## Dear Z43 Partners, Friends, and Followers

Z43 is a fast-paced center for cutting-edge applied research and product development. With our Z43 newsletter, we want to bring you up-to-speed with our latest activities and keep you in touch with new developments. We plan to make the newsletter a regular quarterly publication, and, as we want it be to of value to you, we welcome your feedback and suggestions.
For now, enjoy the first edition!

MEASUREMENT

Validation Antennas
Release of IEC 62209-3 Antenna Validation Set

To accelerate the standardization of fast specific absorption rate (SAR) test systems, SPEAG has commercialized the validation set of antennas as defined in the IEC 62209-3 draft that has been submitted as Publicly Available Specifications (PAS) in August 2017. The first validation study performed on two commercially available systems, of which one is SPEAG's cSAR3D, has been completed.

Please do not hesitate to consult SPEAG for additional information or to receive a quote for the validation antenna set.
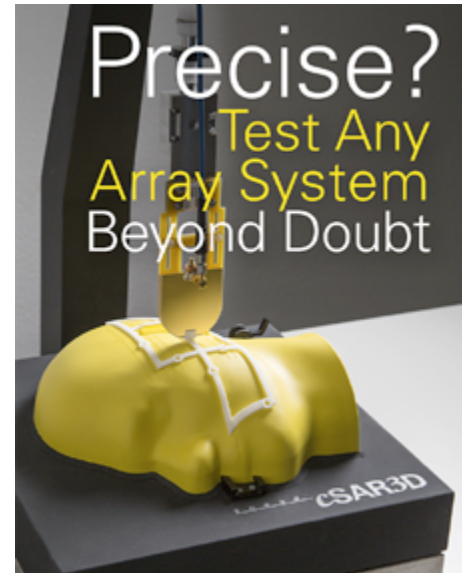
WORKSHOP

Great Interest in SPEAG / ZMT Hardware and Software Workshops in China and Taiwan

SPEAG, ZMT, and AUDEN Technology Corporation, our sales channel for China and Taiwan, hosted the popular Annual Hardware & Software Workshop Series in Beijing, Shanghai, Shenzhen, and Taipei in June 2017.
The workshop included a variety of presentations, live demos, and invited talks. Overall, more than 200 participants from industry and academia explored our latest innovations and product updates, learned about the most recent trends in standards and regulations – and the potential impact on business – and discovered how SPEAG's and ZMT's solutions and technology roadmaps add value to their current R&D operations and anticipate future technological advances in 2017 and beyond.

COLLABORATION

Successful NEUROMAN Project Start

Z43's key project "NEUROMAN: Functionalized Anatomical Models for Studying EM-Neuronal Dynamic Interactions", funded by the Swiss Commission for Technology and Innovation (CTI) and the Korea Institute for Advancement of Technology (KIAT), has been launched successfully.

In April, IT'IS project leader Bryn Lloyd was invited to the CTI headquarters in Bern to present an overview of progress during the first few months. As part of NEUROMAN, we will create the first male and female human computational phantoms, as well as one female rhesus monkey phantom, for in silico studies that focus on interactions of neurons and electromagnetic fields. The models will include detailed nerve geometry with neuronal electrophysiology coupled to

that can take anatomical and physiological phenomena into consideration.
NEUROMAN combines Z43's expertise in neuronal dynamic simulations in complex anatomies with that of the Departments of Anatomy of the Ajou University School of Medicine and Dongguk University College of Medicine in South Korea for imaging, segmentation, and anatomy.

AWARDS

Two Awards for Manuel Murbach

Congratulations to Manuel Murbach, project leader at IT'IS, for winning two awards in quick succession: one for best abstract at the 2017 Annual Meeting of the ISMRM in Honolulu in April, followed by the Arthur Pilla Young Scientist Award at BioEM2017 in Hangzhou in June. Keep it up - we look forward to the next award!

SIMULATION

Sim4Life Release V3.4

ZMT is happy to announce the release of Sim4Life V3.4! Version 3.4 includes our latest innovation – IMAnalytics – for the smooth, comprehensive, fast, and error-free analysis of the safety of medical implants during magnetic resonance imaging (MRI).

IMAnalytics is fully compatible with the S10974Ed2. The new module, in combination with the novel exposure MRIxViP libraries from IT'IS, reduces the time required for evaluations that usually take several weeks to just a few hours! The V3.4 Release provides several additional major performance boosts, novel features, and improvements, as well as bug fixes, to make your simulations faster and more effective.

Feedback, as always, is welcome!

MEASUREMENT

Revolutionary Probe for 5G

A major breakthrough for 5G certifications: SPEAG's novel millimeter-wave E-field probe EummWV2 that permits precise very close (as near as 2 mm from any transmitter) near-field measurements for frequencies of up to 110 GHz!

The probe is based on the legendary pseudo-vector design developed by IT'IS that is minimal in cross section and robust against field distortions inside the probe tip. EUmmWV2 has been optimized for minimal scattering and for isotropic response (deviation <0.5 dB at 60 GHz). The broadband calibration, thanks to the novel sensor model calibration method, results in a very small uncertainty of <0.8 dB for the entire frequency range from 0.75 – 110 GHz.

SOCIAL EVENT

Bye Bye Summer!

On 1st September, Z43 held its annual summer party for employees and partners, and families to end the summer season – this year without sunshine, but as usual with the best sausages and mustard in town and plenty of beer and wine to wash them down.

RESEARCH

Publications

Effects of body habitus on internal radiation dose calculations using the 5-year-old anthropomorphic male models
T. Xie et al., Phys Med Biol, 62(15), pp.6185–6206 (online 13 July 2017)

Noninvasive Deep Brain Stimulation via Temporally Interfering Electric Fields
N. Grossman et al., Cell, 169(6), pp.1029–1041 (online 1 June 2017)

Life-Time Dosimetric Assessment for Mice and Rats Exposed in Reverberation Chambers for the Two-Year NTP Cancer Bioassay Study on Cell Phone Radiation
Y. Gong et al., IEEE Trans. Electromagn. Compat. (online 17 March 2017)