includes an IT infrastructure that integrates various apps for patients, physicians, and stroke care providers, as well as mobile sensors (wearables). The PostStroke Manager places the individual patient at the center of the often different treatment structures and helps in many ways to manage the new life situation in the best possible way. The project is the first of its kind to focus on the care situation of stroke patients and to use modern eHealth and mHealth technologies for this purpose.
Publications and Misc in Q2

April, 2023 - online
Whitepaper on AI in Healthcare published
The Learning Systems Platform has published a whitepaper on AI in healthcare that allows an overview of the key opportunities, challenges and prerequisites for AI deployment. The findings are based on a qualitative survey and an interactive roundtable on “What AI brings to healthcare professionals” hosted by the Learning Systems Platform in March 2022. Thomas Neumuth, as a member of the Learning Systems Platform, collaborated on the whitepaper and was able to contribute the experiences of ICCAS accordingly. The whitepaper can be accessed at the following link: https://www.plattform-lernende-systeme.de/files/Downloads/Publikationen/AG6_WP_KI_f%C3%BCr_Gesundheitsfachkr%C3%A4fte.pdf

May 12th, 2023 - online
Tagesspiegel Background Interview to Digitalization & AI with Thomas Neumuth
The Tagesspiegel Background interviewed Thomas Neumuth in a portrait on the opportunities and risks of 6G in healthcare. “Healthcare today is already full of technology. Now the future mobile communications standard 6G is to be harnessed for medical care, making it even more efficient and precise. Thomas Neumuth and a research team at the ICCAS Institute in Leipzig are investigating the opportunities and risks.” The article can be accessed at the following link: https://background.tagesspiegel.de/digitalisierung/thomas-neumuth?utm_source=linkedin.com&utm_medium=social&utm_campaign=fokusseite&utm_content=di+read

May, 2023 - online
Conference presentations Anna Schatz and Johannes Keller - dHealth 2023
Anna Schatz: Data Exchange Between Ambulance and Trauma Center: Interview Study About the Needs of Emergency Trauma Room Staff. https://pubmed.ncbi.nlm.nih.gov/37172163/


April 26th, 2023 - Leipzig
Successful dissertation - Bernhard Glaser defends doctoral thesis
Our alumni Bernhard Glaser successfully defended his dissertation “Detection, Simulation and Analysis of Surgical Instrumentation” on April 26th, 2023. The dissertation focuses on the research activities of our former researcher here at ICCAS.

June 29th, 2023 - Berlin
VDE, DFKI and ICCAS establish Joint Working Group for telecommunication technologies in healthcare
As part of the Berlin 6G Conference, the establishment of the Joint Working Group on Connected Health is announced today as a joint interdisciplinary initiative of the professional societies VDE DGBMT (Biomedical Engineering), VDE ITG (Information Technology) and the BMBF 6G Platform. This groundbreaking initiative establishes a Germany-wide forum for industry-focused 5G and 6G wireless applications in healthcare with the goal of accelerating the development and implementation of telecommunication technologies for healthcare applications and promoting the exchange of knowledge and experience between industry, research and academia. VDE Connected Health brings together leading medical technology companies, research institutes, universities and government agencies to explore the potential of telecommunication technologies for medical research and practice. Through close collaboration between industry and academia, the aim is to develop innovative solutions that drive medical progress and revolutionize patient care.