Abstract

Cellular coverage is often a challenge in low population density and low income rural areas of the developing world like Tanzania. This is because big Telecom companies defer from deploying their expensive infrastructure in these areas fearing operations cost. It is proposed that the use of cellular open source technology as the basis for a new rural cellular network can go a long way in meeting this challenge by providing coverage in rural areas whilst simultaneously bringing down the cost of communication. This paper provides survey of recent open source cellular technologies. It further presents a prototype based on Open BTS for cellular connectivity in developing countries. In lab performance test for the proposed prototype confirm the feasibility of deploying cellular network based on open source technologies as an alternative to conventional mobile operator networks in a bid to solve the challenge.

References

2. OpenBTS 4.0 offers new opportunities for Africa's mobile operators targeting remote locations and the transition to IP, 2014.


Index Terms

Computer Science
Networks
Keywords

SDR, Open source, Cellular technologies, OpenBTS, GSM