

SARChI Chair in Advanced Sensor Networks

Due to its standing in the local and international research community, the Advanced Sensor Networks (ASN) Group in the Department of Electrical, Electronic and Computer Engineering was awarded a Research Chair in ASN under the South African Research Chairs Initiative (SARChI).

The research chair is co-hosted by the Department's ASN Group and the Meraka Institute at the Council of Scientific and Industrial Research (CSIR) under the digital@SERA partnership.

The ASN Group is a leading hub of research and development in the field of ASN. It was established in 2005 by Prof Gerhard Hancke, and aims to be a focal point in the creation of a critical mass in this key field, partnering with local and overseas academic institutions, research organisations and industry.

The application of ASN technology can result in intelligent environments that are able to monitor themselves and take proactive steps without human intervention. ASN refers to the set of technologies and disciplines that allow

distributed embedded systems to cooperatively sense, decide, learn and act in real-time to achieve certain goals. This can revolutionise our understanding and control of the physical world.

This field has a vast and diverse application potential, which spans spheres such as manufacturing, agriculture, the natural environment, the built environment, security, the military and medicine.

The SARChI chair, which was officially launched on 1 January 2015, will form a vital part of the activities of the ASN Group. It is headed by Prof Attahiru Alfa, a professor of tele-communication systems in the Department of Electrical and Computer Engineering at the University of Manitoba, Canada, who will

make a significant contribution to the research outputs of the Department of Electrical, Electronic and Computer Engineering at the University of Pretoria.

The focus of this research programme is building research capacity in the area of ASN. The first five years of the programme will target research on the mathematical aspects of wireless sensor networks (WSN), while the subsequent five-year programme will focus on hardware, test beds and implementation aspects.

The applications to be considered will have major national interest, especially in wildlife monitoring, soil and in-situ soil moisture analysis (for viticulture), home security, infrastructure health monitoring and human health care.



Prof Gerhard Hancke, Head of the Advanced Sensor Networks Group (left), Prof Attahiru Alfa, incumbent of the SARChI Chair in Advanced Sensor Networks, and Prof Sunil Maharaj, Dean of the Faculty of Engineering, Built Environment and Information Technology (right).