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Mobile Network Communication Systems
2020/2021

GSM_05
E

1 Zadaní

ZADÁNÍ E				
Parametr	Aktivní buňka		Nejlepší sousední buňka	
MCC	230		230	
MNC	2		2	
LAC	226		226	
CI	4343		876	
rxlev_access_min	-87	dBm	-95	dBm
ms_txpwr_max_cch	27	dBm	26	dBm
cell_reselect_param_ind	1	ano	1	ano
cell_reselect_offset	62	dBm	30	dBm
temporary_offset	50	dBm	40	dBm
penalty_time	260	s	320	s
cell_reselect_hysteresis	2	dBm	5	dBm
rxlev_average	-86	dBm	-85	dBm
Doba existence na seznamu nejlepších 6 buněk	-		160	s
Výkonová třída mobilní stanice	29		dBm	
Doba trvání poměrů parametrů aktivní a nejlepší sousední buňky			6s	
Doba poslední resekce	28		s	

Figure 1: My laboratory assignment - group E

2 Calculations - Solution

$$C1_s = (A - \max(B, 0))$$

$$A = RxLev_Average - RxLev_Access_Min$$

$$A = -86 - (-87) = 1 \text{ dB}$$

$$B = MS_TxPwr_Max_CCH - MS_Max_TxPwr_Class$$

$$B = 27 - 29 = -2 \text{ dB}$$

$$C1_s = (1 - \max(-2, 0)) = 1 \text{ dB}$$

$$C1_n = (A - \max(B, 0))$$

$$A = -85 - (-95) = 10 \text{ dB}$$

$$B = 26 - 29 = -3 \text{ dB}$$

$$C1_n = (10 - \max(-3, 0)) = 10 \text{ dB}$$

$C1_s < C1_n$ But in our case the decision that the parameter C2 is needed is indicated by the parameter **CELL_RESELECT_PARAM_IND = 1**, which means C2 should be used for the cell selection **C2**

$$PT = 260s < 640s \rightarrow H(x) = 0$$

$$C2_s = C1_s + Cell_Reselect_Offset - Temporary_Offset * H(x)$$

$$C2_s = 1 + 62 - 50 * 0 = \mathbf{63 \text{ dB}}$$

The $PT(320s) < 640s$ and $PT(320s) > T(160s) \rightarrow H(x) = 1$ which therefore applies:

$$C2_n = C1_n + Cell_Reselect_Offset - Temporary_Offset * H(x) =$$

$$C2_n = 10 + 30 - 40 * 1 = \mathbf{0 \text{ dB}}$$

We can see that the neighboring cell is not located in a different area from the parameter LAC. The LAC values for both the active cell and the best neighboring cell are **226**. Therefore, this cell is not disadvantaged by the parameter: **Cell_Reselect_Hysteresis_s = 2**.

3 Conclusion

The reselection **will not happen** because **C2_n < C2_s**