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A Review of Interference Challenges on Integrated 5G NR and NB- IoT Networks

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Abstract

Technology is expanding at a higher rate and because of this expansion there is a global transition from 4th Generation (4G) to 5th Generation (5G) due to the steep rise in the demand of users and challenges which are not addressed effectively by the 4G. The 3GPP standards which in full is 3rd Generation Partnership Project have given 5G the name New Radio (NR) in which it reuses the spectrum allocated for both (NB-IoT) Narrowband Internet of Things and 4G. There are different elements which contribute to an interference named Narrowband Interference (NBI) which is caused by spectrum reuse of NR, NB-IoT and (LTE) Long Term Evolution, thus leads to mismatch of sampling rate and performance degradation. This paper presents a survey of these interference challenges. The main contribution of this paper is to comprehensively analyse different classifications to possibly assist the form of coexistence of 5G NR NB-IoT and LTE. Different approaches were analysed, their strength and limitations in various literatures, however the interference mitigation scheme is still an open gap determined.