A Systematic Review on the Deployment of Massive Multiple-Input-Multiple-Output (MIMO) in Next-Generation Wireless Systems: Challenges and Prospects

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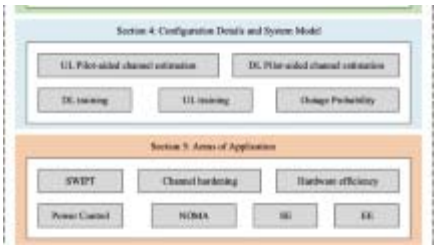
Abstract

The fifth generation (5G) wireless network systems is also known as worldwide wireless web (W4) because based on laid-out expectations, it does not require limitations. Though 5G is not fully deployed at present, one major technology that will contribute immensely to its reality is massive MIMO. There are, however challenges associated with it which serve as goldmines for future work. This review is aimed at gaining understanding of the laid-out specifications of 5G networks, the operation of massive MIMO as a technology for 5G and the challenges to be addressed by future work to enable the effective deployment of the technology to future generation networks. Various searches in science direct, Google scholar and IEEE Xplore are carried out to obtain all relevant studies. Papers that were considered range from the years 2010 through 2017 to ensure that current information is retrieved. From initial search processes, a total of about 500 papers that were related to the subject matter were retrieved. Out of about 70 filtered studies from the total obtained, 15 were selected after detailed analysis. This review will help to enhance further research works in massive MIMO technology as it exposes the associated limitations as well as some of the related areas being subjected to current research and investigation.



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