

ABSTRACT

Wideband Code Division Multiple Access is a Third Generation of Technology by 3GPP, that in present time was interested and are in progress for more and more efficiently in use of operator. WCDMA provide many type of service called multiservice on packet switched that use a different bitrate on each other depend on the user activity. Generally, dimensioning process in Node B were done without calculate the factors of limitation on their basic technology, like the limitation on availability of power, the effect of interference between user because of the sharing frequency system, and availability of OVSF code that use to spread the information bits when the transmission process depend the service are used.

Dimensioning is the initial phase of network planning, the capacity requirements and the overall quality of service targets determine the selection of the RAN transport network and the transport interfaces of Node B and RNC. The calculation and analyze that were done are to get the result of how many a maximum capacity for that cell with keep attention about the limitations of this technology and calculate how many resources that we have to provide to offer that throughput.

There is a few steps that we have to do to dimension the capacity of WCDMA, first is to combine the traffic mix from user existing for all RAB type and calculate how many channels are supported for the network. Dimensioning have to be done on maximum load at 50% for uplink and downlink, and next we have to assess the availability OVSF code to make sure in overload condition all channel that are used get the OVSF code. And for the last, we calculate how many resources are channel elements and Iub interface have to provide to offer that final throughput output.

From the calculation, throughput allocation that offered by one Node B is 1543 Kbps for downlink and 1708 Kbps for uplink. For resources, we have to provide 233 of channel elements for downlink and 252 of channel elements for uplink, and for Iub *interface* we have allocate 3469 Kbps for downlink and 3498 Kbps for uplink bandwidth.

This final project had been result some detailed steps on Node B capacity dimensioning that can be uses for reference for dimensioning capacity of Node B in a whole Node B on the PT. Telekomunikasi Seluler network. And at this paper, learn much about the basic concept of the dimensioning process on WCDMA system.