Professor Thas Nirmalathas

Biography: Professor Thas Nirmalathas is the Director of Melbourne Networked Society Institute which is an interdisciplinary research institute focusing on challenges and opportunities arising from society's transition to a networked society. He also provides the academic leadership to the Melbourne Accelerator Programs (MAP) which he co-founded to support entrepreneurial activities of the University Community through business acceleration models. Prof Nirmalathas obtained his BEng and PhD in Electrical and Electronic Engineering from the University of Melbourne in 1993 and 1998 respectively. Between 2000 and 2004, he was the Director of Photonics Research Laboratory (Melbourne Node of Australian Photonics CRC) and also the Program Leader of Telecommunications Technologies Program. From 2004 to 2006, he was the Program Leader for the Network Technologies Research Program in NICTA. He was also the acting Lab Director of VRL in 2007. Between 2006 and 2008, He was the Research Group Manager of the Networked Systems Group of Victoria Research Laboratory (VRL) at the National ICT Australia (NICTA), a premier Australian research centre of excellence in ICT. Between 2010 and 2012, he was the Head, Department of Electrical and Electronic Engineering at the University of Melbourne. He has written more than 400 technical articles. His research interests include microwave photonics, optical-wireless network integration, broadband networks, internet of things, and scalability of telecom and Internet services. He has serviced as chair of steering committees of Asia Pacific Microwave Photonics and IEEE Topical Meeting on Microwave Photonics Conference series in 2008/2009. He is also a member of the Steering Committee for the International Conference on Optical Internet (COIN). He was also Guest Editor for Special Issue on Opto-Electronics and Communications of the IEICE Transactions in Communications. He was the General Co-Chair of 2008 IEEE Topical Meeting on Microwave Photonics/ Asia Pacific Microwave Photonics 2008. He is currently an Associate Editor of IEEE/OSA Journal of Lightwave Technology. He is a Senior Member of IEEE, a member of Optical Society of America and a Fellow of the Institution of Engineers Australia.

Session Title: Sustainable Growth of Network Services – Accounting the energy consumption at a service level and Balancing the Use-Phase and Embodied Energy Consumption

Abstract: Managing the growth of the Internet in a sustainable manner has become a major challenge as the network traffic continues to grow and a significant energy efficiency gains are needed to keep the energy consumption of the network infrastructure to a sustainable level. This presentation will discuss a framework for understanding and analyzing the energy consumption at service level and lay the foundation for the development of a sustainable growth model for the Internet. A modelling of the energy consumption of over-the-top (OTT) mobile wireless services for example will be used to illustrate how network energy consumption can be linked to consumption at a service level. Taking a total energy consumption perspective, a sustainable growth model balancing the use-phase and embodied energy consumption will be discussed.