

Cellular Frequency in ASIA

Country in Asia who use	BAND	Uplink (MHz)	Downlink (MHz)	Channel Spacing	System Standard Used
Cambodia, Laos, Malaysia, Vietnam	450	450-460	460-470	1.25Mhz	CDMA/1x/EVDO
Most of ASIA	800	806-824	851-869	25 Khz	LMR, Tetra, iDEN
Australia, India, Indonesia, Japan*, Korea, Malaysia, New Zealand	850	824-849	869-894	1.25Mh (CDMA) 5Mhz (WCDMA)	CDMA/1x/EVDO, WCMA
All ASIA except Japan & Korea	EGSM	880-915	925-960	200 Khz	GSM-900, EDGE
Japan	PDC	940-956 1477-1501	810-826 1429-1453	25 Khz	PCM TDMA (Japan Standard)
Japan	UMTS-FDD (Japan)	1710-1785	1805-1880	1.25Mhz	WCDMA
All ASIA except Japan & Korea	DCS	1710-1785	1805-1880	200 Khz	GSM 1800, EDGE
China, Japan, Taiwan, Thailand	PHS	1895-1918 (TDD)		300 Khz	PHS TDD
Indonesia, Thailand	PCS	1850-1910	1930-1950	-	CDMA/1x/EVDO
All ASIA	UMTS-FDD	1920-1980	2110-2170	5 Mhz	WCDMA
Australia, Japan, Malaysia, Singapore	UMTS TDD	1900-1920(TDD) 2010-2025(TDD)		5 Mhz	TD-CDMA

* In Japan, CDMA uplink and Downlink are inverted

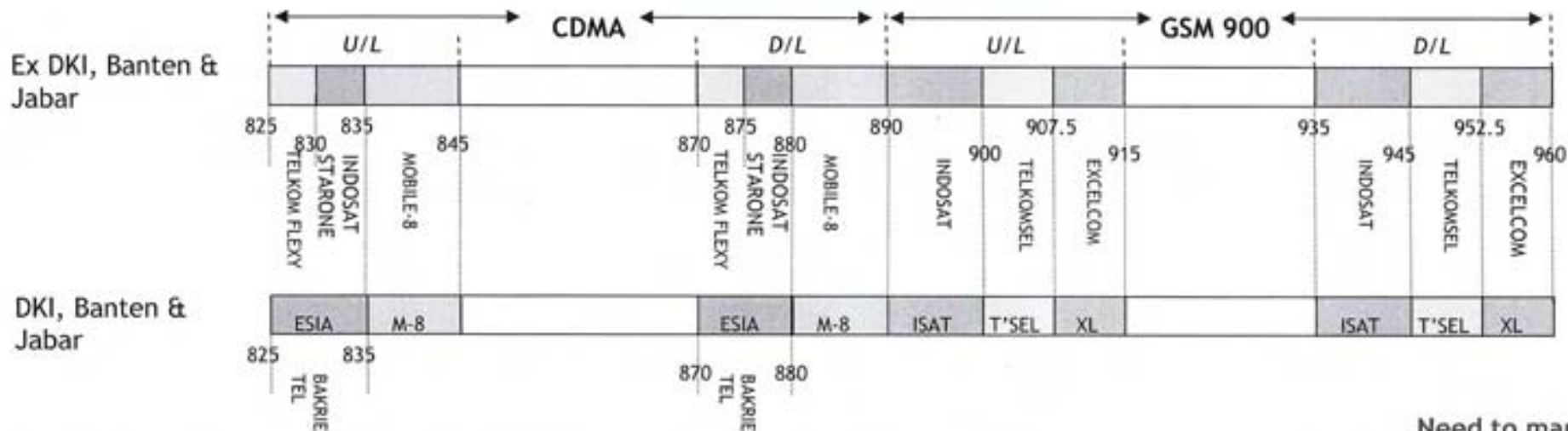
Cellular Frequency in Indonesia

Operators	Services	Up link	Down link	Spacing @ same Operator	
		Freq (MHz)	Freq (MHz)	Tx-Tx	Tx-Rx
Esia (Bakrie)	CDMA 800	825 - 830	870 - 875	5Mhz	40Mhz
Flexi (Telkom)	CDMA 800	830 - 835	875 - 880	5Mhz	40Mhz
Fren (Mobile-8)	CDMA 800	835 - 840	880 - 885	5Mhz	40Mhz
StarOne (Indosat)	CDMA 800	840 - 845	885 - 890	10Mhz	40Mhz
INDOSAT - SAT	GSM 900	890 - 900	935 - 945	10Mhz	45Mhz
Telkomsel	GSM 900	900 - 907.5	945.2 - 952.4	5.2Mhz	45Mhz
Excelcom	GSM 900	907.5 - 915	952.5 - 960	7.5Mhz	45Mhz
Excelcom	GSM 1800	1710 - 1717.5	1805 - 1812.5	7.5Mhz	95Mhz
INDOSAT - SAT	GSM 1800	1717.5 - 1722.5	1812.5 - 1817.5	5Mhz	95Mhz
Telkomsel	GSM 1800	1722.5 - 1730	1817.5 - 1825	7.5Mhz	95Mhz
Natrindo / Axis	GSM 1800	1730-1745	1825-1840	15Mhz	95Mhz
Telkomsel	GSM 1800	1745 - 1750	1840 - 1845	5Mhz	95Mhz
INDOSAT - IM3	GSM 1800	1750 - 1765	1845 - 1860	15Mhz	95Mhz
Telkomsel	GSM 1800	1765 - 1775	1860 - 1870	10Mhz	95Mhz
Three/HCPT	GSM 1800	1775 - 1785	1870 - 1880	10Mhz	95Mhz
Wireless Indonesia/SMART	CDMA 1900	1900 - 1910	1980 - 1990	5Mhz	80Mhz
Three/HCPT	3G-UMTS	1920 - 1925	2110 - 2115	5Mhz	90Mhz
empty-Not In used					
Natrindo / Axis	3G-UMTS	1930 - 1935	2120 - 2125	5Mhz	90Mhz
Telkomsel	3G-UMTS	1935 - 1940	2125 - 2130	10Mhz	90Mhz
		1940 - 1945	2130 - 2135		
empty-Not In used					
INDOSAT	3G-UMTS	1950 - 1955	2140 - 2145	10Mhz	90Mhz
		1955 - 1960	2145 - 2150		
Excelcom	3G-UMTS	1960 - 1965	2150 - 2155	10Mhz	90Mhz
		1965 - 1970	2155 - 2160		

JABOTABEK Area = Jakarta-Bogor-Tangerang-Bekasi Area

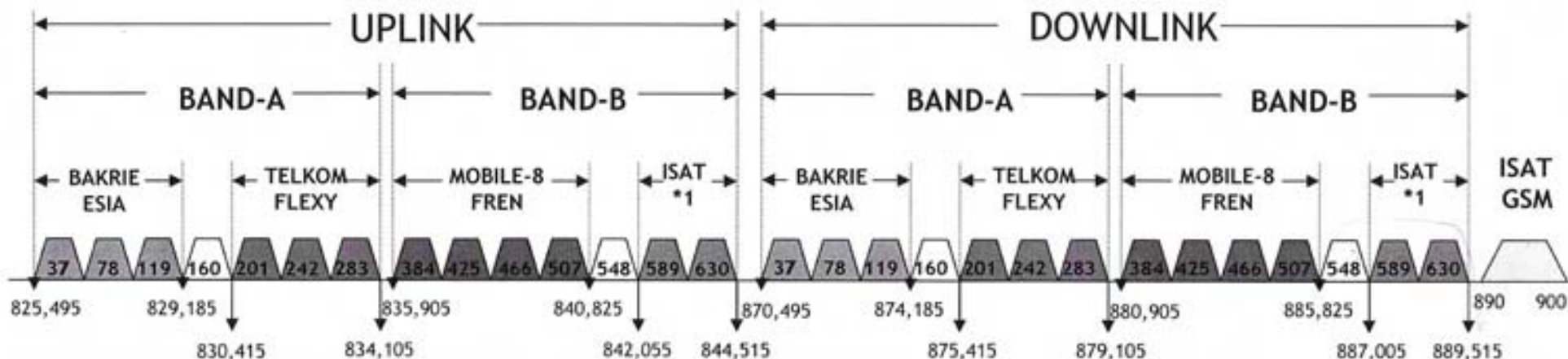
800 MHz Frequency Allocation in Indonesia

Previous Allocation



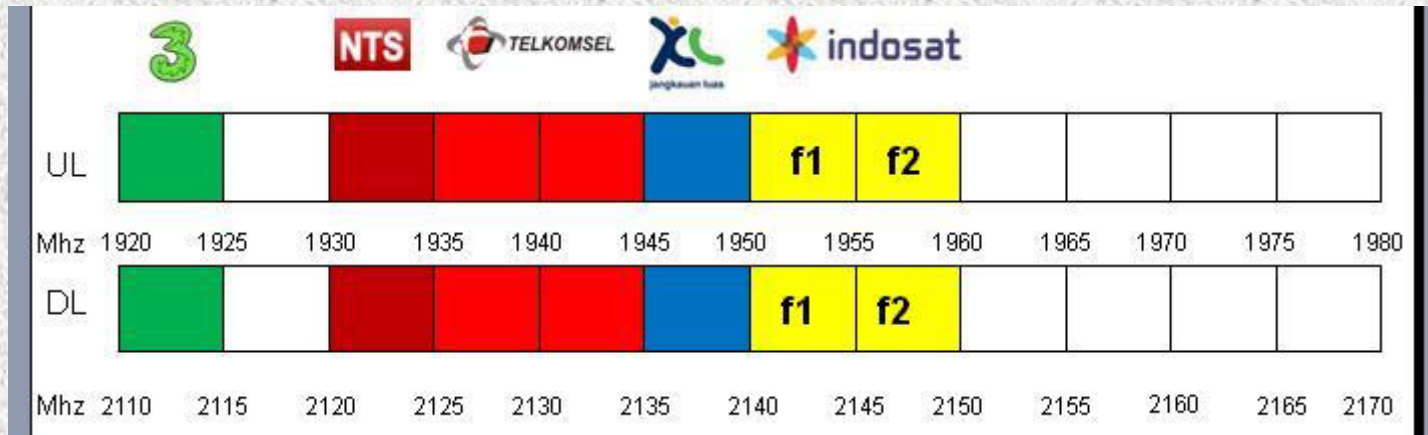
Need to manage interference

New Allocation Scheme

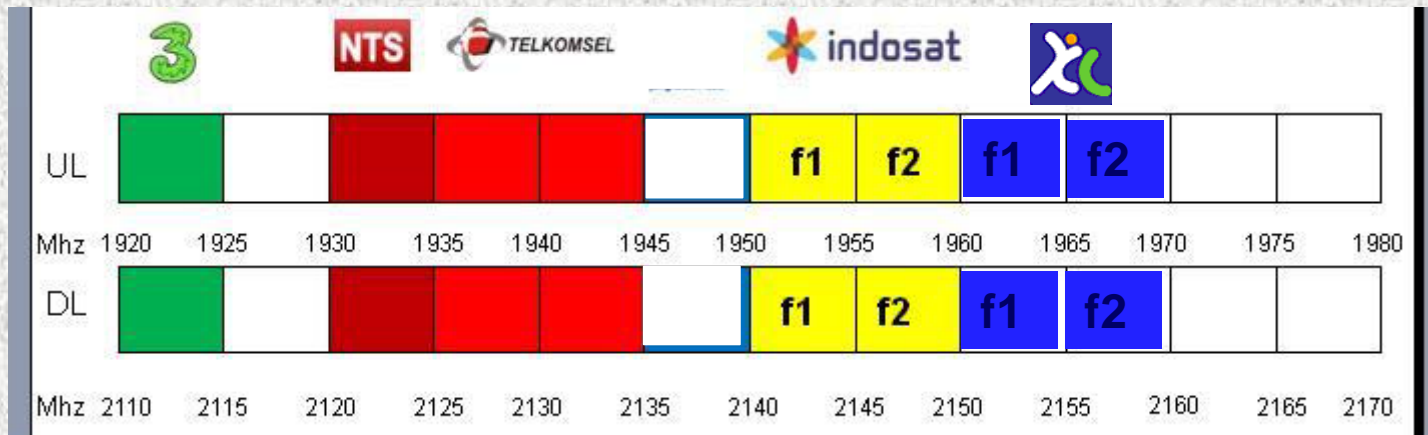


New UMTS Frequency Allocation

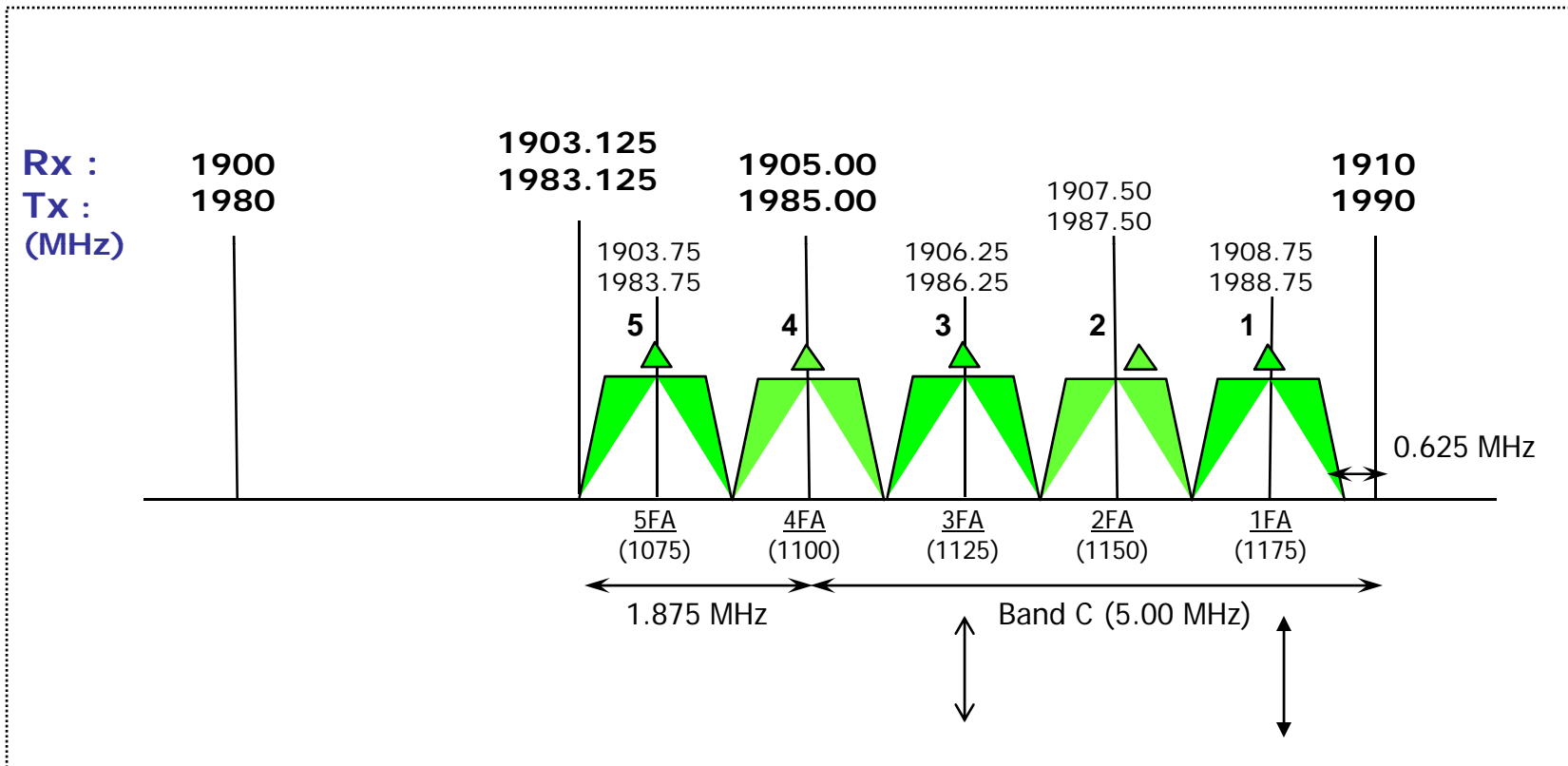
2010



2011



Frequency Allocation for SMART-CDMA 1900mhz



EV DO

Cdma
2000 1x