

Source: Telefónica
Title: pCR for massive MIMO considerations
Agenda Item: 9.2.1
Document for: Decision

1 Introduction

Doc RP-161683 has introduced the justification to include statements on TR 38.913, in order to take into account specific requirements for future NR massive MIMO.

2 Text proposal to TR38.913

10.9 Cost-related requirements

10.9.1 Balance of complexity and performance

The cost of introduction of massive MIMO technology is impacted by the analog parts, which are directly related with RF performance requirements. Since massive MIMO is seen as a key technology for NR, the requirements levels must be chosen carefully and careful consideration of how they are defined must be undertaken, in order to enable economically viable deployments. This applies for all types of NR deployments, but is of particular importance for massive MIMO nodes employing Active Antenna Systems, or Advanced Antenna Systems in a more general sense.

In particular, some RF requirements may need more careful consideration, such as the out of band emission limits and the maximum ratio between overall system power and individual power per RF chain/antenna element. In addition to the implied complexity and cost, the RF requirements must be defined with co-existence and sharing performance in mind and respecting regulatory limits. Particular care has to be taken in how to define unwanted emission limits with respect to the increasing size of the massive MIMO configuration in a proper way that does not lead to excessively high unwanted emission.

10.9.2 Low-cost requirements

3GPP shall support ultra-low cost network infrastructures, ultra-low cost devices, and ultra-low cost operation and maintenance to enable economically viable deployments for the Provision of minimal services (Data and Voice) for very low-ARPU areas.