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UPCOMING CONFERENCES

Little Crow Conference

We have our 8th Little Crow conference on the 23rd May 2013 at IMT in Simon's Town. The program for this afternoon only conference will be made available soon.

Big Crow International Conference 7th November 2012

The Aardvark Roost's 3rd biennial International Conference will be held on the 4th and 5th September 2013 at the CSIR's International Convention Centre in Pretoria.

The theme is: **Management of the Electromagnetic Spectrum (EMS) in the modern scenario of irregular warfare conducted in current operational environments.**

The Call-For-Papers is available as an attachment to this newsletter, or on the Aardvark's website, www.aardvarkaoc.co.za.

As part of the drive to get more young people exposed to and involved in EW, a dedicated section of the conference will showcase some of the work done by students at various South African universities in the field of EW (DOD's Ledger program).

During the preceding day (3rd September) the South African Radar Interest Group (SARIG) will host a radar conference in the same venue. Ledger students will also participate in this conference. A separate call for papers will be sent out for this event.

SOCIAL MEDIA

Cobus Boshoff opened (and will administrate) a Facebook and a Twitter account for the *Aardvark Roost*.

CONTRIBUTIONS

This newsletter will be sent out roughly on a quarterly basis to the South African EW interest group (currently more than 500 people). If you want to contribute with any article/news, please feel free to send it to Christo Cloete (ccloete@csir.co.za) for inclusion in the next newsletter. Also, if you know of people interested in EW that are currently not on the distribution list, please will you send Christo their contact details.



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PRESIDENT OF THE AARDVARK ROOST

The latest message from the Aardvark Roost's outgoing president, Gerrie Radloff, is now available on our website www.aardvarkaoc.co.za

In his message, titled *Become Involved*, Gerrie addresses some of the highlights of last four years. He also expresses his appreciation for all the individuals and companies that assisted and contributed to the Aardvark Roost. He does, however, call for more involvement from the EW community to ensure further progress.

Gerrie handed over the reins of the Aardvark Roost to Christo Cloete at the end of February, but will remain on the board of directors as the outgoing president for another year.

The EW community would like to thank Gerrie for his passion and commitment towards the Aardvark Roost – his dedication contributed hugely towards the successes of the Aardvark Roost.

SKILLS DEVELOPMENT

To address the growing need for skilled engineers and scientists in the challenging fields of Electronic Warfare and Radar, a Chair in Electronic Defence Research was appointed at the University of Pretoria and a Masters in Engineering (with a focus on Radar and Electronic Defence) program was established at the University of Cape Town.

Chair in Electronic Defence Research Appointed at the University of Pretoria

The establishment of a research chair in the field of Electronic Warfare (EW) at the University of Pretoria was announced at the 2012 Africa Aerospace and Defence (AAD) Exhibition. This new chair has been established by the Council for Scientific and Industrial Research (CSIR) in Pretoria, South Africa and the King Abdulaziz City for Science and Technology (KACST) in Riyadh, Saudi Arabia. Prof. Warren du Plessis has since been appointed in this role.

Prof. du Plessis has been working in EW and radar since 2006. During this time, he has worked on a variety of projects including radar system design and a variety of EW research projects. Prof. du Plessis received his Ph.D. from the University of Pretoria in 2010 for his work on cross-eye jamming. He is a registered Professional Engineer (Pr. Eng.), a Senior Member of the Institute for Electrical and Electronics Engineers (IEEE), a member of the Association of Old Crows (AOC), and the holder of a Y1 rating from the National Research Foundation (NRF). While best known for his work on cross-eye jamming, Prof. du Plessis has also published in a number of other fields related to EW including communications intercept (COMINT) receiver architecture, the meaning of EW and its relationships to other similar fields, and thinned antenna arrays.

The main goals of this new research chair are to perform innovative research in the field of EW and to train a new generation of EW professionals. Says du Plessis: "While the goals of research and training might appear contradictory, they are in fact, two sides of the same coin. It is impossible to perform cutting-edge research without an excellent understanding of the current state of the art, so training is inherently a crucial part of research."

A new postgraduate module in EW was successfully presented in 2012 and serves as a basis for masters-degree studies in EW. The research focus of the university means that such studies will focus on solving problems relevant to the EW community rather than merely on courses and examinations. Du Plessis explains "We believe that allowing our students to tackle real problems will allow them to develop the skills required to be successful EW professionals rather than only building theoretical knowledge through coursework."

Forming this partnership with the University of Pretoria was a natural choice as its School of Engineering is rated among the top 1% in the world. The Department of Electrical, Electronic and Computer Engineering is the largest department of its type in South Africa, allowing the appointment of experts in the relevant fields. A clear demonstration of this commitment to excellence is shown by the fact that the department numbers one NRF A-rated researcher ("Leading international researcher"), four NRF B-rated researchers ("Internationally acclaimed researcher"), five NRF C-rated researchers ("Established Researcher"), one NRF Y-rated researcher ("Promising



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young researcher”), two Fellows of the Institute for Electrical and Electronics Engineers (IEEE) and a number of Senior Members of the IEEE among its staff. This combination of both quantity and quality makes the University of Pretoria the ideal partner for EW research which inherently requires expert knowledge in a wide variety of related fields.

“This is a tremendous opportunity for us to apply our existing research and training capability to a field that is of ever-increasing importance, and we look forward to collaborating with both local and international stakeholders” said Prof. Sunil Maharaj, the Head of the Department of Electrical, Electronic and Computer Engineering at the University of Pretoria.

Prof Warren du Plessis contact details can be found at:

<http://www.ee.up.ac.za/main/en/personnel/wduplessis/index>),

UCT/CSIR Masters in Engineering (with a focus on Radar and Electronic Defence)

The University of Cape Town (UCT) and the Council of Science and Industrial Research (CSIR), in conjunction with international partners and industrial sponsors, have established a Masters Degree in Engineering. Hosted in Cape Town, South Africa, students studying towards this degree will focus on relevant theory, technologies and applications with both coursework and project components. The programme had its first intake of students in February 2011.

The planned Masters Degree will require students to complete at least 120 credits of course work (with 1 credit constituting 10 notional hours of learning), and a research project contributing 60 credits, to a degree total of at least 180 credits. The degree is named, M.Eng. (Radar).

The course will begin with an introduction to radar and then cover radar and signal data processing; electronic defence; antenna theory; radar and electronic defence maths; target tracking; clutter and detection in clutter; and high resolution and imaging radar.

Some of the lecturers will be from overseas universities, UCT, the University of Stellenbosch and the CSIR DPSS (CSIR Defence, Peace, Safety and Security). These modules can also be attended purely from a career development point of view as well.

Regarding the EW module, the course aims are to introduce the student to Electronic Defence. A good prior knowledge on the topics of digital signal processing, electromagnetics, mathematics and statistics is highly recommended for this course. A relatively good knowledge of radar and a moderate knowledge of communications would be very beneficial to students. Students should be competent in using scientific programming languages such as Matlab or Octave. Students have to master fundamental concepts in Electronic Defence on a high-level (identification of tactics and applications) as well as on a detail level (the design of a suitable detector to required specifications). Students are required to link theoretical concepts in Electronic Defence to typical applications and to solve problems of an engineering nature.

Detailed information regarding this program is available at <https://sites.google.com/site/radarmasters/>

PERSONNEL MOVEMENTS IN THE ARMSCOR ENVIRONMENT

Lewis Mathieson who was head of Radar and EW at Armscor for several years, was promoted to a position of General Manager Research and Development, a department of Armscor on 1 February 2013. He supported the Aardvark Roost since its resuscitation in 2008 through sponsorship and attendance of its conferences. He also gave some informative presentations at some of the Aardvark Roost conferences. During his tenure as head Radar and EW he managed to recruit 7 black engineers, each with a minimum of BSc E Engineering and some with MSc E Engineering. These engineers were introduced into Radar and EW field with a focused mentoring program which he fully supported. He is however not completely lost to the Radar and EW community since his new role should allow him to support this community with R&D funding. Molahlegi Molohe is now the acting Radar and EW head at Armscor and he has been in this environment since 2006.