

WAMICON 2019 Panel Session

Emerging Simulation Technology:

Can today's EDA tools solve tomorrow's designer challenges?

Electronic Design Automation tools for use by RF/microwave and millimeter-wave designers are extremely powerful and multi-dimensional in their capabilities. Today, designers use these tools to strive for first-pass design success of a wide range of challenges including Silicon RFIC design with gate nodes that continue to shrink, GaN MMIC and hybrid PA design, with increasing power densities and thermal problems, mixed signal system design, ever more complex digital waveform requirements, and challenging module and packaged component, antenna and sub-system design. The applications are increasingly diverse in the commercial and military domains, but current trends include increasing frequencies to mm-wave spectrum and the need for being able to combine heterogeneous technologies into a single simulator platform. In addition to the demanding electrical linear and non-linear circuit simulations, today's engineer is expecting the ability to perform thermal simulations, efficiently run accurate full-wave electromagnetic simulations and has raised the bar on device, IC and system level model requirements. What about tomorrow? Are the evolving needs of emerging applications in areas like 5G, IOT and the changing nature of the electronic battlefield easily met with today's tools? What is being done to address the challenges ahead for the engineer of tomorrow? Come and hear from experts at the world's leading simulation tool providers where things are headed and also tell them what you think is really needed.

Moderators: Larry Dunleavy, USF & Modelithics Inc. and Joel Johnson, Harris Corporation

Panelists:

Todd Cutler, Vice President & General Manager, Design and Test Software, Keysight Technologies

John Park, Product Management Director for Advanced Semiconductor Packaging, Cadence Design Systems

John Dunn, Electromagnetic Technologist, AWR Group, National Instruments

Matt Commens, Lead Product Manager, HFSS ANSYS INC.

Theunis Beukman, SIMULIA Applications Manager, Dassault Systèmes (CST)

Format: Panelists will have ~ 5-7 minutes each to introduce themselves, their company and make a brief position statement relative to the central question of the panel. Following that the floor will be open to interactive Q &A with the audience and moderators and we are hoping for a VERY lively and informative discussion.

Panelists' Biographies:

Todd Cutler, Vice President & General Manager, Design and Test Software, Keysight Technologies

Todd Cutler is vice president and general manager of Keysight Technologies Design and Test Software organization. Todd began his career as production engineer in the Network Measurements Division (NMD) of the Hewlett Packard Company (HP), working on the team that developed the HP 8510 network analyzer. He later moved to the Netherlands to become one of the founding employees of the European Marketing Center of the Microwave and Communications Group. Todd then returned to Santa Rosa to NMD where he helped found the computer-aided-engineering group that eventually became EEsof. After a 5-year assignment in software field sales, Todd returned to the division, moving to Westlake Village, CA to help integrate the newly-acquired EEsof business into HP.

In 1998, Todd left HP to be CEO of Eagleware Corporation, the EDA company that pioneered the affordable Genesys RF and microwave design software. After Agilent Technologies spun off from HP, Agilent acquired Eagleware in 2005 and Todd rejoined the company. Todd held various positions before coming general manager of Agilent's EEsof business in 2011. He remained in that role following Keysight's split from Agilent in 2014. In 2015, Todd expanded his role to lead Keysight's Design and Test Software organization.

Todd holds a Bachelor's degree in Electrical Engineering degree from Georgia Tech, and a Master of Science Electrical Engineering degree from Stanford University.



John Park, Product Management Director for Advanced Semiconductor Packaging, Cadence Design Systems

John Park brings over 35 years of design and EDA experience to his role as Product Management Director for Advanced Semiconductor Packaging at Cadence Design Systems. In this role, John leads a team responsible for defining cross-domain solutions and methodologies for IC, package & PCB co-design and analysis.



John Dunn, Electromagnetic Technologist, AWR Group, National Instruments

Dr. Dunn's area of expertise is electromagnetic theory, simulation, and modeling. He has been employed at AWR since 2005, where he is a senior technical marketing contributor, as well as head of AWR's training and education programs. AWR became part of National Instruments in 2013.

Dr. Dunn past experience includes both the worlds of industry and academia. Prior to joining AWR, he was head of the interconnect modeling group at Tektronix, Beaverton, Oregon, for four years. Before entering industry, Dr. Dunn was a professor of electrical engineering at the University of Colorado, Boulder, for fifteen years, from 1986 to 2001, where he lead a research group in the areas of electromagnetic simulation and modeling.

Dr. Dunn received his Ph.D. and M.S. degrees in Applied Physics from Harvard University, Cambridge, MA, and his B.A. in Physics from Carleton College, Northfield, MN. He is a senior member of IEEE.



Matt Commens, Lead Product Manager, HFSS ANSYS INC.

Dr. Matthew Commens first joined ANSYS in 2001 working for Ansoft as an application engineer specializing in high frequency electromagnetic simulation. Prior to Joining ANSYS he worked as an antenna designer and simulation manager at Rangestar Wireless in Aptos, CA and as a nuclear magnetic resonance (NMR) probe designer at Varian Inc. in Palo Alto, CA. He holds five patents in the areas of NMR, antenna design and electromagnetic simulation and holds a Ph.D. in Physics from Washington University in St. Louis, MO. and a B.S. in Physics from University of Missouri-Rolla (now Missouri University of Science and Technology).



Theunis Beukman, SIMULIA Applications Manager, Dassault Systèmes (CST)

Dr. Theunis Beukman is an Applications Manager at Dassault Systèmes in Germany. He joined the CST group in 2015 where he has been responsible for the product planning of software tools related to filters and antenna arrays.

He received his MScEng (cum laude) and PhD degrees in Electronic Engineering from the University of Stellenbosch, South Africa, in 2011 and 2015 respectively. During this time he was also a visiting researcher at other institutions in Europe. At Heriot-Watt University in Scotland he worked on designing tunable wideband filters for radio astronomy applications. During his PhD he spent several months at Chalmers University of Technology in Sweden, working on transition designs for differential LNAs as well as developing a synthesis technique for profiled ridged horns.

