

ABSTRACT

In a cellular communication with multiple operators operating in adjacent geographic areas that cause irresponsible people to design illegal repeaters that are made outside the operator's standards in order to gain personal benefits but are detrimental to the operator as they may cause high interference effects, one of the indicators is the discovery of RTWP (Received Total Wideband Power) problems which became one of the main contributors to the decline in QoS on the mobile communication network, CSSR (Call Setup Success Rate).

RTWP is the total power received on the W-CDMA network (Node-B), including the received noise generated from the receiver. This RTWP value can be an indicator used as an indicator when a site experiences uplink interference. According to the ITU-T standards, the ideal RTWP values are between -115 dB to -90 dB, and CSSR is one of the key performance indicators of KPIs used by operators to assess network performance. CSSR have a direct effect on customer satisfaction with the services provided by the network and its operators. According to the ITU-T standards, the ideal CSSR value should reach > 95%.

In this final project, things done on Node-B in the Benoa Port were the installation of RF Filter, both internal and external identification on Node-B with RTWP problems, and a CSSR improvement which was achieved after the implementation of RF Filter on Node-B with drive test using the TEMS and G-Net Track and collect data measurement U2000.

From the research that has been done, it was found that the value of RF filter can reduce the noise of 35.31 dBm, so the previous RTWP value which was very high, -71,00 dBm, after the installation of RF filter was improved to -111.00 dBm. And on the drive test field test, the RSCP has improved to -66.00 dBm and E_c/N_o also improved to -5.00 dB.

Keywords: RTWP, CSSR, RF Filter