

## TEMPORAL INTERFERENCE

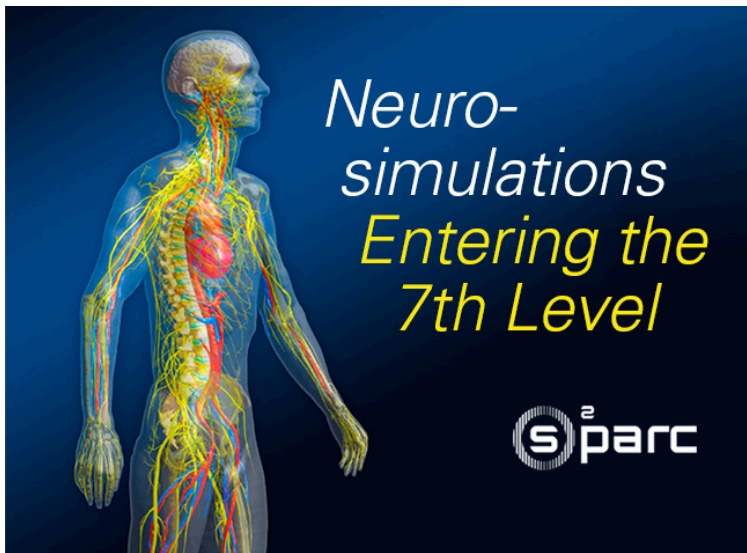
### Release of TIBS-R V2.0 & TIP V2.0



The release of Version 2.0 of our *Temporal Interference Brain Stimulator for Research (TIBS-R)* is our most important announcement this quarter. TIBS-R V2.0 eliminates all shortcomings of the previous version and now supports multi-channel phase modulation, enabling researchers to use complex interference waveforms to non-invasively stimulate deep brain targets. Great progress has also been made on the development of electroencephalogram and functional magnetic resonance imaging compatibility, soon to be released with TIBS-R V3.0. TIBS-R is available to all research groups enrolled in the Early Adopter Program – find out more about the program on the TI Solutions' [website](#).

And there is more news on the TI front: Version 2.0 of our Temporal Interference Planning Tool ([TIP V2.0](#)) supports the latest features of the TIBS-R and introduces several important enhancements, including four head anatomies, a rodent model, as well as support for multichannel and phase modulated TI, to allow full leveraging of the power of cloud-computing and parallelization.

## AWARD



## COLLABORATIONS

### Z43 Projects

The progress of the first 12 months of the project SEAWave – short for *Scientific-based Exposure and risk Assessment of radiofrequency and mm-Wave systems from children to elderly (5G and Beyond)* – was discussed in early July at the third consortium meeting at ANFR in Paris, France. The first SEAWave exposure system has been installed by IT'IS Associate Director Hardware, Myles Capstick, at our partner in Lausanne, while the *in vivo* and *in vitro* systems for SEAWave will be installed in the coming weeks.

In addition, the final meeting of the Horizon 2020 project NeuHeart – *A Neuroprosthesis to Restore the Vagal-Cardiac Closed-Loop Connection after Heart Transplantation* – took place in August. Nearly 40 representatives of the six project partners attended the virtual meeting with European Commission officers to present the final results of the different work packages and to officially conclude the 54-month-long project. The project was demanding but fun, and we look forward to exploring new research avenues with our partners!



### o<sup>2</sup>S<sup>2</sup>PARC Y7 Award

IT'IS is excited to be continuing its work on the o<sup>2</sup>S<sup>2</sup>PARC computational platform under the [NIH SPARC](#) program. In year 7, the focus will be on demonstrating the use of o<sup>2</sup>S<sup>2</sup>PARC to generate regulatory evidence for the safety and efficacy of bioelectronic implants, introducing databases and functionality to explore inter-subject and inter-species variability, adding functionality to facilitate the use of o<sup>2</sup>S<sup>2</sup>PARC for collaborative computational modeling, and considerably strengthening the application programming interface to increase the value of o<sup>2</sup>S<sup>2</sup>PARC for advanced users and developers. More information is available on the IT'IS [website](#), or you can contact us at [info@itis.swiss](mailto:info@itis.swiss).

## VIRTUAL POPULATION



### Posable Pig Model

IT'IS is proud to unveil the Male Pig V1.1. This model is a greatly enhanced version of the original computational model first released in 2012. V1.1 is compatible with ZMT's Sim4Life's poser tool, which allows users to modify the posture of the model to closely approximate experimental conditions. As always, this improved version has been updated according to the Virtual Population quality guidelines. For more information, please contact us at [virtualpopulation@itis.swiss](mailto:virtualpopulation@itis.swiss).

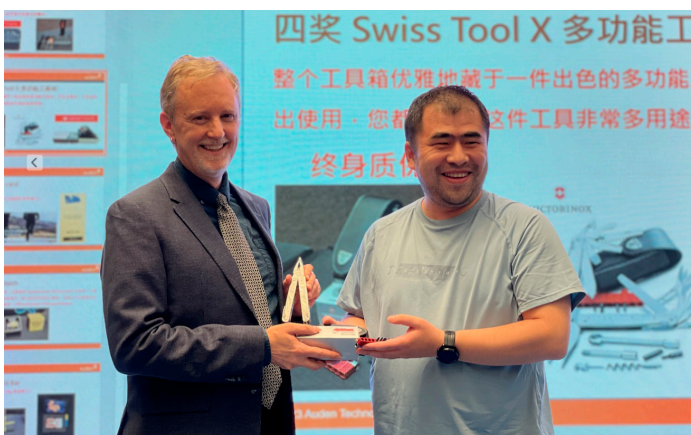
## WORKSHOPS

### Successful Z43–Auden Workshop Series

From July 07 – 14, 2023, Auden Technology Corporation, together with SPEAG and Z43 partners ZMT and TI Solutions, hosted the Z43–Auden Workshop series in Taiwan and China. We presented the latest developments of measurement and simulation tools and the roadmap for our coming releases, including the groundbreaking cloud-native simulation platform, [sim4life.io](http://sim4life.io), to be launched this November. We are extremely grateful to the Auden team for creating once again a vibrant ecosystem where ideas were exchanged, and fruitful connections were made with our important partners and customers from Asia.

### Distributor Week

On September 10 – 15, 2023, SPEAG and ZMT hosted our global sales channel distributor week in Zurich, with representatives from Asia, Southeast Asia, Europe, the Middle East, Africa, North America, and Latin America. It was our annual Face-2-Face meeting, where we provided an outstanding opportunity to showcase our new product innovations, discuss customer opportunities, provide new sales tools, and receive regional market updates on our market sectors. It was an extremely productive week, very focused and a ton of fun. We genuinely appreciate everyone involved for making this a very rewarding week!



## RESEARCH

### PUBLICATIONS

**Obstructive Sleep Apnea Improves with Non-Invasive Hypoglossal Nerve Stimulation Using Temporal Interference**

F. Missey, *et al.* 2023, *Bioelectronic Medicine*, Volume 9, Article No.18, <https://doi.org/10.1186/s42234-023-00120-7> (online 09 August 2023)

**Efficient Prediction of MRI Gradient-Induced Heating for Guiding Safety Testing of Conductive Implants** U. Zanovello, *et al.* 2023, *Magnetic Resonance in Medicine*, Volume 90, Issue 5, pp. 2011–2018, <https://doi.org/10.1002/mrm.29787> (online 29 June 2023)

**Non-Invasive Temporal Interference Electrical Stimulation of The Human Hippocampus**

I. R. Violante, *et al.* 2023, *Nature Neuroscience*, in press

**Noninvasive Theta Burst Stimulation of The Human Striatum Enhances Striatal Activity and Motor Skill Learning**

M. J. Wessel, *et al.* 2023, *Nature Neuroscience*, in press



## Z43 Glowing Night

On September 15, 2023, after a nearly 4-year party hiatus, Z43 hosted its dazzling annual event at ZSG Werfthalle in Zurich Wollishofen. Over 350 enthusiastic guests were transported from the moment they arrived to a world of vibrant nostalgia, as the venue pulsated with the spirit of the 1970s. Thanks to the perfect weather, guests could enjoy the first half of the festivities under the open sky with a stunning view of the Lake of Zurich.

The dress code "dress to glow!" was embraced with gusto, covering everything from bell-bottomed trousers to psychedelic prints, transforming the venue into a riot of colors and patterns that glowed brilliantly under the pulsating blacklights.

As in previous years, the guests were spoiled during the entire night by the caterer [Franzoli](#) with a variety of innovative drinks and specially created dishes while being immersed in the spectacular sound and light installations by [Invasion](#) in the venue design by [Pfeffermint](#).

The Swiss rock band [Tin Soldiers](#) took us on a musical journey with a focus on the 1960's and 70's, seamlessly blending with the lively beats of DJs DJane Nici and Evangelos, creating an electric atmosphere that had everyone on their feet dancing. A couple of special performances further lit up the evening. First up were Z43's sales channels, who delighted everyone with spirited karaoke renditions. A little later in the evening, IT'IS students took the stage to perform with great enthusiasm and creativity a fun neon-inspired dance show act that immediately captivated the audience.

A massive and heartfelt Thank You! to everyone who contributed to this extremely special event, in particular, the organizing team for their achievement in creating an unforgettable night.

Z43  
Glowing  
Night