The Institution of Engineering and Technology | China

PRESTIGE LECTURE 2017

Robotics: Towards zero manual intervention

November 2017

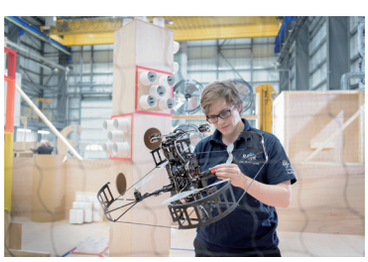
About the speaker

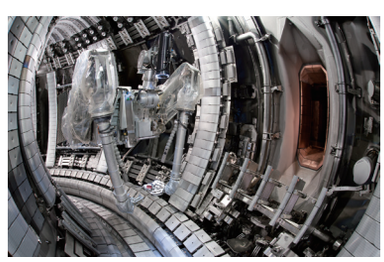
Dr Rob Buckingham FREng,FIET

Rob is a Director of the UK Atomic Energy Authority (UKAEA) and the first Head of RACE, the UK's new centre for Remote Applications in Challenging Environments. Rob was a lead author of the UK's Robotics and Autonomous Systems Strategy. Before joining the UKAEA, Rob co-founded and was Managing Director of OC Robotics which developed and commercialised snake-arm robots. He is a Fellow of the Royal Academy of Engineering and a Fellow of the Institute of Engineering and Technology.

Abstract of lecture

UK strategy recognises the significance of robotics for challenging environments in order to provide safe, reliable and re-usable solutions. The talk will consider the potential for advanced AI techniques, including deep learning, in conjunction with increasingly commoditised robot hardware to address common issues including inspection and remote maintenance interventions. Two uses cases will be explored: 1) autonomous vehicles as a vanguard application of robotics which has the potential to be the breakthrough technology; 2) fusion offers huge potential for large scale base load electricity supply. Research shows that manual maintenance of a future fusion reactor is not credible. This leads to remote maintenance being both device defining and mission critical. RACE's research has much wider cross sector impact, including space exploration and under water mining, all of which is being addressed under the RACE technology roadmap called 'RACE to ZERO'.





Supported by:

UK Atomic Energy Authority

RACE