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Automatic
Control and
Systems
Engineering

The Department of Automatic Control & Systems Engineering
is pleased to announce the following seminar:

Robustness challenges of cyber-physical systems

Professor Dr Karl Heinz Kienitz

Instituto Tecnológico de Aeronáutica, Brazil

Wednesday, 29 June 2016 at 14:00

LT02, Sir Henry Stephenson Building

Abstract

Cyber-physical systems cannot be thought away, although their presence may often be annoying or worse, particularly when delivered behavior/performance does not match expectations. The property of matching expectations in every (admissible) circumstance may be termed robustness, and design for it is critical in providing dependable systems.

The talk will focus on the implications for Systems and Control Engineering. A number of application examples – in-flight simulation, limit cycle control, tight formation flight control, and virtual sepsis patient design – are used to illustrate the multifaceted challenges entailed by the situation. It is then proposed that robustness shall be pursued by adequate design strategy, meaning thereby the coupled choice of suitable synthesis methods and modeling alternatives/options for the system, as well as the expectations. The talk concludes with a brief description of planned research and some of the problems that are to be faced therein.

Biography

Karl Heinz Kienitz studied Electronics Engineering at Instituto Tecnológico de Aeronáutica (ITA). He then served as an Engineering Officer of the Brazilian Air Force for over 10 years. During this time he also earned a PhD degree in Electrical Engineering at ETH Zürich. Karl left active duty to become a faculty member at ITA in 1993. He was a Humboldt Research Fellow at the German Aerospace Research Center in 1996/7 and 2004/5, and a visiting scientist at TU Berlin in 2012/3.

*Light refreshments will be served in the
foyer of the Sir Henry Stephenson Building following the seminar*