



B. Gurumoorthy is a Professor at the Indian Institute of Science in the Centre for Product Design and Manufacturing (CPDM) and the Department of Mechanical Engineering. He is presently the chair of CPDM. His research interests are in the areas of CAD, Product Information Modelling, Computational Metrology and, Product design and prototyping. He did his B.Tech at IIT Madras in 1982 followed by M.E. and Ph.D at Carnegie Mellon University, Pittsburgh, USA in 1984 and 1987 respectively (all in Mechanical Engineering). He has guided 11 PhD dissertations and is presently supervising or co-supervising 8 PhD students. He has 34 Journal publications and 2 patents. He serves on the editorial board of four journals. He is presently the Vice-Chair, Asia-Pacific, IFIP WG 5.1 on Global Product Development for the Whole Life Cycle. Two technologies (automatic feature recognition and visual interactive solids) developed in his laboratory have been licensed to industry and are in active use.

Title

Integrating data with knowledge in PLM

Abstract:

The transition from data to information and then to knowledge has been researched in the design research community. With the increasing appreciation of volume and variety of data being generated in manufacturing processes and systems today, this problem is beginning to be perceived in the later phases of the product lifecycle (manufacturing and service). The need to take advantage of this data explosion to bring in efficiencies in the product lifecycle has caused

the PLM community to focus attention on topics of knowledge structuring, data analytics and context awareness. Integrating the data being generated real-time with domain knowledge is the key problem to be addressed in making use of the data. This talk will highlight some of the issues that are being encountered in doing so particularly in the context of manufacturing.

## **Plenary Keynote Speaker**

**Day 3, Wednesday, July 9 AM**

### **Service Thinking: Social Servicescapes of Complex Engineering Systems**

**Prof. Lincoln A Wood**

**The University of Adelaide**



#### **Brief Biography**

Dr Wood graduated in 1973 from the University of New South Wales in Sydney with the degree of Bachelor of Engineering in Aeronautical Engineering. After receiving a Master of Science degree in the USA, he returned to Australia where he completed a PhD program. He has extensive experience in the aerospace, defence and automotive sectors of industry, as well as in academe. His most recent role in industry was as Engineering Director for a defence company in Australia. He is currently Professor of System Engineering at The University of Adelaide where he is developing a research program in system sustainment.

#### **Abstract**

Services are delivered in the context of a physical environment and a social ambience that define the “servicescape”. This term was initially coined to describe consumer and retail marketing settings, and was limited to describing the physical environment even though

servicescapes were always clearly intended to influence social responses. The extended concept of servicescape (that is, physical and social) can be readily applied to the service milieu of complex engineering service systems.

Complex engineering service systems comprise an integrated engineering product system, combined with an extensive array of services to deliver value in use to a community of users. A service may be delivered directly to consumers as in the case of an airline delivering transportation services, or it could be delivered to an enterprise as in the case of “power by the hour” (a Rolls-Royce trade mark) aircraft engine service and support. Each instantiation of this service concept is customised to suit business and user purposes, but they are all based upon complex engineering products that are inherently critical in safety, security or societal terms.

In this presentation, social servicescapes of complex engineering service systems are described and characterised. The role of service thinking in setting the service tone by discerning the “mind of the customer”, so essential to customer satisfaction, is then explained.

**Plenary Keynote Speaker**  
**Day 1, Monday, July 7, AM**

**Breakthrough by Extensive Application of Lifecycle Management and Systems Design Approaches beyond Boundaries**

**Prof. Yoshiaki Ohkami, Immediate Past Dean and Advisor to Institute of System Design and Management, Keio University**



**Brief Biography**

Yoshiaki Ohkami obtained Dr. Engineering in Control Engineering from Tokyo Institute of Technology and worked for National Aerospace Laboratory as research engineer on spacecraft control and large space systems (1968-1992). During this period, he worked as visiting scholar at UCLA under NASA/MSFC contract and Deputy Director for Space Station Program of Japan. He became professor at Tokyo Institute of Technology (1992-1999), and at Keio University (1999-2005) while serving as Research Inspector at JAXA Space Center. Now he serves as Advisor for Institute of Systems Design and Management, Keio University. Major fields include Strategic Systems Engineering,

Dynamics and Control of Mechanical Systems, and Field Robotics. He is a fellow of JSME and the INCOSE, and member of ASME, IEEE and Japan Society for Aeronautical and Space Sciences.

### **Abstract**

After having enjoyed prosperous and animated period of economic growth until the middle of 1980's, engineering and social systems of Japan have encountered a difficult time with many issues to resolve, especially in higher levels of social systems. However, most of these issues could be overcome if we employ a kind of boundary-free approaches. Boundary may be geographical, organizational, political and so on. By comparing successful examples and best practices with failures and lessons learned, the presenter intends to demonstrate that Japanese are reluctant to accept and prioritization of tiered structures and that realizable solutions are feasible for apparently difficult situations if we start with lifecycle considerations at first. Such topics will be covered as nuclear power plant operations in energy and ecology issues, road networks for the weak of transportation systems, sightseeing business by preserving natural landscape. Also includes are recent happenings such as agriculture-fishery conflict at Isahaya water gate, rapid population decrease and stationary employment, and so on. All of these examples shows importance of systems design with lifecycle management. "Think the end before start" as da Vinci said.