

## Dear Z43 Partners, Friends, and Followers

Welcome to the second edition of our newsletter, which also marks the close of yet another eventful year. We appreciate the confidence you have placed in us, and we look forward to providing you with the best possible products and services in 2018. We wish you a festive holiday season and a very happy new year!

## AWARD

### o<sup>2</sup>S<sup>2</sup>PARC: IT'IS Receives 5-Year NIH Award



Exciting news: The NIH has selected IT'IS to lead the Modeling and Simulation Core (SIM-CORE) of their Stimulating Peripheral Activity to Relieve Conditions (SPARC) program! IT'IS will be the central hub for hosting and connecting simulations across the whole SPARC community. The aim of the SIM-CORE named o<sup>2</sup>S<sup>2</sup>PARC – Open Online Simulations for Stimulating Peripheral Activity to Relieve Conditions – is to establish a comprehensive, freely accessible, intuitive, and interactive online platform for simulating peripheral nerve system neuromodulation / stimulation and its impact on organ physiology in a precise and predictive manner. The vision is to create and maintain a unique neurosimulation platform, developed according to open-source philosophy, to enable and accelerate the development of electroceuticals and neuroprosthetics that will become the worldwide center of neurosimulations.

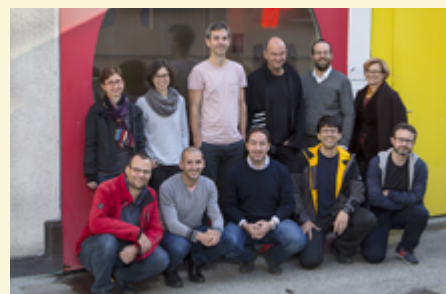
The development and implementation of the platform is anticipated to run for five years with a budget of US\$10 million. The kick-off meeting was held mid-November in Washington DC.

## WORKSHOP

### SPEAG / ZMT Hardware and Software Workshop in South Korea a Great Success!



SPEAG, ZMT, and DYMSTEC, our sales channel for South Korea, held their annual Hardware and Software Workshop at the Gachon Convention Center in Seoul on October 27, 2017. Approximately 180 engineers and scientists from leading companies, universities, and government institutions of South Korea attended the wireless and medical sessions. It was a great success.



## SIMULATION

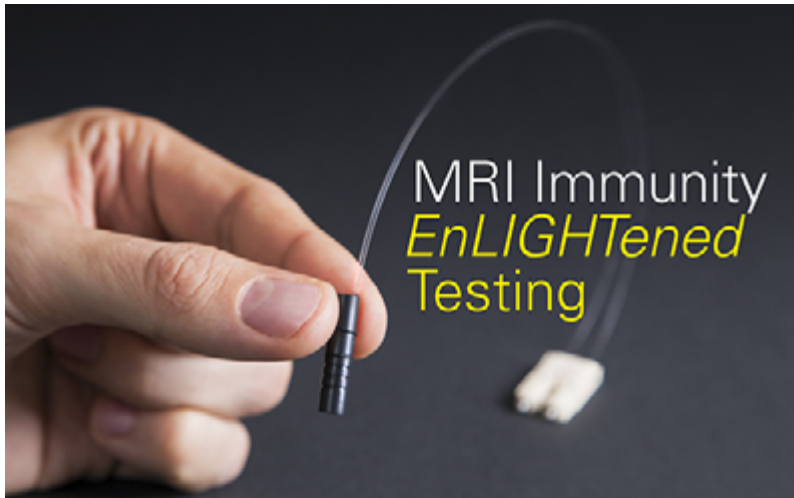
### Release of MRIxViP V1.0 Libraries and IMAnalytics Module V1.0

In September, IT'IS and ZMT released the first comprehensive solutions for fast, verified, validated, and traceable evaluations of MRI implant safety. The MRIxViP V1.0 libraries consist of 3D-distributions of the induced EMF inside the ViP models at any landmark position for any 1.5T or 3.0T birdcages. IMAnalytics combines these terabytes of data with piX models for comprehensive fully automated Tier 3 analysis within only a few hours. Get in touch for more information!



MEASUREMENT

## New Microphotonic Voltage Probe RFoF1P4MED



With the release of RFoF1P4MED, ZMT now offers an isolated, miniature fiber-optic differential voltage probe system able to measure the induced terminal voltages in AIMD in the frequency range from 10 MHz – 1 GHz. RFoF1P4MED, jointly developed with SPEAG, is compatible with MRI systems up to 7T and fulfills all requirements of ISO/IEC TS10974 Clause 15 for Tier 3 evaluations. By combining the probe and ZMT's Tier 3 hardware toolchain with IM-Analytics, RF-induced malfunction tests based on Tier 3 become a single streamlined process, saving measurement time and ensuring that safe and more-reliable implants are provided hassle-free and faster to the customer.

WORKSHOP

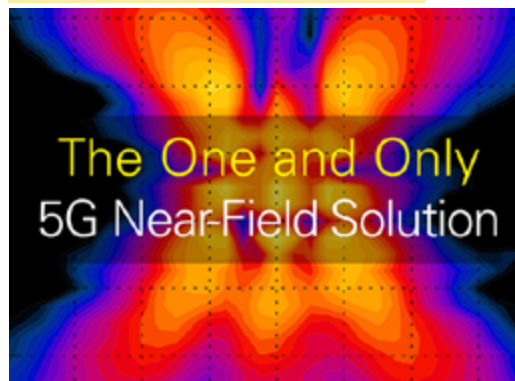
## Updates from IEC TC 106 Meetings and TCB Council Workshop

During recent years, various projects run by the IT'IS Foundation have provided the basis for exposure evaluation and characterization of WPT, IoT, and power density measurements of 5G and WiGig devices (6 – 100 GHz). In parallel, SPEAG developed the necessary tools for compliance testing of these emerging technologies. All of our solutions are in line with standards and regulatory requirements.



MEASUREMENT

## First FCC Approval Achieved with SPEAG 5G Module



Another first for SPEAG: the FCC recently granted the first RF exposure-type approval (FCC ID PD9-18265NG, dated 09/19/2017) for a WiGig embedded wireless communication module. The IT'IS Foundation, via its customized research activities (customized@itis.ethz.ch), collaborates with key players from research, industry, and government to smooth the path of new mm-wave products through regulatory approval.

SOCIAL EVENT

## Future Photonics Engineers! Z43 Future Day 2017

On November 9, the smell of silver solder filled the air at Z43 as nine riveted preteens – participants in the 2017 edition of Swiss National Future Day – assembled their own photo-active circuits and used them to build their own special light-sensitive robots. Swiss National Future Day is a country-wide campaign that promotes gender equality in the workplace, career choices, and life planning. It was a great opportunity for the kids to socialize while working side by side, and they were super proud of their work. Many thanks to everyone who was involved, and – to our future engineers – hope to see you back next year!



RESEARCH

## PUBLICATIONS

*Activation of Signaling Cascades by Weak Extremely Low Frequency Electromagnetic Fields*  
**E. Kapri-Pardes et al., Cell. Phys. Med. Biol. 43, pp. 1533–1546 (online 16 October, 2017)**

*Novel Hyperthermia Applicator System Allows Adaptive Treatment Planning: Preliminary Clinical Results in Tumour-Bearing Animals*  
**S. Dressel et al., Vet. Comp. Oncol. (online 11 September, 2017)**

*On the Use of Conformal Models and Methods in Dosimetry for Non-Uniform Field Exposure*  
**D. Poljak et al., IEEE Trans. Electromagn. Compat. 60, pp. 328–337 (online 18 July 2017)**