The 2007 IEEE Africon Conference was held in Windhoek, Namibia, on 26 – 28 September 2007.

This first of three special issues contains papers which were presented at the conference; the authors of which were subsequently invited to submit an expanded manuscript for publication. These papers cover a number of topics of considerable interest – in the general and specific sense.

Four papers are presented in this issue; three involve various aspects of wireless communications technology, while the last one covers systems design.

The first paper describes a graphical method for CDMA coding in mobile wireless systems. With bandwidth remaining a premium commodity, better coding methods are critical to make the best and most efficient use of that bandwidth.

The second paper also describes a method for signal coding in wireless communications. In this case, the focus is on using improved coding to reduce wasteful interference between and among wireless devices.

The third paper describes a CAD method of analysing on-chip spiral inductors in RF-CMOS circuit design. Inductors have always been an element of RF circuits, but they are not a natural part of integrated circuit process technology; their addition to process technology requires detailed analysis of the inductor and the parasitic elements inherent in an IC-based silicon manufacturing process.

The fourth paper evaluates the operating conditions for the sustained flight of solar-powered unmanned aerial vehicles (UAVs). UAVs have become a highly visible technology in recent years, most notably in their increasing size, range, capability – and potency. If a UAV can draw and store sufficient solar power to continue to operate during the dark part of the normal diurnal variation, then it can remain airborne indefinitely.

These papers provide an interesting sample of the work presented at IEEE Africon 2007; we hope that you find them interesting and informative.

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Guest Editors