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The Internet of Things — A Personal Perspective
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It is commonly acknowledged that the term Internet of Things (IoT) was created in reference to the introduction of RFID tags in 1999. They represented the first wave of autonomous sensors that enabled computers to observe, identify and understand the world—without the limitations of human-entered data. Since then, the types and numbers of sensors providing this function have increased exponentially. Also, through the use of big data analyses and machine learning, computers are able to analyze inputs of large numbers of sensors and can make rapid decisions based on the input data. We are seeing increasing use of this capability in manufacturing, farming, traffic control, healthcare, and the list goes on and on. We have also witnessed computer networks being hacked and huge amounts of data stolen and misused.

Where is all this heading? This presentation will describe current technical approaches for managing inputs from a large number of sensors and possible options for the future as the number of sensors is expected to increase by many orders of magnitude. It will discuss possible business opportunities for electronics cooling vendors in this new technology landscape. It will also address the bigger picture and speculate on what the future may hold for us, in terms of both benefits and risks.

Dr. Bruce Guenin has spent many years in the electronics and computer industries, which has given him a broad perspective on macro trends in these fields.
His previous affiliations include Oracle, Sun Microsystems, and Amkor. He is on the Editorial Board of Electronics Cooling Magazine and is a past chairman of the JEDEC JC-15 Thermal Standards Committee and the SEMI-THERM Conference. His contributions to the thermal sciences have been recognized by receiving the Harvey Rosten Award in 2004 and the Significant Contributor Award by the Semi-Therm Conference in 2010.
He received a B.S. degree in Physics from Loyola University, New Orleans, and the Ph.D. in Physics from the University of Virginia. He has authored and co-authored over 80 papers and articles in the areas of thermal and stress characterization of microelectronic packages, electrical connectors, solid state physics, and fluid dynamics and has been awarded awarded 18 patents in these areas. As an editor of Electronics Cooling he has contributed, to date, 35 installments of the tutorial column, Calculation Corner.