



**Prof. John S Fitzgerald**

Professor of Computing Science and Research Director  
Newcastle University - UK

Title of Presentation:

SoS Engineering Research and Practice in Academia: Hard Challenges and Great Opportunities

Abstract:

Thanks to pioneering work in both the EU and US, SoS Engineering is becoming an increasingly vibrant discipline. We will first discuss some pressing challenges for research, particularly the need to develop semantic foundations, as well as methods and tools, that raise the capability of engineers to work confidently across organization and discipline boundaries. We will look at the significant consequences of this for the development of educational curricula for both engineers and researchers. Finally, as we look to cyber-physical SoSs, we will discuss the increasingly exciting opportunities for SoS Engineering and SoS Thinking to have a positive social and industrial impact.

Short bio:

John Fitzgerald has worked on model-based methods for over 20 years in academia and industry, and has been involved in their successful application in areas as diverse as chip design and options trading. He is now a full professor in Computing Science at Newcastle University, where he leads the model-based engineering research group, and is establishing the new Newcastle Cyber-Physical Lab: a joint venture between computing, electrical and transport engineering. He headed the EU's Framework 7 Integrated Project COMPASS on model-based engineering for Systems of Systems – work that carries forward into several new Horizon 2020 projects on collaborative design for cyber-physical systems. At present, he is playing a leading role in the design of Newcastle University's new 80million Euro facility and building for research and teaching in computing, urban systems and sustainability.