## *ABSTRACT*

*In cellular communication system, sectorization in one of way to increase Base Transceiver Station (BTS) capacity. In Code Division Multiple Access (CDMA) network with 3-sectoral BTS, every BTS's sector determined with each unique code that called PN sequence.*

*Each usable PN sequence is defined by PN offset. Because of PN offset limitation, that's why we need more efficient PN planning method. The goal is to map every available PN offset to each sector of BTS. The most important factor in PN offset planning is to avoid PN confusion effect. This is the condition where MS detect 2 or more aliasing PN offset, so that MS will confused which BTS's sector that serving it.*

*This research determine an optimum PILOT_INC and SRCH_WIN_A parameter that be used in PN offset planning. PILOT_INC parameter choose based on total BTS number in CDMA network, and PILOT_INC parameter have a specific function to determine minimum distance between PN offset, while SRCH_WIN_A parameter have a major role to avoid the existence of 2 PN offset can be detected by MS in the same time. By determining these parameter with accurately hence the factor causing PN confusion that is Adjacent PN offset and Co PN offset will be able to avoid.*

*Result of this research is obtain a more efficient PN planning method, where all PN offset can be mapped to all BTS's sector in the network. If number of BTS more than number of PN offset, we can do re-use PN offset procedure. Beside that this PN offset planning will accommodate a non-homogenic network configuration.*

*In this planning, to avoid PN confusion effect needed the condition where separation distance between PN offset added by 2x BTS radius have to be more greater than average distance of all BTS in network. In that way, the CDMA2000 network still in good performance or progressively more better.*

*Keyword : CDMA2000, PN offset, PILOT_INC, SRCH_WIN_A.*