Concentration Ratio for International Telephone

Circuit	Busy Hour Dec 16 Wed	Observed Concentration Ratio (%)				Ratio(%) to be applied
		Dec 15 Tue	Dec 16 Wed	Dec 17 Thu	average	
Singapore	14 － 15	10. 1	10. 7	9. 9	10. 23	10
Malaysia	9 － 10	11. 3	8. 6	10. 0	9. 46	10
Hong. kong	10 － 11	9. 2	9. 7	9. 5	9. 46	10
Japan	9 － 10	9. 9	11. 0	10. 4	10. 43	10
Taiwan	10 － 11	8. 7	9. 2	11. 5	9. 8	10
Netherlands	14 － 15	14. 2	11. 5	15. 2	13. 6	14
Australia	10 － 11	10. 6	10. 2	10. 5	10. 4	10
U. S. A.	8 － 9	8. 8	9. 6	9. 6	9. 3	10
United Kingdom	15 － 16	11. 1	12. 5	13. 7	12. 4	13
Germany	17 － 18	9. 3	12. 1	12. 4	11. 3	12
Philippines	14 － 15	11. 1	11. 3	11. 2	11. 2	11
France	18 － 19	15. 4	13. 2	20. 0	16. 2	15
Italy	14 － 15	16 2	14. 6	13. 0	14. 6	15
Thailand	12 － 13	13. 8	10. 4	14. 0	12. 7	13
Korea Rep.	20 － 21	9. 6	11. 3	9. 5	10. 1	10
Spain	1 － 2	15. 8	25. 9	23. 8	21. 8	15
Saudi Arabia	14 － 15	12. 1	11. 1	12. 8	12	12
Switzerland	15 － 16	16. 6	14. 1	12. 5	14. 4	15
Norway	15 － 16	17. 8	14. 6	21. 1	17. 8	15
Hawaii	12 － 13	25. 8	19. 8	18. 7	21. 4	15
Canada	8 － 9	10. 4	15. 9	14. 7	13. 7	15

Assumed Concentration Ratio for International Telephone

Circuit	time difference with Jakarta	Concentration Ratio (%)
Egypt	－5 H	13
New Zealand	5 H	13
Pakistan	－2 H	10
Papua New Guinea	3 H	13
Sri Lanka	－1.5 H	10
Kuwait	－4 H	13
U. A. E	－3 H	13
Greece	－6 H	15
Austria	－6 H	15
Sweden	－6 H	15
Belgium	－6 H	15
Denmark	－6 H	15
India	－1.5 H	10

Telephone International Circuits

Appendix 4 • 4 • 2 — 2(1)

		83	84	85	86	87	88	89	90	94	99	2000
Spain	JKT	7	8	10	11	12	13	14	16	22	31	32
	MDN	—	—	—	—	—	5	5	6	8	11	12
United Kingdon	JKT	36	43	47	55	65	76	88	102	178	272	291
	MDN	—	—	11	12	14	17	22	25	39	64	70
Italy	JKT	17	20	21	24	28	32	37	43	61	88	93
	MDN	—	—	6	7	8	9	10	12	18	27	30
Australia	JKT	32	38	44	53	56	66	77	88	151	230	246
	MDN	—	—	—	—	13	15	19	22	34	56	60
West Germany	JKK	30	36	39	46	54	63	74	85	145	221	237
	MDN	—	—	9	10	12	15	19	21	33	54	58
Swiss	JKT	8	10	11	13	13	15	17	19	27	37	39
	MDN	—	—	—	—	5	5	6	7	9	13	14
Canada	JKT	12	14	17	19	22	26	30	34	51	74	79
	MDN	—	—	—	—	—	—	—	—	—	—	—
Malaysia	JKT	18	19	23	26	31	35	41	47	68	99	105
	NDN	—	5	6	7	8	10	11	13	20	50	33
Philippines	JKT	16	17	20	23	27	31	35	40	59	88	89
	MDN	—	5	5	6	7	9	10	12	17	28	29
Saudi Arabia	JKT	12	14	25	17	19	22	25	29	41	59	62
	MDN	—	—	5	5	6	7	8	9	13	19	21
Singapore	JKT	200	230	283	345	419	505	604	707	1, 114	1697	1814
	MDN	—	28	36	46	58	74	93	113	232	418	461
Thailand	JKT	11	12	14	16	19	21	24	27	39	56	59
	MDN	—	4	4	5	6	7	8	9	12	19	20
Taiwan	JKT	29	32	38	44	52	61	71	81	139	212	227
	MDN	—	7	9	10	12	15	17	20	32	52	56
Belgium	JKT	8	9	10	11	13	14	15	17	24	33	34
	MDN	—	—	—	—	—	5	5	6	8	12	13
France	JKT	26	32	34	40	47	55	64	74	110	188	202
	MDN	—	—	8	9	11	14	16	19	29	47	51
U. S. A	JKT	61	75	91	109	151	184	222	262	423	663	714
	MDN	—	—	—	—	—	—	—	—	—	—	—

Telephone International Circuits

		83	84	85	86	87	88	89	90	94	99	2000
Japan	JKT	83	94	113	156	190	229	274	321	505	769	822
	JKT	–	16	20	25	31	38	47	56	95	189	209
Hong Kong	JKT	46	50	57	67	79	94	109	145	228	348	372
	MDN	–	10	11	14	17	21	25	30	48	79	86
Netherlands	JKT	33	40	48	56	66	78	90	104	184	279	298
	MDN	–	–	10	12	15	18	21	25	40	66	71
Norway	JKT	9	8	6	7	8	9	9	10	13	17	17
	MDN	–	–	–	–	–	–	–	–	5	7	7
Hawaii	JKT	7	8	9	10	11	13	15	17	23	33	35
	MDN	–	–	–	–	–	–	–	–	–	–	–
Korea R	JKT	13	15	17	20	23	27	32	36	54	79	84
	MDN	–	–	–	–	–	–	–	–	–	–	–
Egypt	JKT			3	4	4	4	5	5	6	8	8
	MDN			–	–	–	–	–	–	–	–	–
India	JKT			9	11	12	14	15	17	24	33	35
	MDN			3	4	4	5	6	6	8	12	13
New Zealand	JKT			7	8	9	11	12	13	19	26	28
	MDN			–	–	4	4	4	5	6	9	9
Pakistan	JKT			3	4	4	4	5	5	6	7	7
	MDN			–	–	–	–	–	–	–	4	4
Papua New Guinea	JKT			4	4	5	5	6	6	8	10	11
	MDN			–	–	–	–	–	–	–	–	–
Sri Lanka	JKT			3	3	4	4	4	5	6	7	8
	MDN			–	–	–	–	–	–	–	–	–
U. A. E	JKT			5	5	6	6	7	8	9	12	13
	MDN			–	–	–	–	3	3	4	5	6
Austria	JKT			6	7	7	8	9	10	12	16	17
	MDN			–	–	–	–	–	–	5	7	7
Denmark	JKT			7	7	8	9	10	12	14	19	20
	MDN			–	–	–	–	–	–	6	8	8
Greece	JKT			6	7	8	9	10	11	13	17	18
	MDN			–	–	–	–	–	–	5	7	8

Telephone international Circuits

Appendix 4 • 4 • 2 – 2(3)

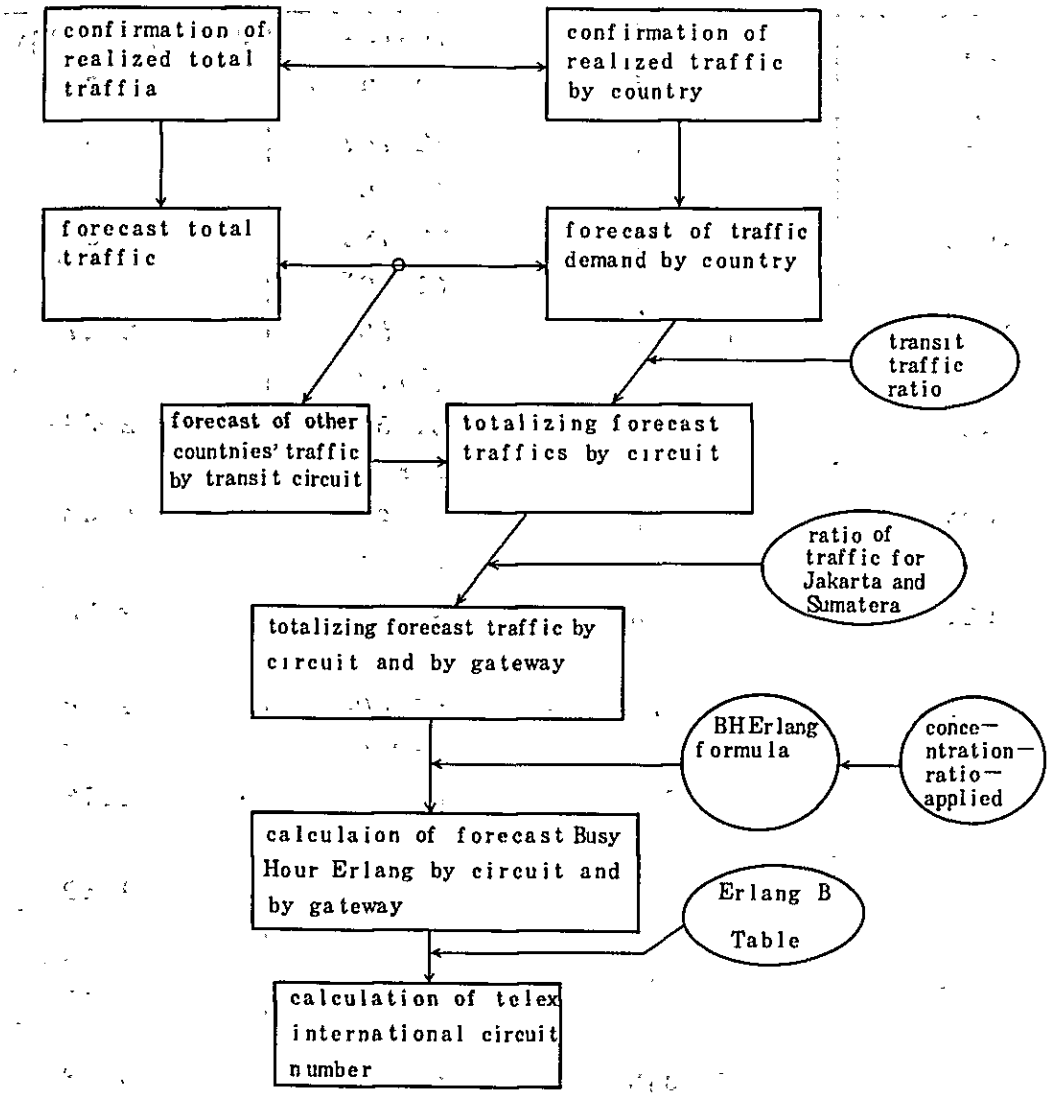
		83	84	85	86	87	88	89	90	94	99	2000
Sweden	JKT			7	8	9	10	11	12	14	19	20
	MDN			–	–	–	–	–	–	6	8	8
Nigeria	JKT					3	4	4	4	5	6	7
	MDN					–	–	–	–	–	–	–
Brunei	JKT					3	3	3	3	4	5	5
	MDN					2	2	2	2	2	3	3
Yugoslavia	JKT					4	4	4	4	5	7	7
	MDN					–	–	–	–	–	–	–
Brazil	JKT						5	5	5	7	9	9
	MDN						–	–	–	–	–	–
Kenya	JKT						3	3	4	4	5	5
	MDN						–	–	–	–	–	–
Bahrain	JKT						3	4	4	5	6	6
	MDN						–	–	–	–	–	–
Mexico	JKT							5	5	6	8	9
	MDN							–	–	–	–	–
Finland	JKT							5	5	6	8	8
	MDN							–	–	–	–	–
Iran	JKT								3	4	5	5
	MDN								–	–	–	–
Burma	JKT									3	4	4
	MDN									–	–	–
Fiji	JKT									3	4	4
	MDN									–	–	–
Iraq	JKT									3	4	4
	MDN									–	–	–
New Caledonia	JKT									3	4	4
	MDN									–	–	–
Tanzania	JKT										3	4
	MDN										–	–
Argentina	JKT										5	5
	MDN										–	–

Telephone international Circuits

		83	84	85	86	87	88	89	90	94	95	2000
Bangladesh	JKT										3	3
	MDN										—	—
Turkey	JKT										4	5
	MDN										—	—
USSR	JKT										4	4
	MDN										—	—
Hungary	JKT										3	5
	MDN										—	—
Grand Total	JKT	714	824	1, 027	1, 236	1, 491	1, 775	2, 094	2, 445	3, 848	5, 844	6, 239
	MDN	0	75	143	172	233	295	357	421	734	1, 254	1, 367

Flowchart of Demand Forecast and International Circuit Arrangement

(International Telex)



Appendix 4.5.1-2

International Telex Traffic Forecast
Indonesia - World
(Outgoing + Incoming)

Year	Calls (thousands)	Minutes (thousands)	Average Minutes per call
1983	8,105	23,747	2.93
		(16.5)	
1984	9,923	27,784	2.80
		(17.0)	
1985	12,175	32,507	2.67
		(17.0)	
1986	14,666	37,546	2.56
		(15.5)	
1987	17,547	42,990	2.45
		(14.5)	
1988	20,672	48,579	2.35
		(13.0)	
1989	24,074	54,408	2.26
		(12.0)	
1990	27,703	60,393	2.18
		(11.0)	
1994	40,811	77,133	1.89
		(4.6)	
1999	56,601	91,694	1.62
		(2.3)	
2000	59,343	93,762	1.58
		(2.0)	

(Note) This table is the same as Table 3-5 in the text; page .

Country	83	84	85	86	87	88	89	90	94	99	2000
Algeria	2.6	3.0	3 5	4.1	4.6	5.2	5.9	6.5	8.3	9.9	10 1
Egypt	17.3	20.2	23.6	27.3	31.3	35.3	39.6	43.9	56.1	66 7	68.2
Ethiopia	16.2	19.0	22.2	25.7	29.4	33.2	37.2	41.3	52.8	62.7	64.1
Kenya	5.8	6 8	8.0	9.2	10.5	11.9	13.3	14 8	18.9	22.5	23.0
Nigeria	2.1	2.4	2.8	3.2	3.7	4.2	4.7	5.2	6.7	7.9	8.1
Tunisia	4.4	5.2	6.1	7.0	8.0	9.1	10 2	11.3	14.4	17.2	17.6
South Africa	4.4	5.2	6.1	7.0	8.0	9.1	10.2	11.3	14.4	17.2	17.6
Argentine	4.4	5.2	6.1	7.0	8.0	9.1	10.2	11.3	14.4	17.2	17.6
Brazil	18.3	21.4	25.1	28.9	33.1	37.4	41.9	46.5	59.4	70.7	72.2
Chile	1.0	1.2	1.4	1.6	1.9	2.1	2 4	2.6	3.3	4.0	4.1
Colombia	0.7	0.8	0.9	1.1	1.2	1.4	1.6	1.7	2 2	2.6	2.7
Cuba	1.5	1.8	2.1	2.4	2.8	3.1	3.5	3.9	5.0	5.9	6.1
Mexico	18.3	21.4	25.1	28.9	33.1	37.4	41.9	46.5	59.4	70.7	72.2
Panama	1.9	2.2	2.6	3.0	3.4	3.8	4.3	4.8	6.1	7.3	7.4
Peru	1.5	1.8	2.1	2.4	2.8	3.1	3.5	3.9	5.0	5.9	6.1
Puerto Rico	4.6	5.4	6.3	7.3	8.4	9.4	10 6	11.7	15.0	17.8	18.2

Country	83	84	85	86	87	88	89	90	94	99	2000
Venezuela	2.1	2.4	2.8	3 2	3.7	4.2	4 7	5.2	6.7	7.9	8.1
Afganistan	1.9	2.2	2.6	3.0	3.4	3.8	4 3	4.8	6.1	7.3	7.4
Australia	824.5	964.7	1128 8	1303.6	1492 4	1687	1889	2096.8	2678	3183.5	3255.2
Bahrain	4 6	5.4	6.3	7.3	8.4	9.4	10.6	11.7	15.0	17.8	18.2
Brunei	2.7	3.2	3.7	4.3	5.0	5.6	6 3	7.0	8.9	10.6	10.8
Burma	2.9	3.4	4.0	4.6	5.3	5.9	6.7	7.4	9.4	11.2	11.5
China	1 4	1.6	1.9	2 2	2.5	2 8	3.1	3.5	4.4	5.3	5.4
Korea D . P . R	5.3	6.2	7.3	8.4	9.6	10.8	12 1	13 5	17.2	20.5	20.9
Fiji	1.5	1.8	2 1	2 4	2 8	3.1	3.5	3.9	5.0	5.9	6.1
Hong Kong	1710.4	2001.2	2341.6	2704 2	3095.9	3499.6	3918.6	4349.6	5555.5	6604	6752.8
India	188.8	220 9	258.5	298.5	341.8	386.3	432.6	480.2	613.3	729.0	745.4
Iran	14.5	17.0	19.9	23.0	26.3	29.7	33.3	37.0	47.2	56.1	57.4
Japan	3243.2	3794.5	4439.9	5127.5	5870.1	6635.5	7430.1	8247.4	10533.8	12521.9	12804
Jordan	6.0	7.0	8.2	9.5	10.8	12.2	13.7	15.2	19.4	23.1	23.6
Korea R.	352.3	412.2	482.3	557.0	637.7	720.8	807.2	895.9	1144.3	1360.3	1390.9
Kuwait	26.7	31.2	36.5	42.2	48.3	54.6	61.1	67.8	86.7	103.0	105.3

Country	83	84	85	86	87	88	89	90	94	99	2000
Macao	0.9	1.0	1.2	1.4	1.5	1.7	2.0	2.2	2.8	3.3	3.4
Malaysia	373.5	437.0	511.4	590.5	676.1	764.2	855.7	949.9	1213.2	1442.2	1474.7
Nepal	2.6	3.0	3.5	4.1	4.6	5.2	5.9	6.5	8.3	9.9	10.1
New Caledonia	2.4	2.8	3.3	3.8	4.3	4.9	5.5	6.1	7.8	9.2	9.5
New Zealand	87.9	102.9	120.3	139	159.1	179.9	201.4	223.5	285.5	339.4	347.1
Oman	1.4	1.6	1.9	2.2	2.5	2.8	3.1	3.5	4.4	5.3	5.4
Pakistan	25.5	29.8	34.9	40.3	46.1	52.1	58.4	64.8	82.8	98.4	100.6
Papua New Guinea	31.1	36.4	42.6	49.2	56.3	63.7	71.3	79.2	101.1	120.2	122.9
Philippines	304.1	355.8	416.3	480.8	550.4	622.2	696.7	773.3	987.7	1174.1	1200.5
Quatar	1.5	1.8	2.1	2.4	2.8	3.1	3.5	3.9	5.0	5.9	6.1
Saudi Arabia	134.4	157.3	184.0	212.5	243.3	275.0	308.0	341.8	436.6	519.0	530.7
Singapore	5731.1	6705.4	7845.9	9060.9	10373.3	11725.8	13129.9	14574.2	18614.6	22127.7	22626.3
Sri Lanka	43.3	50.6	59.2	68.4	78.3	88.5	99.1	110.0	140.5	167.1	170.8
Syrian Arab	2.7	3.2	3.7	4.3	5.0	5.6	6.3	7.0	8.9	10.6	10.8
Thailand	201.8	236.1	276.3	319.1	365.3	412.9	462.3	513.2	655.5	779.2	796.8
U.A.E.	38.3	44.8	52.4	60.6	69.3	78.4	87.8	97.4	124.4	147.9	151.2

International Telex by Country

Country	83	84	85	86	87	88	89	90	94	99	2000
Yemen	0.5	0.6	0.7	0 8	0 9	1.0	1.2	1.3	1.7	2.0	2.0
Yemen Arab	2 1	2.4	2.8	3.2	3.7	4 2	4.7	5.2	6.7	7.9	8.1
Taiwan	466 7	546.1	639.0	737 9	844 8	954.9	1069.3	1186 9	1515.9	1802.1	1842.7
Austria	55.9	65.4	76 6	88.4	101 2	114.4	128.1	142 2	181.6	215.9	220.8
Belgium	169.7	198.5	232.3	268.2	307.1	347.1	388.7	431.4	551.0	655.1	669.8
Bulgaria	1.9	2 2	2 6	3.0	3.4	3.8	4.3	4 8	6.1	7.3	7.4
Czechoslovak	7.2	8.4	9.8	11.4	13.0	14.7	16 5	18.3	23.3	27 7	28.4
Denmark	77 3	90.4	105.8	122.2	139.9	158.2	177.1	196.6	251.1	298.5	305.2
Finland	20.2	23.6	27.6	31 9	36.5	41.3	46 2	51.3	65.5	77.9	79.7
France	749.8	877.2	1026.5	1185.4	1357.1	1534.1	1717.7	1906.7	2435.3	2894.9	2960 1
F R D	1344 6	1573.2	1840.8	2125.8	2433 7	2751.1	3080.5	3419.3	4367.3	5191.5	5308.5
Greece	29 6	34.6	40.5	46 8	53.6	60.5	67.8	75.2	96.1	114.2	116.8
Hungary	17.3	20.2	23.6	27.3	31.3	35.3	39.6	43.9	56.1	66.7	68.2
Iceland	0.5	0.6	0.7	0.8	0.9	1.0	1.2	1.3	1.7	2 0	2.0
Ireland	6.0	7.0	8.2	9.5	10.8	12.2	13.7	15.2	19.4	23.1	23.6
Italy	316.9	370.8	433 9	501.0	573.6	648.4	726.0	805.9	1029.3	1223.6	1251.2

Country	83	84	85	86	87	88	89	90	94	99	2000
Luxembourg	7.4	8.6	10.1	11.6	13.3	15.0	16.8	18.7	23.9	28.4	29.0
Netherlands	912.4	1067.5	1249.1	1442.5	1651.5	1866.8	2090.4	2320.3	2963.6	3522.9	3602.3
Norway	51.0	59.6	69.8	80.6	92.2	104.3	116.8	129.6	165.5	196.8	201.2
Portugal	3.2	3.8	4.4	5.1	5.9	6.6	7.4	8.3	10.6	12.5	12 8
Roumania	18.3	21.4	25.1	28.9	33.1	37.4	41 9	46.5	59.4	70 7	72 2
Spain	64.5	75.4	88.3	101.9	116.7	131.9	147.7	164 0	209.4	248.9	254.6
Sweden	91.2	106.7	124.8	144.1	165.0	186.5	208.8	231.8	296.1	352.0	359.9
Switzerland	218.7	255.9	299.5	345.8	395.9	447.5	501.1	556.3	710.5	844.6	863 6
Turkey	33.2	38 8	45.4	52.5	60.1	67.9	76.0	84 4	107.8	128.1	131.0
U.S.S.R	8.2	9.6	11.2	13.0	14.9	16.8	18.8	20 9	26.7	31.7	32 4
United Kingdom	1831.0	2142 3	2506.7	2894.8	3314.1	3746.2	4194.8	4656.3	5947.1	7069.5	7228.8
Yugoslavia	25.3	29.6	34.7	40.0	45.8	51.8	58.0	64.4	82.2	97.7	99.9
Canada	148.6	173.9	203.5	235.0	269.0	304.1	340.5	377.9	482.7	573.8	586.8
U.S.A.	2602.9	3045.3	3563.3	4115.1	4711.2	5325.4	5963.1	6619.1	8454.1	10049.6	10276
Hawaii	18.8	22.0	25.8	29.7	34.1	38.5	43.1	47.8	61.1	72.6	74 3
Guam	1.4	1.6	1.9	2.2	2.5	2.8	3.1	3.5	4.4	5.3	5.4

International Telex by Country

Appendix 4・5・1－3(6)

Country	83	84	85	86	87	88	89	90	94	99	2000
Bahamas	1.0	1.2	1.4	1.6	1.9	2.1	2.4	2.6	3.3	4.0	4.1
Bermuda	5.0	5.8	6.8	7.8	9.0	10.1	11.4	12.6	16.1	19.1	19.6
Total	22,784	26,657	31,191	36,022	41,239	46,616	52,198	57,940	74,002	87,969	89,951
Other Countries	963	1,127	1,316	1,524	1,751	1,963	2,210	2,453	3,131	3,725	3,811
Grand Total	23,747	27,784	32,507	37,546	42,990	48,579	54,408	60,393	77,133	91,694	93,762

Appendix 4.5.1-4

Other Countries' Telex Traffic by Transit Circuit

1000 minutes/year

Circuit	83	84	85	86	87	88	89	90	94	99	2000
Other Countries' Total Traffic	963	1127	1316	1524	1751	1963	2210	2453	3131	3725	3811
Via Italy	165.6	193.8	226.4	262.1	301.2	337.6	380.1	421.9	538.5	640.7	655.5
Via Hong Kong	25.0	29.3	34.2	39.6	45.5	51.0	57.5	63.8	81.4	96.9	99.1
Via France	61.6	72.1	84.2	97.5	112.1	125.6	141.4	157.0	200.4	238.4	243.9
Via Switzer-land	578.8	677.3	790.9	915.9	10524	11798	13282	14743	18817	22387	22904
Via Australia	14.4	16.9	19.7	22.9	26.3	29.4	33.2	36.8	47.0	55.9	57.2
Via U.S.A.	117.5	137.5	160.6	185.9	213.6	239.5	269.6	299.3	382.0	454.5	464.9

Telex Traffic Distribution Ratio

(D) : Direct Route

Country	Actural Ratio		Planned Ratio		Remarks
	1st Route	2nd Route	1st Route	2nd Route	
Algeria	Italy	France	Italy	France	
	99	1	99	1	
Egypt	Italy	USA	Italy	USA	＊'85～ Egypt (D) 100
	51	49	95	5	
Ethiopia	Italy	USA	Italy	USA	＊'89～ Ethiopia (D) 100
	99	1	99	1	
Kenya	USA		USA		＊'94～ Kenya (D) 100
	100		100		
Nigeria	Italy	USA	Italy	USA	
	98	2	98	2	
Tunisia	Italy	USA	Italy	USA	
	99	1	99	1	
South Africa	Italy	USA	Italy	USA	＊'99～ South Africa 100 (D)
	99	1	99	1	
Argentine	USA		USA		
	100		100		
Brazil	Italy	USA	Italy	USA	＊'88～ Brazil (D) 100
	98	2	98	2	
Chile	USA		USA		
	100		100		
Columbia	USA		USA		
	100		100		
Cuba	Italy		Italy		
	100		100		
Mexico	Italy	USA	Italy	USA	＊'88～ Mexico (D) 100
	56	44	95	5	
Panama	USA		USA		
	100		100		
Peru	Italy	USA	Italy	USA	
	45	55	45	55	

(Note) Actural Ratio is adopted from ITU data(Appendix3.2.2－3)

Telex Traffic Distribution Ratio

(D) : Direct Route

Country	Actural Ratio		Planned Ratio		Remarks
	1st Route	2nd Route	1st Route	2nd Route	
Puerto Rico	USA		USA	Italy	
	100		55	45	
Venezuela	Italy	USA	Italy	USA	
	55	45	55	45	
Afganistan	Italy		Italy		
	100		100		
Australia	Australia(D)	USA	Australia(D)		
	98	2	100		
Bahrain	Italy	Swiss	Italy	Swiss	＊'99～ Bahrain(D) 100
	98	2	98	2	
Brunei	Hong Kong	Singapore	Hong Kong	Singapore	
	91	9	91	9	
Burma	Hong Kong	USA	Hong Kong	USA	
	91	9	91	9	
China	Itary	Singapore	Italy		
	99	1	100		
Korea D.P.R. (North)			Japan		＊'94～ K DPR(D) 100
			100		
Fiji	USA		USA		
	100		100		
Hong Kong	Hong Kong(D)	Singapore USA	Hong Kong(D)	Singapore	
	94	6	95	5	
India	Italy	Singapore	India(D)		
	89	11	100		
Iran	Italy	Swiss	Italy	Swiss	＊'85～ Iran(D) 100
	65	35	65	35	
Japan	Japan	Singapore	Japan(D)	Singapore	
	78	22	95	5	
Jordan	Italy	USA	Italy	USA	＊'94～ Jordan(D) 100
	99	1	99	1	

Telex Traffic Distribution Ratio

(D) : Direct Route

Country	Actural Ratio			Planned Ratio		Remarks
	1st Route	2nd Route		1st Route	2nd Route	
Korea Rep (South)	Italy	Swiss		Italy	Swiss	* '85～ Korea (D) 100
	98	2		98	2	
Kuwait	Italy	France		Italy	France	* '85～ Kuwait (D) 100
	99	1		99	1	
Macao	Hong Kong			Hong Kong		
	100			100		
Malaysia	Malaysia (D)	Hong Kong		Malaysia (D)	Hong Kong	
	98	2		98	2	
Nepal	USA			USA		
	100			100		
New Caledonia	France	Sydney		France		
	99	1		100		
New Zealand	Sydney	Italy		Sydney	Italy	* '85～ N Z (D) 100
	97	3		97	3	
Omam	USA			USA		
	100			100		
Pakistan	Italy	USA		Italy	USA	* '85～ Pakistan (D) 100
	58	42		95	5	
Papua New Guinea	Sydney			Sydney		* '85～ P N G (D) 100
	100			100		
Philippines	Philippines	Hong Kong	Italy Swiss	Philippines (D) **	Hong Kong	** RCA 48.45 ITT 22.80 ETPI 23.75
	72	23	5	95	5	
Quatar	Swiss			Swiss		
	100			100		
Sandi Arabia	Italy	France		Italy	France	* '85～ S A (D) 100
	98	2		98	2	
Singapore	Singapore (D)	Hong Kong		Singapore (D)	Hong Kong	
	87	13		95	5	
Sri Lanka	Italy	Singapore		Italy	Singapore	* '85～ Sri Lanka (D) 100
	90	10		95	5	

Telex Traffic Distribution Ratio

(D) : Direct Route

Country	Actural Ratio			Planned Ratio		Remarks
	1st Route	2nd Route		1st Route	2nd Route	
Syrian Arab	Italy	France		Italy		
	99	1		100		
Thailand	Singapore	Thailand (D)	USA	Thailand (D)	Singapore	
	47	28	25	95	5	
U.A.E.	Italy	Swiss		Italy	Swiss	* '85 ~ U A E (D) 100
	84	16		95	5	
Yemen	Hong Kong			Hong Kong		
	100			100		
Yemen Arab	Italy			Italy		
	100			100		
Taiwan	Taiwan (D)	Singapore		Taiwan (D)	Singpore	
	99	1		99	1	
Austria	Austria (D)	Singapore		Austria (D)		
	98	2		100		
Belgium	USA	France	Swiss	USA	France	* '85 ~ Belgiun (D) 100
	44	35	21	95	5	
Bulgaria	France	USA	Swiss	France	USA	
	54	31	5	60	40	
Czechoslovak	USA	Swiss		USA	Swiss	
	79	21		80	20	
Denmark	Italy	France USA		Italy	France	* '85 ~ Denmark (D) 100
	98	2		98	2	
Finland	USA	Swiss	France	USA	Swiss	* '87 ~ Finland (D) 100
	43	30	27	95	5	
France	France (D)	Italy		France (D)		
	99	1		100		
Germany (West)	Germany (D)	Italy		Germany (D)	Italy	
	99	1		99	1	
Greece	France	Italy		France	Italy	* '85 ~ Grecce (D) 100
	55	45		95	5	

Appendix 4.5.1-5(5)

Telex Traffic Distribution Ratio

(D): Direct Route

Country	Actural Ratio			Planned Ratio		Remarks
	1st Route	2nd Route		1st Route	2nd Route	
Hungary	France	Swiss		France	Swiss	*'88-Hungary(D) 100
	51	49		95	5	
Iceland	Italy			Italy		
	100			100		
Ireland	USA	Swiss	France	USA	Swiss	
	37	35	28	95	5	
Italy	Italy(D)	France	USA	Italy(D)	France	
	98	2		98	2	
Luxembourg	USA	Swiss		USA	Swiss	
	57	43		60	20	
Netherlands	Nether-lands(D)	Italy		Nether-lands	Italy	
	99	1		99	1	
Norway	USA	Swiss	France	USA	SWISS	*'85-Norway(D) 100
	42	31	27	95	5	
Portugal	Italy	France		Italy		
	99	1		100		
Roumania	Italy	France		Italy	France	*'85-Roumania(D) 100
	98	2		98	2	
Spain	Swiss	France	USA	Spain(D)		
	71	29		100		
Sweden	France	Swiss		France	Swiss	*'85-Sweden(D) 100
	79	21		95	5	
Switzerland	Italy	USA		Switzerland (D)		
	67	2		100		
Turkey	Italy	France/USA		Italy	France	*'85-Turkey(D) 100
	99	1		98	2	
U.S.S.R.	USA			USA		*'88-USSR(D) 100
	100			100		
United Kingdom	UK(D)	Italy	France	UK(D)	Italy	
	72	28		95	5	

Telex Traffic Distribution Ratio
(based on ITU " TELEX 1980 ")

(D) : Direct Route

Country	Actural Ratio		Planned Ratio		Remarks
	1st Route	2nd Route	1st Route	2nd Route	
Yugoslavia	Italy	France/USA	Italy	France	* '85～ Yugoslavia(D) 100
	98	2	98	2	
Canada	USA		Canada (D)		
	100		100		
U.S.A.	USA	Italy Sydney Singapore	USA (D) **	Australia	** RCA 1995 ITT 4940 WUI 2565
	95	5	95	5	
Hawaii	USA		USA		* '85～ Hawaii (D) 100
	100		100		
Guam	USA		USA		
	100		100		
Bahamas	USA		USA		
	100		100		
Bermuda	USA		USA		
	100		100		

Telex by Country

	1983	1984	1985	1986	1987	1988	1989	1990	1994	1999	2000	NOTE
Egypt			23 6	27.3	31.3	35.3	39.6	43.9	56.1	66.7	68 2	
Ethiopia							37 2	41.3	52.8	62 7	64 1	
Kenya									18.9	22.5	23 0	
South Africa										17.2	17 6	
Brazil						37 4	41.9	46.5	59.4	70.7	72 2	
Mexico						37 4	41.9	46.5	59.4	70 7	72.2	
Bahrain										17.8	18.2	
Korea D P R									17.2	20 5	20.9	
India	188.8	220.9	258.5	298 5	341 8	386.3	432.6	480.2	613.3	729.0	745.4	
Iran			19.9	23 0	26 3	29 7	33.3	37 0	47.2	56 1	57.4	
Japan	3086.3	3611.0	4225.2	4879.5	5586.2	6314.5	7070.7	7848 5	10007.1	11895.8	12163 8	
Jordan									19.4	23.1	23 6	
Korea R			482.3	557.0	637.7	720.8	807.2	895.9	1144.3	1360.3	1390 9	
Kuwait			36.5	42.2	48.3	54.6	61.1	67.8	86.7	103.0	105.3	
Malaysia	366.0	428 3	501.2	578.7	662.6	748.9	838.6	930.9	1188 9	1413.4	1445.2	
New Zealand			120.3	139.0	159.1	179.9	201.4	223.5	285.5	339.4	347.1	

Telex by Country

	1983	1984	1985	1986	1987	1988	1989	1990	1994	1999	2000	NOTE
Pakistan			34.9	40.3	46.1	52.1	58.4	64.8	82.8	98.4	100 6	
Papua New Guinea			42 6	49.2	56.3	63 7	71.3	79.2	101.1	120.2	122.9	
Philippines RCA	146	170 8	199.8	230.8	264.2	298.7	334.4	371.2	474 1	563 6	576.2	
Philippines ITT	69.9	81.8	95.7	110.6	126.6	143.1	160.2	177.9	227.2	270.0	276.1	
Philippines ETPI	73 0	85.4	99.9	115.4	132.1	149.3	167.2	185.6	237.0	281 8	288.1	
Saudi Arabia			184.0	212.5	243 3	275.0	308.0	341.8	436.6	519.0	530.7	
Singapore	5709.3	6679.9	7813 1	9023.1	10329.8	11676 7	13074.9	14513.3	18536.8	22035.2	22531.6	
Sri Lanka			59.2	68.4	78.3	88.5	99.1	110.0	140.5	167.1	170.8	
Thailand	191.7	224.3	262.5	303.1	347.0	392.3	439.2	487.5	622 7	740.2	757.0	
U.A.E			52.4	60.6	69.3	78.4	87.8	97.4	124 4	147.9	151.2	
Taiwan	462	540.6	632.6	730.5	836.4	945.4	1058.6	1175.0	1500 7	1784 1	1824.3	
Austria	55.9	65.4	76.6	88 4	101.2	114.4	128 1	142.2	181.6	215.9	220.8	
Belgium			232.3	268 2	307.1	347.1	388 7	431 4	551 0	655.1	669.8	
Denmark			105.8	122 2	139.9	158 2	177.1	196.6	251.1	298 5	305.2	
Finland					36.5	41.3	46.2	51.3	65.5	77.9	79 7	
F R D	1331.2	1557 5	1822.4	2104 5	2409.4	2723.6	3049 7	3385.1	4323.6	5139.6	5255.4	
Greece			40 5	46.8	53.6	60.5	67 8	75.2	96.1	114 2	116.8	

Telex by Country

	1983	1984	1985	1986	1987	1988	1989	1990	1994	1999	2000	NOTE
Hungary						35.3	39.6	43.9	56 1	66 7	68 2	
Netherland	903.3	1056.8	1236.6	1428 1	1635.0	1848.1	2069.5	2297.1	2934.0	3487 7	3566.3	
Norway			69.8	80.6	92.2	104 3	116 8	129.6	165.5	196.8	201.2	
Roumania			25.1	28.9	33.1	37.4	41.9	46.5	59.4	70.7	72.2	
Spain	64 5	75.4	88.3	101.9	116.7	131.9	147.7	164.0	209.4	248.9	254 6	
Sweden			124.8	144.1	165.0	186.5	208.8	231.8	296.1	352 0	359 9.	
Turkey			45.4	52.5	60 1	67.9	76.0	84.4	107 8	128.1	131.0	
U.S.S.R						16 8	18.8	20.9	26.7	31.7	32.4	
United Kingdom	1739.5	2035.2	2381.4	2750 1	3148.4	3558.9	3985.1	4423.5	5649.7	6716.0	6867.4	
Yugoslavia			34.7	40.0	45.8	51.8	58 0	64 4	82.2	97.7	99.9	
Canada	148 6	173.9	203.5	235.0	269.0	304 1	340 5	377 9	482 7	573.8	586.8	
Hawaii			25.8	29.7	34 1	38.5	43.1	47.8	61.1	72.6	74.3	

Telex by Country

	1983	1984	1985	1986	1987	1988	1989	1990	1994	1999	2000	NOTE
U S A	2902.5	3395.8	3657 5	4224.3	4802.6	5406.5	6055.4	6721.6	8565.3	10182.6	10412 5	
R C A	609.5	713.1	768.1	887 1.	1008.5	1135.4	1271.6	1411.5	1798.7	2138.3	2186.6	21 %
I T T	1509.3	1765.8	1901 9	2196.6	2497.4	2811.4	3148.8	3495.2	4454.0	5295.0	5414.5	52 %
W U I	783.7	916.9	987.5	1140.6	1296.7	1459.7	1635.0	1814.8	2312.6	2749.3	2811.4	27 %
Australia	1085.4	1270.1	1326 7	1532.3	1754.3	1982.7	2218.5	2464.7	3147.8	3742.0	3826.3	
Switzerland	818.8	958.0	1096.6	1268.9	1454.7	1632.6	1835.3	2037.3	2600.9	3093.2	3177.1	
France	959.7	1122.8	1137 3	1313.7	1504.5	1666.2	1866.2	2071.6	2645.7	3145.2	3216.0	
Hong Kong	1966.0	2300.0	2691.3	3108.1	3558.5	4021.9	4504.3	4999.4	6385.4	7590.7	7761.8	
Italy	1446.2	1692.3	942	1087.9	1246.9	1334.3	1459.8	1620.3	2450.2	2402.8	2457.4	

Telex Traffic by Country and by Gateway

Upper : Busy Hour Erlang
Lower: Annual paid minutes (thousands)

Circuit	Gateway	1983	1984	1985	1986	1987	1988	1989	1990	1994	1999	2000
India	Indonesia total	2.56 188.8	3 220.9	3 48 258 5	4 298.5	4.55 341.8	5.12 386 3	5.7 432 6	6.25 480.2	7.84 613 3	9 21 729	9.41 745 4
	Jakarta		2 77 205 4	3 18 237 8	3 62 271.6	4.07 307.6	4.53 343.8	4.99 380.7	5 42 417.8	6 65 521 3	7 58 601.4	7 69 611.2
	Medan		0.23 15.5	0.3 20.7	0.38 26.9	0 48 34 2	0.59 42.5	0.71 51.9	0.83 62 4	1.2 92	1.61 127.6	1.72 134.2
Japan	Indonesia total	41 86 3086.3	48.98 3611	56 9 4225 2	65.41 4879 5	74.38 5586.2	83 66 6314.5	93 24 7070.7	102.11 7848 5	127.96 10007.1	150.37 11895 8	153 54 12163 8
	Jakarta		45.28 3358.2	52.05 3887 2	59.17 4440.3	66.55 5027.6	74 01 5619.9	81.56 6222.2	88 57 6828 2	108.44 8506	123 68 9814	125.51 9974.3
	Medan		3.69 252.8	4.86 338	6 24 439.2	7.83 558.6	9.64 694.6	11 68 848 5	13 54 1020.3	19.52 1501 1	26.7 2081.8	28 02 2189.5
Malaysia	Indonesia total	4.96 366	5.81 428.3	6.75 501.2	7.76 578.7	8.82 662.6	9.92 748 9	11 06 838.6	12.11 930.9	15.2 1188.9	17.87 1413.4	18.24 1445.2
	Jakarta		5 37 398.3	6 17 461.1	7.02 526 6	7.89 596.3	8.78 666.5	9.67 738	10.51 809.9	12.88 1010 6	14.69 1166.1	14.91 1185.1
	Medan		0.44 30	0 58 40.1	0.74 52 1	0 93 66.3	1 14 82.4	1.38 100.6	1.61 121	2.32 178.3	3 17 247.3	3.33 260.1
Philippines RCA	Indonesia total	1.98 146	2.32 170.8	2.69 199.8	3.09 230.8	3.52 264.2	3.96 298.7	4.41 334.4	4.83 371.2	6 06 474 1	7.12 563.6	7.27 576.2
	Jakarta			2.46 183 8	2.8 210	3.15 237.8	3.5 265 8	3.86 294.3	4.19 322.9	5.14 403	5.86 465	5.95 472.5
	Medan			0.23 16	0 29 20.8	0.37 26 4	0.46 32.9	0.55 40.1	0.64 48 3	0.92 71.1	1.26 98.6	1.33 103.7

Circuit	Gateway	1983	1984	1985	1986	1987	1988	1989	1990	1994	1999	2000
Philippines ITT	Indonesia	0.95	1.11	1.29	1.48	1.69	1 9	2.11	2.31	2.91	3 41	3.49
	total	69.9	81.8	95.7	110.6	126.6	143 1	160.2	177.9	227.2	270	276.1
	Jakarta						1.68	1.85	2.01	2.46	2.81	2.85
							127.4	141	154.8	193.1	222.7	226.4
	Medan						0.22	0.26	0.31	0 44	0.61	0.64
							15.7	19.2	23.1	34.1	47.3	49.7
Philippines ETPI	Indonesia	0.99	1.16	1.35	1.55	1.76	1.98	2.2	2.41	3.03	3 56	3.64
	total	73	85 4	99.9	115.4	132.1	149 3	167.2	185.6	237	281.8	288.1
	Jakarta						1.75	1.93	2.09	2.57	2.93	2.97
							132.9	147.1	161.5	201 4	232.5	236.2
	Medan						0 23	0.28	0.32	0 46	0.63	0 66
							16.4	20 1	24.1	35.6	49.3	51.9
Singapore	Indonesia	77.43	90.58	105.23	120.96	137.54	154.7	172.43	188 82	237 03	278 54	284.41
	total	5709.3	6679 9	7813 1	9023 1	10329 8	11676 7	13074.9	14513 3	18536.8	22035 2	22531.6
	Jakarta		83.75	96.24	109.42	123.06	136.86	150.83	163.78	200.87	229.09	232.49
			6212.3	7188.1	8211	9296.8	10392.3	11505 9	12626.6	15756.3	18179	18475.9
	Medan		6.83	8.98	11.53	14 48	17.83	21.6	25.04	36 16	49.45	51.91
			467.6	625	812 1	1033	1284.4	1569	1886.7	2780.5	3856.2	4055 7
Thailand	Indonesia	2 6	3.04	3.53	4.06	4.62	5.2	5.79	6.34	7.96	9.36	9 56
	total	191.7	224.3	262.5	303.1	347	392.3	439.2	487.5	622.7	740.2	757
	Jakarta		2.81	3.23	3 68	4.13	4.6	5 07	5.5	6.75	7.7	7.81
			208 6	241.5	275.8	312.3	349.1	386.5	424.1	529 3	610 7	620.7
	Medan		0.23	0.3	0.39	0.49	0 6	0.73	0 84	1.21	1.66	1.74
			15.7	21	27.3	34.7	43.2	52.7	63 4	93 4	129 5	136 3

Appendix 4. 5. 1 — 7 (2)

Circuit	Gateway	1983	1984	1985	1986	1987	1988	1989	1990	1994	1999	2000
Taiwan	Indonesia total	6.27 462	7 33 540 6	8 52 632.6	9 79 730.5	11 14 836.4	12.52 945 4	13.96 1058 6	15.29 1175	19.19 1500.7	22.55 1784 1	23 03 1824.3
	Jakarta		6 78 502 8	7.79 582	8 86 664 8	9.96 752.8	11.08 841.4	12 21 931.6	13.26 1022.2	16.26 1275 6	18 55 1471.9	18 82 1495 9
	Medan		0 55 37.8	0 73 50.6	0.93 65.7	1.17 83 6	1 44 104	1.75 127	2.03 152.8	2.93 225.1	4 312.2	4.2 328.4
Austria	Indonesia total	1.01 55.9	1.18 65.4	1.37 76 6	1.58 88.4	1.8 101.2	2.02 114.4	2.25 128.1	2 47 142 2	3 1 181.6	3 64 215 9	3 72 220 8
	Jakarta										2.99 178 1	3 04 181.1
	Medan										0 65 37.8	0 68 39.7
West Germany	Indonesia total	24.07 1331.2	28.17 1557.5	32.72 1822.4	37.62 2104.5	42.77 2409.4	48 11 2723.6	53.62 3049.7	58 72 3385.1	73.71 4323.6	86.62 5139.6	88.45 5255.4
	Jakarta			29.93 1676.6	34.03 1915 1	38 27 2168 5	42.56 2424	46 91 2683.7	50 93 2945	62 47 3675.1	71.25 4240.2	72.3 4309.4
	Medan			2.79 145 8	3 59 189.4	4.5 240.9	5 55 299 6	6 72 366	7.79 440.1	11.24 648.5	15 38 899.4	16.14 946
Nether lands	Indonesia total	16.33 903.3	19.11 1056.8	22 21 1236.6	25.53 1428.1	29 03 1635	32 65 1848.1	36.39 2069 5	39.85 2297.1	50.02 2934	58.78 3487.7	60.02 3566 3
	Jakarta			20 31 1137.7	23.09 1299.6	25.97 1471.5	28.88 1644.8	31.83 1821.2	34.56 1998.5	42.39 2493.9	48 35 2877.4	49.07 2924.4
	Medan			1.89 98.9	2.43 128.5	3.06 163.5	3.76 203.3	4.56 218.3	5.28 298 6	7.63 440.1	10.43 610.3	10.95 641.9

Circuit	Gateway	1983	1984	1985	1986	1987	1988	1989	1990	1994	1999	2000
Spain	Indonesia	1.17	1.36	1.58	1.82	2.07	2.33	2.6	2.84	3.57	4.2	4 28
	total	64.5	75.4	88.3	101.9	116.7	131.9	147.7	164	209.4	248.9	254 6
	Jakarta										3.45	3.5
											205.3	208.8
	Medan										0.74	0.78
											43 6	45.8
United Kingdam	Indonesia	31.46	36.8	42.76	49.15	55.89	62.87	70.07	76 73	96.32	113 19	115 58
	total	1739.5	2035.2	2381.4	2750.1	3148.4	3558.9	3985.1	4423.5	5649.7	6716	6867.4
	Jakarta			39.11	44.47	50.01	55 62	61.29	66.56	81.63	93.1	94.48
				2190.9	2502.6	2833.6	3167.4	3506.9	3848 4	4802 2	5540.7	5631.3
	Medan			3.65	4.69	5.89	7.25	8 78	10.17	14 69	20.09	21.1
				190.5	247.5	314.8	391.5	478.2	575.1	847.5	1175.3	1236.1
Canada	Indonesia	2 69	3.14	3.65	4.2	4.78	5.37	5.99	6.56	8.23	9.67	9.88
	total	148 6	173 9	203 5	235	269	304.1	340.5	377.9	482.7	573.8	586 8
	Jakarta											
	Medan											
U.S.A / R C A	Indonesia	11.02	12.34	13.79	15 8	17.87	20.06	22 36	24.48	30.66	36.04	36.8
	total	609.5	713.1	768.1	887.1	1008.5	1135.4	1271.6	1411.5	1798.4	2138.3	2186 6
	Jakarta											
	Medan											

Circuit	Gateway	1983	1984	1985	1986	1987	1988	1989	1990	1994	1999	2000
U. S. A / I T T	Indonesia total	27.29 1509 3	30 56 1765.8	34.15 1901.9	39.12 2196 6	44.24 2497.4	49.67 2811.4	55 37 3148 8	60.63 3495 2	75 94 4454	89.25 5295	91.13 5414 5
	Jakarta											
	Medan											
U. S. A / WUT	Indonesia total	14.17 783 7	15.87 916.9	17. 73 987. 5	20.31 1140.6	22.97 1296.7	25.79 1459 7	28. 75 1635	31.48 1814.8	39 43 2312.6	46.34 2749.3	47 32 2811.4
	Jakarta											
	Medan											
Australia	Indonesia total	14. 72 1085.4	16.23 1270.1	17. 87 1326 7	20. 54 1532.3	23.36 1754.3	26. 26 1982.7	29. 27 2218.5	32.07 2464.7	40. 25 3147 8	47. 3 3742	48.3 3826 3
	Jakarta					20.9 1578 9	23. 23 1764. 6	25. 6 1952 3	27. 81 2144.3	34.11 2675.6	38.9 3087.1	39.48 3137. 6
	Medan					2 46 175.4	3.03 218 1	3.67 266.2	4. 25 320 4	6 14 472.2	8.4 654 9	8.81 688.7
Swiss	Indonesia total	14.81 818 8	17.12 958	19.71 1096.6	22.7 1268.9	25. 73 1454.7	28.9 1632.6	32.27 1835.3	35.34 2037.3	44.34 2600.9	52.25 3093.2	53.47 3177.1
	Jakarta			18.03 1008.9	20. 53 1154.7	23.02 1309.2	25. 57 1453	28 23 1615.1	30. 65 1772.5	37. 58 2210.8	42. 98 2551. 9	43.71 2605 2
	Medan			1. 68 87. 7	2.16 114.2	2.71 145.5	3.33 179 6	4.04 220.2	4. 69 264.8	6 76 390.1	9. 28 541.3	9. 76 571.9

Circuit	Gateway	1983	1984	1985	1986	1987	1988	1989	1990	1994	1999	2000
France	Indonesia	17.35	18.83	20.42	23.48	26.42	29.44	32.81	35.94	45.11	53.01	54.13
	total	959.7	1122 8	1137.3	1313.7	1504.5	1666.2	1866.2	2071.6	2645.7	3145.2	3216
	Jakarta			18.68	21.25	23.64	26.04	28.7	31.17	38.23	43 6	44.25
				1046.3	1195.5	1354	1482 9	1642.3	1802 3.	2248.8	2594 8	2637.1
	Medan			1.74	2.21	2.78	3.39	4.11	4.76	6 88	9.41	9.88
				91	118.2	150.5	183.3	223.9	269.3	396.9	550.4	578.9
Hong kong	Indonesia	26.66	31.2	36.25	41.67	47.38	53.29	59.4	65 04	81.65	95.95	97.97
	total	1966	2300	2691.3	3108.1	3558.5	4021.9	4504.3	4999.4	6385.4	7590.7	7761.8
	Jakarta		28.84	33.15	37.69	42 39	47.15	51.96	56.42	69.19	78 92	80.09
			2139	2476	2828.4	3202.6	3579.5	3963.8	4349.5	5427.6	6262.3	6364.7
	Medan		2.35	3.09	3.97	4.99	6.14	7.44	8.62	12.46	17.03	17 88
			161	215.3	279.7	355.9	442.4	540.5	649.9	957.8	1328.4	1397 1
Italy	Indonesia	26.15	21 95	16.92	19.46	21.51	23.28	25 67	28.11	41.77	40 5	41.36
	total	1446.2	1692.3	942	1087.9	1246.9	1334.3	1459.8	1620 3	2450.2	2402.8	2457.4
	Jakarta			15.47	17.6	19.25	20.6	22 45	24.38	35.4	33.31	33.81
				866.6	990	1122.2	1187.5	1284.6	1409.7	2082.7	1982.3	2015.1
	Medan			1.44	1.85	2.26	2.68	3 21	3.73	6.37	7.19	7.55
				75.4	97.9	124.7	146.8	175.2	210.6	367.5	420.5	442.3
Egypt	Indonesia			0.42	0.49	0.55	0.62	0.7	0.76	0.96	1.12	1.15
	total			23.6	27.3	31.3	35.3	39 6	43.9	56.1	66.7	68.2
	Jakarta											
	Medan											

Circuit	Gateway	1983	1984	1985	1986	1987	1988	1989	1990	1991	1999	2000
Iran	Indonesia			0 27	0.31	0.35	0.39	0 44	0 48	0.6	0.71	0 72
	total			19.9	23	26.3	29.7	33.3	37	47 2	56.1	57.4
	Jakarta											
	Medan											
Korea Rep	Indonesia			6.5	7.47	8.49	9.55	10.64	11.66	14.63	17.19	17.56
	total			482.3	557	637.7	720.8	807.2	895.9	1144.3	1360.3	1390.9
	Jakarta											
	Medan											
Kuwait	Indonesia			0 49	0.57	0 64	0.72	0 81	0.88	1.11	1.3	1.33
	total			36 5	42.2	48 3	54.6	61.1	67.8	86.7	103	105.3
	Jakarta										1.07	1.09
											85	86.3
	Medan										0.23	0.24
											18	19
New Zealand	Indonesia			1.62	1.86	2.12	2.38	2.66	2.91	3.65	4.29	4.38
	total			120.3	139	159 1	179.9	201.4	223.5	285.5	339.4	347.1
	Jakarta					1.9	2.11	2.32	2.52	3.09	3.53	3.58
						143.2	160.1	177.2	194.4	242.7	280	284.6
	Medan					0.22	0.27	0.33	0.39	0 56	0.76	0.8
						15.9	19.8	24.2	29.1	42.8	59.4	62.5

Circuit	Gateway	1983	1984	1985	1986	1987	1988	1989	1990	1991	1999	2000
Pakistan	Indonesia total			0.47 34.9	0.54 40.3	0.61 46.1	0.69 52 1	0 77 58.4	0.84 64.8	1.06 82.8	1.24 98 4	1.27 100.6
	Jakarta										1.02 81.2	1.04 82.5
	Medan										0 22 17.2	0 23 18 1
Papua New Guinea	Indonesia total			0.57 42 6	0 66 49 2	0.75 56 3	0.84 63.7	0.94 71.3	1.03 79.2	1.29 101.1	1.52 120.2	1.55 122 9
	Jakarta											
	Medan											
Saudi Arabia	Indonesia total			2.48 184	2.85 212.5	3.24 243 3	3.64 275	4.06 308	4.45 341.8	5.58 436.6	6.56 519	6.7 530 7
	Jakarta				2.58 193 4	2.9 219	3.22 244.7	3 55 271	3 86 297.4	4.73 371.1	5.4 428.2	5 48 435.2
	Medan				0 27 19.1	0.34 24.3	0 42 30.3	0.51 37	0 59 44.4	0 85 65.5	1.16 90.8	1.22 95.5
Sri Lanka	Indonesia total			0.8 59.2	0.92 68 4	1.04 78.3	1.17 88 5	1.31 99.1	1 43 110	1.8 140.5	2 11 167.1	2 16 170.8
	Jakarta									1.52 119.4	1.74 137.9	1 76 140 1
	Medan									0.27 21.1	0.37 29.2	0.39 30.7

Circuit	Gateway	1983	1984	1985	1986	1987	1988	1989	1990	1994	1999	2000
U. A. E.	Indonesia total			0 71 52.4	0.81 60.6	0 92 69.3	1.04 78 4	1 16 87.8	1.27 97.4	1.59 124 4	1.87 147.9	1.91 151.2
	Jakarta									1.35 105.7	1.54 122	1.56 124
	Medan									0 24 18.7	0.33 25 9	0.35 27.2
Belgium	Indonesia total			4.17 232.3	4.79 268.2	5.45 307.1	6.13 347.1	6 83 388 7	7.48 431.4	9.39 551	11.04 655.1	11.27 669.8
	Jakarta						5 42 308.9	5.98 342 1	6 49 375 3	7.96 468 3	9.08 540.5	9.22 549.2
	Medan						0 71 38.2	0 86 46.6	0.99 56.1	1.43 82.7	1.96 114.6	2 06 120.6
Denmark	Indonesia total			1.9 105.8	2 18 122.2	2 48 139.9	2.79 158.2	3.11 177.1	3.41 196.6	4 28 251.1	5.03 298.5	5.14 305.2
	Jakarta									3 63 213 4	4.14 246.3	4.2 250 3
	Medan									0.65 37.7	0.89 52.2	0.94 54.9
Greece	Indonesia total			0.73 40 5	0.81 46.8	0 95 53.6	1.07 60 5	1.19 67.8	1.3 75.2	1.64 96.1	1.92 114.2	1 97 116 8
	Jakarta											
	Medan											

Circuit	Gateway	1983	1984	1985	1986	1987	1988	1989	1990	1994	1999	2000
Norway	Indonesia			1.25	1.44	1.64	1.84	2.05	2.25	2.82	3.32	3.39
	total			69.8	80.6	92.2	104 3	116.8	129.6	165.5	196.8	201.2
	Jakarta											2 77
												165
	Medan											0.62
												36.2
Roumania	Indonesia			0.45	0.52	0.59	0.66	0.74	0.81	1.01	1.19	1.22
	total			25.1	28.9	33.1	37.4	41.9	46.5	59.4	70.7	72.2
	Jakarta											
	Medan											
Sweden	Indonesia			2 24	2.58	2.93	3.29	3 67	4.02	5.05	5.93	6 06
	total			124.8	144.1	165	186 5	208 8	231.8	296.1	352	359.9
	Jakarta									4 28	4.88	4 95
										251 7	290.4	295.1
	Medan									0.77	1.05	1.11
										44.4	61.6	64.8
Turkey	Indonesia			0.61	0.7	0.8	0.9	1	1.1	1.38	1.62	1.65
	total			45.4	52.5	60.1	67.9	76	84.4	107.8	128 1	131
	Jakarta											
	Medan											

Circuit	Gateway	1983	1984	1985	1986	1987	1988	1989	1990	1994	1999	2000
Yugoslavia	Indonesia			0.62	0.71	0.81	0.91	1.02	1.12	1.4	1.64	1.68
	total			34.7	40	45.8	51.8	58	64.4	82 2	97.2	99.9
	Jakarta											
	Medan											
Hawaii	Indonesia			0.46	0 53	0.6	0.68	0.76	0.83	1 04	1.22	1.25
	total			25 8	29.7	34.1	38.5	43.1	47.8	61.1	72.6	74.3
	Jakarta											
	Medan											
Finland	Indonesia					0 65	0.73	0.81	0 89	1.12	1.31	1.34
	total					36.5	41.3	46.2	51 3	65.5	77.9	79.7
	Jakarta											
	Medan											
Brazil	Indonesia						0.66	0.74	0.81	1.01	1.19	1.22
	total						37.4	41.9	46.5	59.4	70.7	72.2
	Jakarta											
	Medan											

Circuit	Gateway	1983	1984	1985	1986	1987	1988	1989	1990	1994	1999	2000
Mexico	Indonesia total						0.66 37.4	0.74 41.9	0 81 46.5	1.01 59.4	1.19 70.7	1.22 72.2
	Jakarta											
	Medan											
Hungary	Indonesia total						0.62 35.3	0.7 39.6	0 76 43.9	0.96 56.1	1.12 66.7	1.15 68.2
	Jakarta											
	Medan											
USSR	Indonesia total						0.3 16.8	0.33 18.8	0.36 20.9	0.46 26 7	0.53 31.7	0.55 32.4
	Jakarta											
	Medan											
Ethiopia	Indonesia total							0.65 37.2	0.72 41.3	0.9 52.8	1.06 62 7	1.08 64.1
	Jakarta											
	Medan											

Circuit	Gateway	1983	1984	1985	1986	1987	1988	1989	1990	1991	1999	2000
Kenya	Indonesia total									0.32 18 9	0 38 22.5	0.39 23
	Jakarta											
	Medan											
Korea DPR	Indonesia total									0.22 17.2	0.26 20.5	0.26 20.9
	Jakarta											
	Medan											
Jordan	Indonesia total									0.25 19.4	0.29 23.1	0.3 23 6
	Jakarta											
	Medan											
Sauth africa	Indonesia total										0 29 17.2	0.3 17.6
	Jakarta											
	Medan											
Bahrain	Indonesia total										0.22 17.8	0 23 18.2
	Jakarta											
	Medan											

Assumed Concentration Ratio for Intarnational Telex

Circuit	Concentration Ratio (%)	Circuit	Concentration Ratio (%)
Egypt	20	U. A. E.	15
Ethiopia	20	Taiwan	15
Kenya	20	Austria	20
S. Africa	20	Belgium	20
Brazil	20	Czechoslovakia	20
Mexico	20	Denmark	20
Australia	15	Finland	20
Bahrain	15	France	20
D. P. R. Korea	15	Germany	20
Hong Kong	15	Greece	20
India	15	Hungary	20
Iran	15	Italy	20
Japan	15	Netherlands	20
Jordan	15	Norway	20
R. Korea	15	Roumania	20
Kuwait	15	Spain	20
Malaysia	15	Sweden	20
Newzealand	15	Switzerland	20
Pakistan	15	Turky	15
Papua New-Guinea	15	USSR	20
Philippines	15	U. K	20
Saudi Arabia	15	Yugoslavia	20
Singapore	15	Canada	20
Sri Lanka	15	U. S. A	20
Thailand	15	Hawaii	20

Telex International Circuits

	83		84		85		86		87		88		89		90		94		99		2000	
	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN
India	7	—	7	3	8	3	8	3	9	3	10	3	10	4	11	4	12	5	14	5	14	6
Japan	52	—	56	9	63	10	71	12	78	14	86	16	94	19	101	21	122	28	137	36	139	37
Malaysia	10	—	11	3	12	3	13	4	14	4	15	5	16	5	17	5	20	7	22	8	23	8
Philippines RCA	6	—	7	—	7	3	7	3	8	3	8	3	9	3	9	4	11	4	12	5	12	5
ITT	4	—	5	—	5	—	5	—	6	—	6	2	6	3	6	3	7	3	7	4	7	4
ETPI	4	—	5	—	5	—	5	—	6	—	6	3	6	3	6	3	7	3	7	4	8	4
Singapore	90	—	96	12	109	15	123	19	136	22	150	26	165	30	178	34	215	46	243	60	247	63
Thailand	7	—	7	3	8	3	9	3	9	3	10	3	10	4	11	4	13	5	14	6	14	6
Taiwan	12	—	13	3	14	4	15	4	17	5	18	5	19	6	21	6	24	7	27	9	27	9
Austria	4	—	5	—	5	—	5	—	6	—	6	—	6	—	7	—	8	—	8	4	8	4

Telex International Circuits

	83		84		85		86		87		88		89		90		94		99		2000	
	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN
West Germany	33	—	37	—	39	7	44	8	48	10	53	11	58	13	62	14	74	18	83	23	84	24
Netherlands	24	—	27	—	29	6	32	7	35	8	38	9	41	10	44	11	53	14	59	17	60	18
Spain	5	—	5	—	5	—	6	—	6	—	7	—	7	—	7	—	8	—	8	4	8	4
United Kingdom	41	—	47	—	49	9	55	10	61	12	67	13	73	15	78	17	94	22	106	29	108	30
Canada	7	—	8	—	9	—	9	—	10	—	11	—	12	—	12	—	15	—	16	—	17	—
USA RCA	18	—	20	—	21	—	24	—	26	—	28	—	31	—	33	—	40	—	46	—	47	—
USA ITT	36	—	40	—	44	—	49	—	55	—	61	—	67	—	72	—	88	—	102	—	104	—
USA WUI	22	—	24	—	26	—	29	—	32	—	35	—	38	—	41	—	50	—	57	—	58	—
Australia	22	—	24	—	26	—	29	—	29	7	32	8	35	9	37	9	44	12	49	15	50	15
Swiss	22	—	25	—	26	6	29	6	32	7	35	8	37	9	40	10	48	13	53	16	55	16

Telex International Circuits

	83		84		85		86		87		88		89		90		94		99		2000	
	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN
France	25	—	27	—	27	6	30	6	32	7	35	8	38	9	41	10	48	13	54	16	55	17
Hong Kong	36	—	38	7	43	8	48	9	53	10	58	12	63	14	68	15	81	20	91	25	93	26
Italy	35	—	31	—	23	5	26	6	27	6	29	7	31	8	33	9	45	12	43	13	44	14
Egypt					3	—	3	—	3	—	4	—	4	—	4	—	4	—	5	—	5	—
Iran					3	—	3	—	3	—	3	—	3	—	3	—	3	—	4	—	4	—
Korea R.					12	—	14	—	15	—	16	—	17	—	19	—	22	—	25	—	26	—
Kuwait					3	—	3	—	4	—	4	—	4	—	4	—	5	—	4	3	4	3
New Zealand					5	—	6	—	6	2	6	3	7	3	7	3	8	3	8	4	8	4
Pakistan					3	—	3	—	4	—	4	—	4	—	4	—	4	—	4	2	4	3
Papua New Guinea					3	—	4	—	4	—	4	—	4	—	4	—	5	—	5	—	5	—

Telex International Circuits

	83		84		85		86		87		88		89		90		94		99		2000	
	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN
Saudi Arabia					7	—	7	3	7	3	8	3	8	3	9	3	10	4	11	5	11	5
Sri Lanka					4	—	4	—	4	—	5	—	5	—	5	—	5	3	6	3	6	3
U A E					4	—	4	—	4	—	4	—	5	—	5	—	5	3	5	3	5	3
Belgium					9	—	10	—	11	—	11	4	12	4	12	4	14	5	16	6	16	6
Denmark					6	—	6	—	7	—	7	—	8	—	8	—	9	4	9	4	9	4
Greece					4	—	4	—	4	—	4	—	5	—	5	—	5	—	6	—	6	—
Norway					5	—	5	—	5	—	6	—	6	—	6	—	7	—	8	—	7	4
Roumania					3	—	3	—	3	—	4	—	4	—	4	—	4	—	5	—	5	—
Sweden					6	—	7	—	7	—	8	—	9	—	9	—	9	4	10	4	10	5
Turkey					4	—	4	—	4	—	4	—	4	—	5	—	5	—	5	—	5	—

Telex International Circuits

	83		84		85		86		87		88		89		90		94		99		2000	
	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN
Yougoslavia					4	—	4	—	4	—	4	—	4	—	5	—	5	—	5	—	6	—
Hawaii					3	—	3	—	3	—	4	—	4	—	4	—	4	—	5	—	5	—
Finland									4	—	4	—	4	—	4	—	5	—	5	—	5	—
Brazil											4	—	4	—	4	—	4	—	5	—	5	—
Mexico											4	—	4	—	4	—	4	—	5	—	5	—
Hangary											4	—	4	—	4	—	4	—	5	—	5	—
USSR											3	—	3	—	3	—	3	—	3	—	3	—
Ethiopia													4	—	4	—	4	—	4	—	4	—
Kenya																	3	—	3	—	3	—
Korea D.P.R.																	2	—	3	—	3	—

Telex International Circuits

	83		84		85		86		87		88		89		90		94		99		2000	
	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN	JKT	MDN
Jordan																	3	—	3	—	3	—
South Africa																			3	—	3	—
Bahrain																			2	—	3	—
Grand Total	522	—	565	40	694	88	768	103	841	126	933	152	1012	174	1080	189	1292	258	1445	333	1471	350

Required Number of Circuits for Packet Switching Service

Year	1985	1986	1987	1988	1989	1990	1994	1999	2000	Remarks
Annual Traffic (10^6 segments) A	4	39	65	106	156	227	558	1,670	2,085	
Daily Traffic at year end (10^3 segments) B	86	208	342	524	766	1,067	2,511	7,510	9,341	$\frac{At+At+1}{2\times250}$
Busy Hour Traffic at year end (10^3 segments) C	26	62	103	157	230	311	753	2,253	2,802	B × 0.3
Required Segments (10^3) to handle busy hour traffic D	43	103	172	262	383	518	1,255	3,755	4,670	$C\times\frac{10}{6}$
Required Speed (Kbps) to handle busy hour traffic E	6.1	14.6	24.5	37.3	54.5	73.7	178.5	534.0	664.2	$\frac{D\times512}{60\times60}$
Required Number of Circuits	1	2	3	4	6	8	19	56	70	9.6 Kbps/cct

Appendix 4.6.1-2

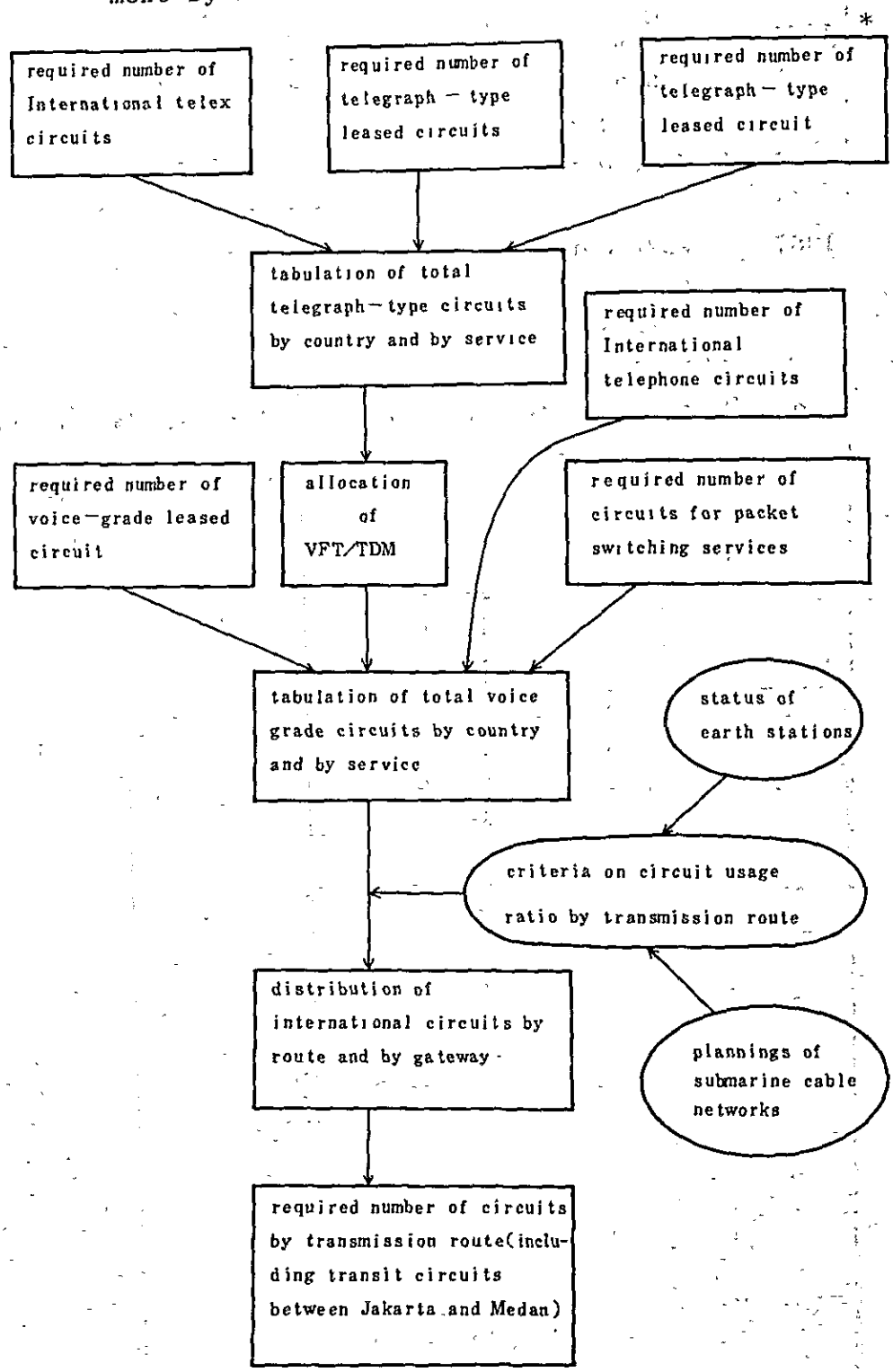
Packet Switching Service Circuit Expansion

1985 Japan
Singapore
United Kingdom
United States of America (3 IRC s)

1987 West Germany
France
Australia

1990- Increase in the number of circuits for the above destinations and addition of destinations.

Flowchart of International Circuit Planning
(Tabulation of International Circuit Requirement by Service and by Transmission Route)



Leased Circuit Telegraph Type

Appendi 4・7・1－2(1)

Channels

Country	83	84	85	86	87	88	89	90	94	99	2000
Hong Kong	65	66	66	66	67	67	67	67	50	26	25
Singapore	20	23	23	23	24	24	28	30	49	75	76
Japan	15	18	19	19	19	20	20	20	20	20	20
Philippines	5	6	6	7	7	7	7	7	7	7	7
Thailand	0	0	1	1	1	1	1	1	1	1	1
India	2	2	2	3	3	4	4	4	4	4	4
U.S.A.	9	9	9	9	9	9	9	9	10	11	11
West Gernany	6	6	6	6	7	7	7	7	8	8	8
Canada	2	2	2	3	3	3	3	3	3	3	3
Switzerland	1	1	2	2	2	2	2	2	2	2	2
Austria	2	2	2	2	2	2	2	2	3	3	3
United Kingdom	1	1	2	2	2	3	3	3	3	3	3
New Zealand	0	0	0	1	1	1	1	1	1	1	1
Australia	6	6	6	6	7	7	7	7	7	7	7
France	1	1	1	2	2	2	2	2	2	2	2
Netherlands	1	1	1	1	1	1	1	1	1	2	2

Leased Circuit Telegraph Type

Country	83	84	85	86	87	88	89	90	94	99	2000
Taiwan	0	0	0	1	1	1	1	1	1	1	1
Malaysia	0	0	1	1	1	1	1	1	2	2	2
Korea	0	0	0	0	1	1	1	1	1	1	1
Saudi Arabia	0	0	0	0	0	1	1	1	1	1	1
Italy	0	0	1	1	1	1	1	1	2	2	2
TG type Total	136	144	150	156	161	165	168	171	178	182	182

Required Telegraph Type Circuits by Country and Service

Country	Service	Gateway	84	85	86	87	88	89	90	94	99	2000
India	Telex	Jakarta	7	8	8	9	10	10	11	12	14	14
		Medan	3	3	3	3	3	4	4	5	5	6
	Telegram	Jakarta	—	1	1	1	1	1	1	1	1	1
	L C	Jakarta	2	2	3	3	4	4	4	4	4	4
	Total	Jakarta	9	11	12	13	15	15	16	17	19	19
		Medan	3	3	3	3	3	4	4	5	5	6
Japan	Telex	Jakarta	56	63	71	78	86	94	101	122	137	139
		Medan	9	10	12	14	16	19	21	28	36	37
	Telegram	Jakarta	1	1	1	1	1	1	1	1	1	1
	L C	Jakarta	15	18	19	19	19	20	20	20	20	20
	Total	Jakarta	72	82	91	98	106	115	122	143	158	160
		Medan	9	10	12	14	16	19	21	28	36	37
Malaysia	Telex	Jakarta	11	12	13	14	15	16	17	20	22	23
		Medan	3	3	4	4	5	5	5	7	8	8
	Telegram	Jakarta	1	1	1	1	1	1	1	1	1	1
	L C	Jakarta	0	1	1	1	1	1	1	2	2	2
	Total	Jakarta	12	14	15	16	17	18	19	23	25	26
		Medan	3	3	4	4	5	5	5	7	8	8
Philippines R C A	Telex	Jakarta	7	7	7	8	8	9	9	11	12	12
		Medan	—	3	3	3	3	3	4	4	5	5
	Telegram	Jakarta	1	1	1	1	1	1	1	1	1	1
	L C	Medan	3	3	3	4	4	4	4	4	4	4
	Total	Jakarta	11	11	11	13	13	14	14	16	17	17
		Medan	0	3	3	3	3	3	4	4	5	5
Philippines I T T	Telex	Jakarta	5	5	5	6	6	6	6	7	7	7
		Medan	—	—	—	—	2	3	3	3	4	4
	Telegram	Jakarta	1	1	1	1	1	1	1	1	1	1
	L C	Jakarta	2	3	3	3	3	3	3	3	3	3
	Total	Jakarta	8	9	9	10	10	10	10	11	11	11
		Medan	—	—	—	—	2	3	3	3	4	4

Required Telegraph Type Circuits by Country and by Service

Country	Service	Gateway	84	85	86	87	88	89	90	94	99	2000
Philippines ETPI	Telex	Jakarta	5	5	5	6	6	6	6	7	7	8
		Medan	—	—	—	—	3	3	3	3	4	4
	Telegram	Jakarta	1	1	1	1	1	1	1	1	1	1
	L C	Jakarta	—	—	—	—	—	—	—	—	—	—
	Total	Jakarta	6	6	6	7	7	7	7	8	8	9
		Medan	—	—	—	—	3	3	3	3	4	4
Singapore	Telex	Jakarta	96	109	123	136	150	165	178	215	243	247
		Medan	12	15	19	22	26	30	34	46	60	63
	Telegram	Jakarta	1	1	1	1	1	1	1	1	1	1
	L C	Jakarta	23	23	23	24	24	28	30	49	75	76
	Total	Jakarta	120	133	147	161	175	194	209	265	319	324
		Medan	12	15	19	22	26	30	34	46	60	63
Thailand	Telex	Jakarta	7	8	9	9	10	10	11	13	14	14
		Medan	3	3	3	3	3	4	4	5	6	6
	Telegram	Jakarta	1	1	1	1	1	1	1	1	1	1
	L C	Jakarta	0	1	1	1	1	1	1	1	1	1
	Total	Jakarta	8	10	11	11	12	12	13	15	16	16
		Medan	3	3	3	3	3	4	4	5	6	6
Taiwan	Telex	Jakarta	7	8	9	9	10	10	11	13	14	14
		Medan	3	3	3	3	3	4	4	5	6	6
	Telegram	Jakarta	1	1	1	1	1	1	1	1	1	1
	L C	Jakarta	0	0	1	1	1	1	1	1	1	1
	Total	Jakarta	8	9	11	11	12	12	13	15	16	16
		Medan	3	3	3	3	3	4	4	5	6	6
Austria	Telex	Jakarta	5	5	5	6	6	6	7	8	8	8
		Medan	—	—	—	—	—	—	—	—	4	4
	Telegram	Jakarta	1	1	1	1	1	1	1	1	1	1
	L C	Jakarta	2	2	2	2	2	2	2	3	3	3
	Total	Jakarta	8	8	8	9	9	9	10	12	12	12
		Medan									4	4

Required Telegraph Type Circuits by Country and by Service

Country	Service	Gateway	84	85	86	87	88	89	90	94	99	2000
West Germany	Telex	Jakarta	37	39	44	48	53	58	62	74	83	84
		Medan	—	7	8	10	11	13	14	18	23	24
	Telegram	Jakarta	5	5	5	5	5	5	5	5	5	5
	L C	Jakarta	6	6	6	7	7	7	7	8	8	8
	Total	Jakarta	48	50	55	60	65	70	74	87	96	97
		Medan	—	7	8	10	11	13	14	18	23	24
Netherlands	Telex	Jakarta	27	29	32	35	38	41	44	53	59	60
		Medan	—	6	7	8	9	10	11	14	17	18
	Telegram	Jakarta	1	1	1	1	1	1	1	1	1	1
	L C	Jakarta	1	1	1	1	1	1	1	1	1	2
	Total	Jakarta	29	31	35	37	40	43	46	55	62	63
		Medan		6	7	8	9	10	11	14	17	18
Spain	Telex	Jakarta	5	5	6	6	7	7	7	8	8	8
		Medan	—	—	—	—	—	—	—	—	4	4
	Telegram	Jakarta	0	1	1	1	1	1	1	1	1	1
	L C	Jakarta										
	Total	Jakarta	5	6	7	7	8	8	8	9	9	9
		Medan									4	4
United Kingdom	Telex	Jakarta	47	49	55	61	67	73	78	94	106	108
		Medan	—	9	10	12	13	15	17	22	29	30
	Telegram	Jakarta	1	1	1	1	1	1	1	1	1	1
	L C	Jakarta	1	2	2	2	3	3	3	3	3	3
	Total	Jakarta	49	52	58	64	71	77	82	98	110	112
		Medan		9	10	12	13	15	17	22	29	30
Canada	Telex	Jakarta	8	9	9	10	11	12	12	15	16	17
		Medan	—	—	—	—	—	—	—	—	—	—
	Telegram	Jakarta	1	1	1	1	1	1	1	1	1	1
	L C	Jakarta	2	2	3	3	3	3	3	3	3	3
	Total	Jakarta	11	12	13	14	15	16	16	19	20	21
		Medan										

Required Telegraph Type Circuits by Country and by Service

Country	Service	Gateway	84	85	86	87	88	89	90	94	99	2000
USA/RCA	Telex	Jakarta	20	21	24	26	28	31	33	40	46	47
		Medan	—	—	—	—	—	—	—	—	—	—
	Telegram	Jakarta	1	1	1	1	1	1	1	1	1	1
	L C	Jakarta	2	2	2	2	2	2	2	2	3	3
	Total	Jakarta	23	24	27	29	31	34	36	43	50	51
		Medan										
USA/ITT	Telex	Jakarta	40	44	49	55	61	67	72	88	102	104
		Medan	—	—	—	—	—	—	—	—	—	—
	Telegram	Jakarta	1	1	1	1	1	1	1	1	1	1
	L C	Jakarta	6	6	6	6	6	6	6	6	6	6
	Total	Jakarta	47	51	56	62	68	74	79	95	109	111
		Medan										
USA/WUI	Telex	Jakarta	24	26	29	32	35	38	41	50	57	58
		Medan	—	—	—	—	—	—	—	—	—	—
	Telegram	Jakarta	1	1	1	1	1	1	1	1	1	1
	L C	Jakarta	1	1	1	1	1	1	1	2	2	2
	Total	Jakarta	26	28	31	35	37	40	43	53	60	61
		Medan										
Australia	Telex	Jakarta	24	26	29	29	32	35	37	44	49	50
		Medan	—	—	—	7	8	9	9	12	15	15
	Telegram	Jakarta	1	1	1	1	1	1	1	1	1	1
	L C	Jakarta	6	6	6	7	7	7	7	7	7	7
	Total	Jakarta	31	33	36	37	40	43	45	52	57	58
		Medan				7	8	9	9	12	15	15
Swiss	Telex	Jakarta	25	26	29	32	35	37	40	48	53	55
		Medan	—	6	6	7	8	9	10	13	16	16
	Telegram	Jakarta	1	1	1	1	1	1	1	1	1	1
	L C	Jakarta	1	2	2	2	2	2	2	2	2	2
	Total	Jakarta	27	29	32	35	38	40	43	51	56	58
		Medan		6	6	7	8	9	0	13	16	16

Required Telegraph Type Circuits by Country and by Service

Country	Service	Gateway	84	85	86	87	88	89	90	94	99	2000
France	Telex	Jakarta	27	27	30	32	35	38	41	48	54	55
		Medan	—	6	6	7	8	9	10	13	16	17
	Telegram	Jakarta	1	1	1	1	1	1	1	1	1	1
	L C	Jakarta	1	1	2	2	2	2	2	2	2	2
	Total	Jakarta	29	29	33	35	38	41	44	51	57	58
		Medan	—	6	6	7	8	9	10	13	16	17
Hong Kong	Telex	Jakarta	38	43	48	53	58	63	68	81	91	93
		Medan	7	8	9	10	12	14	15	20	25	26
	Telegram	Jakarta	1	1	1	1	1	1	1	1	1	1
	L C	Jakarta	66	66	66	67	67	67	67	50	26	25
	Total	Jakarta	105	110	115	121	126	73	136	132	118	119
		Medan	7	8	9	10	12	14	15	20	25	26
Italy	Telex	Jakarta	31	23	26	27	29	31	33	45	43	44
		Medan	—	5	6	6	7	8	9	12	13	14
	Telegram	Jakarta	1	1	1	1	1	1	1	1	1	1
	L C	Jakarta	0	1	1	1	1	1	1	2	2	2
	Total	Jakarta	32	25	28	29	31	33	35	48	46	47
		Medan		5	6	6	7	8	9	12	13	14
Egypt	Telex	Jakarta		3	3	3	4	4	4	4	5	5
		Medan										
	Telegram	Jakarta		1	1	1	1	1	1	1	1	1
	L C	Jakarta										
	Total	Jakarta		4	4	4	5	5	5	5	6	6
		Medan										
Iran	Telex	Jakarta		3	3	3	3	3	3	3	4	4
		Medan										
	Telegram	Jakarta		1	1	1	1	1	1	1	1	1
	L C	Jakarta										
	Total	Jakarta		4	4	4	4	4	4	4	5	5
		Medan										

Required Telegraph Type Circuits by Country and by Service

Country	Service	Gateway	84	85	86	87	88	89	90	94	99	2000
Korea Rep	Telex	Jakarta		12	14	15	16	17	19	22	25	26
		Medan										
	Telegram	Jakarta		1	1	1	1	1	1	1	1	1
	L C	Jakarta		0	0	1	1	1	1	1	1	1
	Total	Jakarta		13	15	17	18	19	21	24	27	28
		Medan										
Kwait	Telex	Jakarta		3	3	4	4	4	4	5	4	4
		Medan									3	3
	Telegram	Jakarta		1	1	1	1	1	1	1	1	1
	L C	Jakarta										
	Total	Jakarta		4	4	5	5	5	5	6	5	5
		Medan									3	3
New Zealand	Telex	Jakarta		5	6	6	6	7	7	8	8	8
		Medan				2	3	3	3	3	4	4
	Telegram	Jakarta		1	1	1	1	1	1	1	1	1
	L C	Jakarta		1	1	1	1	1	1	1	1	1
	Total	Jakarta		7	8	8	8	9	9	10	10	10
		Medan				2	3	3	3	3	4	4
Pakistan	Telex	Jakarta		3	3	4	4	4	4	4	4	4
		Medan									2	3
	Telegram	Jakarta		1	1	1	1	1	1	1	1	1
	L C	Jakarta										
	Total	Jakarta		4	4	5	5	5	5	5	5	5
		Medan									2	3
Papur New Guinea	Telex	Jakarta		3	4	4	4	4	4	5	5	5
		Medan										
	Telegram	Jakarta		1	1	1	1	1	1	1	1	1
	L C	Jakarta										
	Total	Jakarta		4	5	5	5	5	5	6	6	6
		Medan										

Appendix 4・7・1－3(7)

Required Telegraph Type Circuits by Country and by Service

Country	Service	Gateway	84	85	86	87	88	89	90	94	99	2000
Saudi Arabia	Telex	Jakarta		7	7	7	8	8	9	10	11	11
		Medan			3	3	3	3	3	4	5	5
	Telegram	Jakarta		1	1	1	1	1	1	1	1	1
	L C	Jakarta		0	0	0	1	1	1	1	1	1
	Total	Jakarta		8	8	8	10	10	11	12	13	13
		Medan			3	3	3	3	3	4	5	5
Sri Lanka	Telex	Jakarta		4	4	4	5	5	5	5	6	6
		Medan								3	3	3
	Telegram	Jakarta		1	1	1	1	1	1	1	1	1
	L C	Jakarta										
	Total	Jakarta		5	5	5	6	6	6	6	7	7
		Medan								3	3	3
U A E	Telex	Jakarta		4	4	4	4	5	5	5	5	5
		Medan								3	3	3
	Telegram	Jakarta		1	1	1	1	1	1	1	1	1
	L C	Jakarta										
	Total	Jakarta		5	5	5	5	6	6	6	6	6
		Medan								3	3	3
Belgium	Telex	Jakarta		9	10	11	11	12	12	14	16	16
		Medan					4	4	4	5	6	6
	Telegram	Jakarta		1	1	1	1	1	1	1	1	1
	L C	Jakarta										
	Total	Jakarta		10	11	12	12	13	13	15	17	17
		Medan					4	4	4	5	6	6
Denmark	Telex	Jakarta		6	6	7	7	8	8	9	9	9
		Medan								4	4	4
	Telegram	Jakarta		1	1	1	1	1	1	1	1	1
	L C	Jakarta										
	Total	Jakarta		7	7	8	8	9	9	10	10	10
		Medan								4	4	4

Appendix 4・7・1－3(8)

Required Telegraph Type Circuits by Country and by Service

Country	Service	Gateway	84	85	86	87	88	89	90	94	99	2000
Greece	Telex	Jakarta		4	4	4	4	5	5	5	5	5
		Medan								3	3	3
	Telegram	Jakarta		1	1	1	1	1	1	1	1	1
	L C	Jakarta										
	Total	Jakarta		5	5	5	5	6	6	6	6	6
		Medan								3	3	3
Norway	Telex	Jakarta		5	5	5	6	6	6	7	8	7
		Medan										4
	Telegram	Jakarta		1	1	1	1	1	1	1	1	1
	L C	Jakarta										
	Total	Jakarta		6	6	6	7	7	7	8	9	8
		Medan										4
Roumania	Telex	Jakarta		3	3	3	4	4	4	4	5	5
		Medan										
	Telegram	Jakarta		1	1	1	1	1	1	1	1	1
	L C	Jakarta										
	Total	Jakarta		4	4	4	5	5	5	5	6	6
		Medan										
Sweden	Telex	Jakarta		6	7	7	8	9	9	9	10	10
		Medan								4	4	5
	Telegram	Jakarta		1	1	1	1	1	1	1	1	1
	L C	Jakarta										
	Total	Jakarta		7	8	8	9	10	10	10	11	11
		Medan								4	4	5
Turkey	Telex	Jakarta		4	4	4	4	4	5	5	5	5
		Medan										
	Telegram	Jakarta		1	1	1	1	1	1	1	1	1
	L C	Jakarta										
	Total	Jakarta		5	5	5	5	5	6	6	6	6
		Medan										

Required Telegraph Type Circuits by Country and by Service

Country	Service	Gateway	84	85	86	87	88	89	90	94	99	2000
Yugoslavia	Telex	Jakarta		4	4	4	4	4	5	5	5	6
		Medan										
	Telegram	Jakarta		1	1	1	1	1	1	1	1	1
	L C	Jakarta										
	Total	Jakarta		5	5	5	5	5	6	6	6	7
		Medan										
Hawaii	Telex	Jakarta		3	3	3	4	4	4	4	5	5
		Medan										
	Telegram	Jakarta		1	1	1	1	1	1	1	1	1
	L C	Jakarta										
	Total	Jakarta		4	4	4	5	5	5	5	6	6
		Medan										
Finland	Telex	Jakarta				4	4	4	4	5	5	5
		Medan										
	Telegram	Jakarta				1	1	1	1	1	1	1
	L C	Jakarta										
	Total	Jakarta				5	5	5	5	6	6	6
		Medan										
Brazil	Telex	Jakarta					4	4	4	4	5	5
		Medan										
	Telegram	Jakarta					1	1	1	1	1	1
	L C	Jakarta										
	Total	Jakarta					5	5	5	5	6	6
		Medan										
Mexico	Telex	Jakarta					4	4	4	4	5	5
		Medan										
	Telegram	Jakarta					1	1	1	1	1	1
	L C	Jakarta										
	Total	Jakarta					5	5	5	5	6	6
		Medan										

Required Telegraph Type Circuits Country and by Service

Country	Service	Gateway	84	85	86	87	88	89	90	94	99	2000
Hungary	Telex	Jakarta					4	4	4	4	5	5
		Medan										
	Telegram	Jakarta					1	1	1	1	1	1
	L C	Jakarta										
	Total	Jakarta					5	5	5	5	6	6
		Medan										
USSR	Telex	Jakarta					3	3	3	3	3	3
		Medan										
	Telegram	Jakarta					1	1	1	1	1	1
	L C	Jakarta										
	Tntal	Jakarta					4	4	4	4	4	4
		Medan										
Ethiopia	Telex	Jakarta						4	4	4	4	4
		Medan										
	Telegram	Jakarta						1	1	1	1	1
	L C	Jakarta										
	Total	Jakarta						5	5	5	5	5
		Medan										
Kenya	Telex	Jakarta								3	3	3
		Medan										
	Telegram	Jakarta								1	1	1
	L C	Jakarta										
	Total	Jakarta								4	4	4
		Medan										
Korea DPR	Telex	Jakarta								2	3	3
		Medan										
	Telegram	Jakarta								1	1	1
	L C	Jakarta										
	Total	Jakarta								3	4	4
		Medan										

Required Telegraph Type Circuits by Country and by Service

Country	Service	Gateway	84	85	86	87	88	89	90	94	99	2000
Jordan	Telex	Jakarta								3	3	3
		Medan										
	Telegram	Jakarta								1	1	1
	L C	Jakarta										
	Total	Jakarta								4	4	4
		Medan										
South Africa	Telex	Jakarta									3	3
		Medan										
	Telegram	Jakarta									1	1
	L C	Jakarta										
	Total	Jakarta									4	4
		Mcban										
Bahrain	Telex	Jakarta									2	3
		Mcdan										
	Telegram	Jakarta									1	1
	L C	Jakarta										
	Total	Jakarta									3	4
		Medan										
	Telex	Jakarta										
		Medan										
	Telegram	Jakarta										
	L C	Jakarta										
	Total	Jakarta										
		Medan										
	Telex	Jakarta										
		Medan										
	Telegram	Jakarta										
	L C	Jakarta										
	Total	Jakarta										
		Medan										

Allocation of VFT/TDM to Each Circuit in 1984, 1985

＊Existing circuit

Jakarta (1985)	VFT	2	Egypt, Ethiopia
		6	India, Jordan, Korea(R), Kuwait, Malaysia ＊, Iran
		6	New Zealand, Pakistan, Papua New Guinea, Saudi Arabia, Sri Lanka Thailand＊
		3	Philippines RCA,＊ ITT＊, ETPI＊
		6	U.A.E, Taiwan, Austria, Belgium, Denmark, Finland
		5	Greece, Hangary, Norway, Roumania, Spain
		4	Sweden, Turkey, Yugoslavia, Canada＊
		1	Hawaii
		4	Spare
		10	Total ＊6
	TDM＊	1	Australia
		5	Hong kong 3, Japan 2
		3	Singapore 3
		1	France
		4	Germany 2, Italy 1, Netherlands 1
		3	Switzerland 1, U.K 2
		4	U.S.A RCA 1, ITT 2. WUI 1
		2	Jakarta-Medan
		3	Spare
		24	Total
Medan (1984)	VFT or TDM	6	Hong kong, India, Japan, Malaysia, Thailand, Taiwan
		1	Singapore
		2	Jakarta-Medan
		1	Spare
		10	Total

Allocation of VFT/TDM to Each Circuit 1985 to 1989

		1985	1986	1987	1988	1989
Jakarta	VFT			Finland	USSR Brazil, Mexico, Hangary	
	TDM		Singapore	Japan	Singapore	
Medan	VFT	Italy France Germany Netherland SwitzerIand U. K Philippines -RCA	SaudiArabia	NewZealand	Philippines - ITT Philippines - ETPI Belgium	

Appendix 4・7・2—2

Leased Circuit Voice Grade

channels

Country	83	84	85	86	87	88	89	90	94	99	2000
Hong Kong	8	10	11	12	14	15	17	20	20	19	18
Malaysia	1	1	1	1	1	1	1	1	2	3	3
Singapore	4	6	8	9	10	12	13	15	24	37	37
U S A	4	5	6	6	7	7	7	7	8	10	11
United Kingdom	1	1	2	2	2	2	3	3	5	7	7
Japan			1	2	3	4	5	6	12	18	20
Philippines				1	1	2	2	2	4	6	7
West Germany				1	1	2	2	2	4	6	7
Australia					1	1	2	2	3	5	6
Voice Grade Total	18	23	29	34	40	46	52	58	82	111	116

Appendix 4 7 2 – 3(1)

Required Telephone Type Circuits by Country and by Service

Country	Service	Gateway Route	1984 P・S	1984 I・S	1984 I・S・C	1984 M・S・C	1984 M・P・C	1984 Total	1985 P・S	1985 I・S	1985 I・S・C	1985 M・S・C	1985 M・P・C	1985 M・C・C	1985 Total	1986 P・S	1986 I・S	1986 I・S・C	1986 M・S・C	1986 M・P・C	1986 M・C・C	1986 Total	1987 P・S	1987 I・S	1987 I・S・C	1987 M・S・C	1987 M・P・C	1987 M・C・C	1987 I・A・C	1987 Total
Egypt	Telephone	Jakarta								1	2				3		2	2				4		2	2				4
		Medan																											
	L C	Jakarta																											
	VFT	Jakarta								1					1		1					1		1						1
		Medan																											
	Packet	Jakarta																											
	Total	Jakarta								2	2				4		3	2				5		3	2					5
		Medan																											
Ethiopia	Telephone	Jakarta																											
		Medan																											
	L C	Jakarta																											
	VFT	Jakarta								1					1		1					1		1						1
		Medan																											
	Packet	Jakarta																											
	Total	Jakarta								1					1		1					1		1						1
		Medan																											
South Africa	Telephone	Jakarta																											
		Medan																											
	L C	Jakarta																											
	VFT	Jakarta																											
		Medan																											
	Packet	Jakarta																											
	Total	Jakarta																											
		Medan																											
Kenya	Telephone	Jakarta																											
		Medan																											
	L C	Jakarta																											
	VFT	Jakarta																											
		Medan																											
	Packet	Jakarta																											
	Total	Jakarta																											
		Medan																											
Nigeria	Tlephone	Jakarta																					3						3
		Medan																											
	L C	Jakarta																											
	VFT	Jakarta																											
		Medan																											
	Packet	Jakarta																											
	Total	Jakarta																					3						3
		Medan																											
Brunei	Telephone	Jakarta																					1	2					3
		Medan																							2				2
	L C	Jakarta																											
	VFT	Jakarta																											
		Medan																											
	Packet	Jakarta																											
	Total	Jakarta																					1	2					3
		Medan																							2				2

Country	Service	Gateway Route	1988 P・S	1988 I・S	1988 I・S・C	1988 M・S・C	1988 M・P・C	1988 M・C・C	1988 I・A・C	1988 Total	1989 P・S	1989 I・S	1989 I・S・C	1989 M・S・C	1989 M・P・C	1989 M・C・C	1989 I・A・C	1989 Total	1990 P・S	1990 I・S	1990 I・S・C	1990 M・S・C	1990 M・P・C	1990 M・C・C	1990 I・A・C	1990 Total	1991 P・S	1991 I・S	1991 I・S・C	1991 M・S・C	1991 M・P・C	1991 M・C・C	1991 I・A・C	1991 Total	2000 P・S	2000 I・S	2000 I・S・C	2000 M・S・C	2000 M・P・C	2000 M・C・C	2000 I・A・C	2000 Total
Egypt	Telephone	Jakarta		2	2					4		2	3					5		2	3					5		3	3					6		4	4					8
		Medan																																							
	L C	Jakarta																																						
	VFT	Jakarta		1						1		1						1		1						1		1						1		1						1
		Medan																																						
	Packet	Jakarta																																						
	Total	Jakarta		3	2					5		3	3					6		3	3					6		4	3					7		5	4					9
		Medan																																						
Ethiopia	Telephone	Jakarta																																						
		Medan																																						
	L C	Jakarta																																						
	VFT	Jakarta		1						1		1						1		1						1		1						1		1						1
		Medan																																						
	Packet	Jakarta																																						
	Total	Jakarta		1						1		1						1		1						1		1						1		1						1
		Medan																																						
South Africa	Telephone	Jakarta																																						
		Medan																																						
	L C	Jakarta																																						
	VFT	Jakarta																																						
		Medan																																						
	Packet	Jakarta																																						
	Total	Jakarta																																						
		Medan																																						
Kenya	Telephone	Jakarta		3								3	3							3	4					4		4						4		5						5
		Medan																																						
	L C	Jakarta																																						
	VFT	Jakarta																										1						1		1						1
		Medan																																						
	Packet	Jakarta																																						
	Total	Jakarta		3								3	3							3	4					4		5						5		6						6
		Medan																																						
Nigeria	Tlephone	Jakarta		4								4	1							4	4					4		5						5		7						7
		Medan																																						
	L C	Jakarta																																						
	VFT	Jakarta																																						
		Medan																																						
	Packet	Jakarta																																						
	Total	Jakarta		1								4	4							4	4					4		5						5		7						7
		Medan																																						
Brunei	Telephone	Jakarta		1	2							3	1	2						3	1	2				3		1	3					4		1	4					5
		Medan				2						2			2					2			2			2				2				2				2				2
	L C	Jakarta																																						
	VFT	Jakarta																																						
		Medan																																						
	Packet	Jakarta																																						
	Total	Jakarta		1	2							3	1	2						3	1	2				3		1	3					4		1	4					5
		Medan				2						2			2					2			2			2				2				2				2				2

Country	Service	Gataway Route	1984 P·S	I·S	I·S·C	M·S·C	M·P·C	Total	1985 P·S	I·S	I·S·C	M·S·C	M·P·C	M·C·C	Total	1986 P·S	I·S	I·S·C	M·S·C	M·P·C	M·C·C	Total	1987 P·S	I·S	I·S·C	M·S·C	M·P·C	M·C·C	I·A·C	Total
Burma	Telephone	Jakarta																											
		Medan																											
	LC	Jakarta																											
	VFT	Jakarta																											
		Medan																											
	Packet	Jakarta																											
	Total	Jakarta																											
		Medan																											
Fiji	Telephone	Jakarta																											
		Medan																											
	LC	Jakarta																											
	VFT	Jakarta																											
		Medan																											
	Packet	Jakarta																											
	Total	Jakarta																											
		Medan																											
Iraq	Telephone	Jakarta																											
		Medan																											
	LC	Jakarta																											
	VFT	Jakarta																											
		Medan																											
	Packet	Jakarta																											
	Total	Jakarta																											
		Medan																											
New Caledonia	Telephone	Jakarta																											
		Medan																											
	LC	Jakarta																											
	VFT	Jakarta																											
		Medan																											
	Packet	Jakarta																											
	Total	Jakarta																											
		Medan																											
Tanzania	Tlephone	Jakarta																											
		Medan																											
	LC	Jakarta																											
	VFT	Jakarta																											
		Medan																											
	Packet	Jakarta																											
	Total	Jakarta																											
		Medan																											
Argentina	Telephone	Jakarta																											
		Medan																											
	LC	Jakarta																											
	VFT	Jakarta																											
		Medan																											
	Packet	Jakarta																											
	Total	Jakarta																											
		Medan																											

Country	Service	Gataway Route	1988 P·S	I·S	I·S·C	M·S·C	M·P·C	M·C·C	I·A·C	Total	1989 P·S	I·S	I·S·C	M·S·C	M·P·C	M·C·C	I·A·C	Total	1990 P·S	I·S	I·S·C	M·S·C	M·P·C	M·C·C	I·A·C	Total	1994 P·S	I·S	I·S·C	M·S·C	M·P·C	M·C·C	I·A·C	Total	2000 P·S	I·S	I·S·C	M·S·C	M·P·C	M·C·C	I·A·C	Total
Burma	Telephone	Jakarta																										3						3		4					4
		Medan																																								
	LC	Jakarta																																								
	VFT	Jakarta																										3						3		4					4
		Medan																																								
	Packet	Jakarta																																								
	Total	Jakarta																										3						3		4					4
		Medan																																								
Fiji	Telephone	Jakarta																									3							3	4						4
		Medan																																								
	LC	Jakarta																																								
	VFT	Jakarta																										3						3	4						4
		Medan																																								
	Packet	Jakarta																																								
	Total	Jakarta																										3						3	4						4
		Medan																																								
Iraq	Telephone	Jakarta																									3							3		4					1
		Medan																																								
	LC	Jakarta																																								
	VFT	Jakarta																									3							3	4						4
		Medan																																								
	Packet	Jakarta																																								
	Total	Jakarta																									3							3	4						4
		Medan																																								
New Caledonia	Telephone	Jakarta																																	4							4
		Medan																																								
	LC	Jakarta																																								
	VFT	Jakarta																																								
		Medan																																								
	Packet	Jakarta																																								
	Total	Jakarta																																	4							4
		Medan																																								
Tanzania	Tlephone	Jakarta																																								
		Medan																																								
	LC	Jakarta																																								
	VFT	Jakarta																																								
		Medan																																								
	Packet	Jakarta																																								
	Total	Jakarta																																	4							4
		Medan																																								
Argentina	Telephone	Jakarta																																	5							5
		Medan																																								
	LC	Jakarta																																								
	VFT	Jakarta																																								
		Medan																																								
	Packet	Jakarta																																								
	Total	Jakarta																																	5							5
		Medan																																								

Country	Service	Gateway Route	1981 P・S	1981 I・S	1981 I・S・C	1981 M・S・C	1981 M・P・C	1981 Total	1985 P・S	1985 I・S	1985 I・S・C	1985 M・S・C	1985 M・P・C	1985 M・C・C	1985 Total	1986 P・S	1986 I・S	1986 I・S・C	1986 M・S・C	1986 M・P・C	1986 M・C・C	1986 Total	1987 P・S	1987 I・S	1987 I・S・C	1987 M・S・C	1987 M・P・C	1987 M・C・C	1987 I・A・C	1987 Total
Hong Kong	Telephone	Jakarta	13		37			50	11		13				57	18		19				67	21		58					79
		Medan				10		10				11			11				14			14				17				17
	L C	Jakarta	5		5			10	6		5				11	6		6				12	7		7					11
	VFT	Jakarta	1		2			(3)	1		2				(3)	1		2				(3)	1		2					(3)
		Medan				1		1				1			1				1			1				1					1
	Packet	Jakarta																												
	Total	Jakarta	19		44			63	21		50				71	25		57				82	29		67					96
		Medan				11		11				12			12				15			15				18					18
India	Telephone	Jakarta								9					9		11					11		12						12
		Medan											1		1					1		1					4				1
	L C	Jakarta																												
	VFT	Jakarta		1				1		1					1		1					1		1						1
		Medan					1	1					1		1					1		1					1				1
	Packet	Jakarta																												
	Total	Jakarta		1				1		10					10		12					12		13						13
		Medan					1	1					1		1					5		5					5				5
Japan	Telephone	Jakarta	17		17			91	57		56				113	79		77				156	96		91					190
		Medan				16		16				20			20				25			25				31					31
	L C	Jakarta							1						1	1		1				2	2		1					3
	VFT	Jakarta	1		1			(2)	1		1				(2)	1		1				(2)	1		2					(3)
		Medan				1		1				1			1				1			1				1					1
	Packet	Jakarta									1				1			1				1			1					1
	Total	Jakarta	18		18			96	59		58				117	81		80				161	99		98					197
		Medan				17		17				21			21				26			26				32					32
Kuwait	Telephone	Jakarta																												
		Medan																												
	L C	Jakarta																												
	VFT	Jakarta								1					1		1					1		1						1
		Medan																												
	Packet	Jakarta																												
	Total	Jakarta								1					1		1					1		1						1
		Medan																												
Malaysia	Tlephone	Jakarta	10		9			19	12		11				23	13		13				26	16		15					31
		Medan					5	5					6		6					7		7					8				8
	L C	Jakarta			1			1			1				1			1				1			1					1
	VFT	Jakarta	1					1	1						1	1						1	1							1
		Medan					1	1					1		1					1		1					1				1
	Packet	Jakarta																												
	Total	Jakarta	11		10			21	13		12				25	14		14				28	17		16					33
		Medan					6	6					7		7					8		8					9				9
New Zealand	Telephone	Jakarta							7						7	8						8	8							9
		Medan																									1				1
	L C	Jakarta																												
	VFT	Jakarta							1						1	1						1	1							1
		Medan																									1				1
	Packet	Jakarta																												
	Total	Jakarta							8						8	9						9	9							10
		Medan																									5				5

Country	Service	Gateway Route	1988 P・S	1988 I・S	1988 I・S・C	1988 M・S・C	1988 M・P・C	1988 M・C・C	1988 I・A・C	1988 Total	1989 P・S	1989 I・S	1989 I・S・C	1989 M・S・C	1989 M・P・C	1989 M・C・C	1989 I・A・C	1989 Total	1990 P・S	1990 I・S	1990 I・S・C	1990 M・S・C	1990 M・P・C	1990 M・C・C	1990 I・A・C	1990 Total	1991 P・S	1991 I・S	1991 I・S・C	1991 M・S・C	1991 M・P・C	1991 M・C・C	1991 I・A・C	1991 Total	2000 P・S	2000 I・S	2000 I・S・C	2000 M・S・C	2000 M・P・C	2000 M・C・C	2000 I・A・C	2000 Total
Hong Kong	Telephone	Jakarta	25		69					94	29		80					109	39		106					145	64		164					228	108		264					372
		Medan				21				21				25				25				30				30				48				48				86				86
	L C	Jakarta	8		7					15	9		8					17	10		10					20	10		10					20	9		9					18
	VFT	Jakarta	1		2					(3)	1		2					(3)	1		2					(3)	1		2					(3)	1		2					(3)
		Medan				1				1				1				1				1				1				1				1				1				1
	Packet	Jakarta																																								
	Total	Jakarta	34		78					112	39		90					129	50		118					168	75		176					251	118		255					393
		Medan				22				22				26				26				31				31				19				19				87				87
India	Telephone	Jakarta		14						14		15						15		17						17		24						24		35						35
		Medan					5			5					6			6					6			6					8			8					13			13
	L C	Jakarta																																								
	VFT	Jakarta		1						1		1						1		1						1		1						1		1						1
		Medan					1			1					1			1					1			1					1			1					1			1
	Packet	Jakarta																																							
	Total	Jakarta		15						15		16						16		18						18		25						25		36						36
		Medan				6				6				7				7				7				7				9				9				14				11
Japan	Telephone	Jakarta	116		113					229	138		136					274	162		159					321	253		252					505	411		411					822
		Medan				38				38				47				47				56				56				95				95				209				209
	L C	Jakarta	2		2					4	3		2					5	3		3					6	6		6					12	10		10					20
	VFT	Jakarta	1		2					(3)	1		2					(3)	1		2					(3)	2		2					(4)	2		2					(4)
		Medan				1				1				1				1				1				1				1				1				1				1
	Packet	Jakarta									1			1				1			1					1	1		1					2	1		1					2
	Total	Jakarta	119		118					237	142		141					283	166		165					331	262		261					523	424		424					848
		Medan				39				39				48				48				57				57				96				96				210				210
Kuwait	Telephone	Jakarta																																							
		Medan																																							
	L C	Jakarta																																							
	VFT	Jakarta		1						1		1						1		1						1		1						1		1						1
		Medan																																							
	Packet	Jakarta																																							
	Total	Jakarta		1						1		1						1		1						1		1						1		1						1
		Medan																																							
Malaysia	Tlephone	Jakarta	18		17					35	21		20					41	24		23					47	34		34					68	53		52					105
		Medan				10				10				11				11				13				13				20				20				33				33
	L C	Jakarta			1					1		1						1		1						1	1		1					2	1		2					3
	VFT	Jakarta	1							1	1							1	1							1	1							1	1							1
		Medan					1			1					1			1					1			1					1			1					1			1
	Packet	Jakarta																																							
	Total	Jakarta	19		18					37	22		21					43	25		24					49	36		35					71	55		54					109
		Medan				11				11				12				12				14				14				21				21				34				34
New Zealand	Telephone	Jakarta	8					3		11	8						4	12	8					5		13	9					10	19	14					14		28
		Medan				4				4				1				4				5				5				6				6				9				9
	L C	Jakarta																																							
	VFT	Jakarta								1	1							1								1	1							1	1							1
		Medan				1				1				1				1				1				1				1				1				1				1
	Packet	Jakarta																																							
	Total	Jakarta	9					3		12	9						4	13	9					5		14	10					10	20	15					14		29
		Medan				5				5				5				5				6				6				7				7				10				10

Country	Service	Gataway Route	1984 P·S	1984 I·S	1984 I·S·C	1984 M·S·C	1984 M·P·C	1984 Total	1985 P·S	1985 I·S	1985 I·S·C	1985 M·S·C	1985 M·P·C	1985 M·C·C	1985 Total	1986 P·S	1986 I·S	1986 I·S·C	1986 M·S·C	1986 M·P·C	1986 M·C·C	1986 Total	1987 P·S	1987 I·S	1987 I·S·C	1987 M·S·C	1987 M·P·C	1987 M·C·C	1987 I·A·C	1987 Total
Pakistan	Telephone	Jakarta								3					3		4					4		4					4
		Medan																											
	L C	Jakarta																											
	VFT	Jakarta								1					1		1					1		1						1
		Medan																											
	Packet	Jakarta																											
	Total	Jakarta								4					4		5					5		5						5
		Medan																											
Papua New Guinea	Telephone	Jakarta							4						4	4						4	5							5
		Medan																											
	L C	Jakarta																											
	VFT	Jakarta							1						1	1						1	1							1
		Medan																											
	Packet	Jakarta																											
	Total	Jakarta							5						5	5						5	6							6
		Medan																											
Phillippins (RCA)	Telephone	Jakarta		5	12			17		6	14				20		7	16				23		8	19					27
		Medan				5		5				5			5				6			6				7				7
	L C	Jakarta																											
	VFT	Jakarta			1			1			1				1			1				1			1					1
		Medan										1			1				1			1				1				1
	Packet	Jakarta																											
	Total	Jakarta		5	13			18		6	15				21		7	17				24		8	20					28
		Medan				5		5				6			6				7			7				8				8
" (ITT)	Telephone	Jakarta																											
		Medan																											
	L C	Jakarta															1					1		1						1
	VFT	Jakarta			1			1			1				1			1				1			1					1
		Medan																											
	Packet	Jakarta																											
	Total	Jakarta			1			1			1				1		1	1				2		1	1					2
		Medan																											
" (ETPI)	Tlephone	Jakarta																											
		Medan																											
	L C	Jakarta																											
	VFT	Jakarta			1			1			1				1			1				1			1					1
		Medan																											
	Packet	Jakarta																											
	Total	Jakarta			1			1			1				1			1				1			1					1
		Medan																											
R.Korea	Telephone	Jakarta	15					15	17						17	20						20	23							23
		Medan																											
	L C	Jakarta																											
	VFT	Jakarta									1				1	1						1	1							1
		Medan																											
	Packet	Jakarta																											
	Total	Jakarta	15					15	18						18	21						21	24							24
		Medan																											

Country	Service	Gataway Route	1988 P·S	1988 I·S	1988 I·S·C	1988 M·S·C	1988 M·P·C	1988 M·C·C	1988 I·A·C	1988 Total	1989 P·S	1989 I·S	1989 I·S·C	1989 M·S·C	1989 M·P·C	1989 M·C·C	1989 I·A·C	1989 Total	1990 P·S	1990 I·S	1990 I·S·C	1990 M·S·C	1990 M·P·C	1990 M·C·C	1990 I·A·C	1990 Total	1994 P·S	1994 I·S	1994 I·S·C	1994 M·S·C	1994 M·P·C	1994 M·C·C	1994 I·A·C	1994 Total	2000 P·S	2000 I·S	2000 I·S·C	2000 M·S·C	2000 M·P·C	2000 M·C·C	2000 I·A·C	2000 Total
Pakistan	Telephone	Jakarta		4						4		5						5		5						5		6						6		7						7
		Medan																																							
	L C	Jakarta																																					4		4
	VFT	Jakarta		1						1		1						1		1						1		1						1		1						1
		Medan																																					1		1
	Packet	Jakarta																																						
	Total	Jakarta		5						5		6						6		6						6		7						7		8						8
		Medan																																					5		5
Papua New Guinea	Telephone	Jakarta								5	6							6	6							6	8							8	11							11
		Medan																																						
	L C	Jakarta																																						
	VFT	Jakarta	1							1	1							1	1							1	1							1	1							1
		Medan																																						
	Packet	Jakarta																																						
	Total	Jakarta	6							6	7							7	7							7	9							9	12							12
		Medan																																						
Phillippins (RCA)	Telephone	Jakarta		9	22					31		10	25					35		12	28					40		17	42					59		26	63					89
		Medan				9				9				10				10				12				12				17				17				29				29
	L C	Jakarta		1						1		1						1		1						1		1						1		1	1					2
	VFT	Jakarta			1					1			1					1			1					1			1					1			1					1
		Medan				1				1				1				1				1				1				1				1				1				1
	Packet	Jakarta																																						
	Total	Jakarta	10	23						33		11	26					37		13	29					42		18	43					61		27	65					92
		Medan			10					10				11				11				13				13				18				18		.		30				30
" (ITT)	Telephone	Jakarta																																						
		Medan																																						
	L C	Jakarta																																						
	VFT	Jakarta		1						1		1						1		1						1		1	1					2		1	2					3
		Medan			1					1			1					1			1					1			1					1			1					1
	Packet	Jakarta				1				1				1				1				1				1				1				1				1				1
	Total	Jakarta		1						2		1	1					2		1	1					2		1	2					3		1	3					4
		Medan			1					1				1				1				1				1				1				1				1				1
" (ETPI)	Tlephone	Jakarta																																						
		Medan																																						
	L C	Jakarta																										1					1		1	1					2
	VFT	Jakarta		1						1		1						1		1						1		1						1		1						1
		Medan			1					1			1					1			1					1			1					1			1					1
	Packet	Jakarta																																						
	Total	Jakarta		1						1		1						1		1						1		1	1					2		1	2					3
		Medan			1					1			1					1			1					1			1					1			1					1
R.Korea	Telephone	Jakarta	27							27	32							32	36							36	54							54	84							84
		Medan																																						
	L C	Jakarta																																						
	VFT	Jakarta	1							1	1							1	1							①	1							①	1							①
		Medan																																						
	Packet	Jakarta																																						
	Total	Jakarta	28							28	33							33	37							37	55							55	85							85
		Medan																																						

Country	Service	Gateway Route	1984 P·S	1984 I·S	1984 I·S·C	1984 M·S·C	1984 M·P·C	1984 Total	1985 P·S	1985 I·S	1985 I·S·C	1985 M·S·C	1985 M·P·C	1985 M·C·C	1985 Total	1986 P·S	1986 I·S	1986 I·S·C	1986 M·S·C	1986 M·P·C	1986 M·C·C	1986 Total	1987 P·S	1987 I·S	1987 I·S·C	1987 M·S·C	1987 M·P·C	1987 M·C·C	1987 I·A·C	1987 Total
D.P.R korea	Telephone	Jakarta																											
		Medan																											
	L C	Jakarta																											
	VFT	Jakarta																											
		Medan																											
	Packet	Jakarta																											
	Total	Jakarta																											
		Medan																											
Iran	Telephone	Jakarta																											
		Medan																											
	L C	Jakarta																											
	VFT	Jakarta							1					1		1					1		1						1
		Medan																											
	Packet	Jakarta																											
	Total	Jakarta							1					1		1					1		1						1
		Medan																											
Jordan	Telephone	Jakarta																											
		Medan																											
	L C	Jakarta																											
	VFT	Jakarta																											
		Medan																											
	Packet	Jakarta																											
	Total	Jakarta																											
		Medan																											
Sri Lanka	Telephone	Jakarta							1	2			3			1	2				3		2	2					4
		Medan																											
	L C	Jakarta																											
	VFT	Jakarta								1			1				1				1			1					1
		Medan																											
	Packet	Jakarta																											
	Total	Jakarta							1	3			4			1	3				4		2	3					5
		Medan																											
Saudi Arabia	Telephone	Jakarta		14			14		8	7			15			9	8				17		10	9					19
		Medan										5	5						5	5						6			6
	L C	Jakarta																											
	VFT	Jakarta								1			1				1				1			1					1
		Medan																	1	1									1
	Packet	Jakarta																											
	Total	Jakarta		14			14		8	8			16			9	9				18		10	10					20
		Medan										5	5						6	6						7			7
Singapore	Telephone	Jakarta		68	162		230		84	199			283			102	213				315		123	296					419
		Medan				28	28				36		36					46			46				58				58
	L C	Jakarta		3	3		6		4	4			8			4	5				9		5	5					10
	VFT	Jakarta		1	2		③		1	2			③			2	2				④		2	2					④
		Medan				1	①				1		①					1			①				1				①
	Packet	Jakarta								1			1				1				1			1					1
	Total	Jakarta		72	167		239		89	206			295			108	251				359		130	304					434
		Medan				29	29				37		37					47			47				59				59

Country	Service	Gateway Route	1988 P·S	1988 I·S	1988 I·S·C	1988 M·S·C	1988 M·P·C	1988 M·C·C	1988 I·A·C	1988 Total	1989 P·S	1989 I·S	1989 I·S·C	1989 M·S·C	1989 M·P·C	1989 M·C·C	1989 I·A·C	1989 Total	1990 P·S	1990 I·S	1990 I·S·C	1990 M·S·C	1990 M·P·C	1990 M·C·C	1990 I·A·C	1990 Total	1991 P·S	1991 I·S	1991 I·S·C	1991 M·S·C	1991 M·P·C	1991 M·C·C	1991 I·A·C	1991 Total	2000 P·S	2000 I·S	2000 I·S·C	2000 M·S·C	2000 M·P·C	2000 M·C·C	2000 I·A·C	2000 Total
D.P.R korea	Telephone	Jakarta																									1							1	1						1
		Medan																									1							1	1						1
	L C	Jakarta																		3						3	4							4	5						5
	VFT	Jakarta									1							1	1							1	1							1	1,							1,
		Medan																																							
	Packet	Jakarta																																							
	Total	Jakarta									1							1	4							4	5							5	6							6
		Medan																																							
Jordan	Telephone	Jakarta																																							
		Medan																																							
	L C	Jakarta																																							
	VFT	Jakarta																									1							1	1						1
		Medan																																							
	Packet	Jakarta																									1							1	1						1
	Total	Jakarta																									1							1	1						1
		Medan																																							
Sri Lanka	Telephone	Jakarta	2	2					4		2	2				4		2	3					5		2	1					6		3	5					8
		Medan																																							
	L C	Jakarta																																							
	VFT	Jakarta		1					1			1				1			1					1			1					1			1						1
		Medan																																							
	Packet	Jakarta																									1							1	1						1
	Total	Jakarta	2	3					5		2	3				5		2	4					6		2	5					7		3	6					9
		Medan																																							
Saudi Arabia	Telephone	Jakarta	11	11					22		13	12				25		15	14					29		21	20					41		31	31					62
		Medan				7	7							8	8							9	9					13	13					21	21					21
	L C	Jakarta																																							
	VFT	Jakarta		1					1			1				1			1					1			1					1			1						1
		Medan				1	1							1	1							1	1					1	1					1	1					1
	Packet	Jakarta																																							
	Total	Jakarta	11	12					23		13	13				26		15	15					30		21	21					42		31	32					63
		Medan				8	8							9	9							10	10					14	14					22	22					22
Singapore	Telephone	Jakarta	119	356					505		179	425				601		209	498					707		329	785					1111		536	128					1814
		Medan			74				74				93			93				113				113				232					232			461				161
	L C	Jakarta	6	6					12		6	7				13		7	8					15		12	12					24		18	19					37
	VFT	Jakarta	2	3					③		2	3				⑤		2	3					⑤		2	3					⑥		1	1					⑥
		Medan			1				①				1			①				1				①				1				①				2				②
	Packet	Jakarta							1			1				1			1					1			1					1			1					1
	Total	Jakarta	157	366					523		187	436				623		218	510					728		311	801					1145		558	132					1860
		Medan			75				75				94			94				114				114				233					233			463				463

Country	Service	Gateway / Route	1984 P·S	1984 I·S	1984 I·S·C	1984 M·S·C	1984 M·P·C	1984 Total	1985 P·S	1985 I·S	1985 I·S·C	1985 M·S·C	1985 M·P·C	1985 M·C·C	1985 Total	1986 P·S	1986 I·S	1986 I·S·C	1986 M·S·C	1986 M·P·C	1986 M·C·C	1986 Total	1987 P·S	1987 I·C	1987 I·S·C	1987 M·S·C	1987 M·P·C	1987 M·C·C	1987 I·A·C	1987 Total
Taiwan	Telephone	Jakarta	16		16			32	19		19				38	22		22				14	26		26					52
		Medan				7		7				9			9				10			10				12				12
	L C	Jakarta																											
	VFT	Jakarta	1					1	1						1	1						1	1							1
		Medan				1		1				1			1				1			1				1				1
	Packet	Jakarta																											
	Total	Jakarta	17		16			33	20		19				39	23		22				45	27		26					53
		Medan				8		8				10			10				10			10				13				13
Thailand	Telephone	Jakarta	3		9			12	4		10				14	4		12				16	5		14					19
		Medan				4		4				4			4				5			5				6				6
	L C	Jakarta																											
	VFT	Jakarta	1					1	1						1	1						1	1							1
		Medan				1		1				1			1				1			1				1				1
	Packet	Jakarta																											
	Total	Jakarta	4		9			13	5		10				15	5		12				17	6		14					20
		Medan				5		5				5			5				6			6				7				7
U.A.E	Telephone	Jakarta							5						5		5					5		6						6
		Medan																												
	L C	Jakarta																											
	VFT	Jakarta							1						1		1					1		1						1
		Medan																												
	Packet	Jakarta																											
	Total	Jakarta							6						6		6					6		7						7
		Medan																												
Australia	Telephone	Jakarta	38					38	44						44	53						53	53							56
		Medan																												
	L C	Jakarta																											1	1
	VFT	Jakarta	1					①	1						①	1						①	1							①
		Medan																												
	Packet	Jakarta																											1	1
	Total	Jakarta	39					39	45						45	54						54	54							59
		Medan																												
Bahrain	Tlephone	Jakarta																												
		Medan																												
	L C	Jakarta																												
	VFT	Jakarta																												
		Medan																												
	Packet	Jakarta																												
	Total	Jakarta																												
		Medan																												
Canada	Telephone	Jakarta	14					14	17						17	19						19	22							22
		Medan																												
	L C	Jakarta																												
	VFT	Jakarta	1					1	1						1	1						1	1							1
		Medan																												
	Packet	Jakarta																												
	Total	Jakarta	15					15	18						18	20						20	23							23
		Medan																												

Country	Service	Gateway / Route	1988 P·S	1988 I·S	1988 I·S·C	1988 M·S·C	1988 M·P·C	1988 M·C·C	1988 I·A·C	1988 Total	1989 P·S	1989 I·S	1989 I·S·C	1989 M·S·C	1989 M·P·C	1989 M·C·C	1989 I·A·C	1989 Total	1990 P·S	1990 I·S	1990 I·S·C	1990 M·S·C	1990 M·P·C	1990 M·C·C	1990 I·A·C	1990 Total	1991 P·S	1991 I·S	1991 I·S·C	1991 M·S·C	1991 M·P·C	1991 M·C·C	1991 I·A·C	1991 Total	2000 P·S	2000 I·S	2000 I·S·C	2000 M·S·C	2000 M·P·C	2000 M·C·C	2000 I·A·C	2000 Total
Taiwan	Telephone	Jakarta	30		31					61	35		36					71	40		41					81	69		70					139	113		114					227
		Medan				15				15				17				17				20				20				32				32				56				56
	L C	Jakarta																																								
	VFT	Jakarta	1							1	1							1	1							1	1							1	1							1
		Medan				1				1				1				1				1				1				1				1				1				1
	Packet	Jakarta																																							
	Total	Jakarta	31		31					62	36		36					72	41		41					82	70		70					140	114		114					228
		Medan				16				16				18				18				21				21				33				33				57				57
Thailand	Telephone	Jakarta	6		15					21	7		17					24	7		20					27	11		28					39	17		42					59
		Medan				7				7				8				8				9				9				12				12				20				20
	L C	Jakarta																																							
	VFT	Jakarta	1							1	1							1	1							1	1							1	1							1
		Medan				1				1				1				1				1				1				1				1				1				1
	Packet	Jakarta																																							
	Total	Jakarta	7		15					22	8		17					25	8		20					28	12		28					40	18		42					60
		Medan				8				8				9				9				10				10				13				13				21				21
U.A.E	Telephone	Jakarta		6						6		7						7		8						8		9						9		13						13
		Medan														3		3							3	3						4		4						6		6
	L C	Jakarta																																							
	VFT	Jakarta		1						1		1						1		1						1		1						1		1						1
		Medan																																								1
	Packet	Jakarta																																							
	Total	Jakarta		7						7		8						8		9						9		10						10		14						14
		Medan														3		3							3	3						4		4						6		6
Australia	Telephone	Jakarta	53				13	66	53					24	77	53	76				35	88	76				75	151	123						123	246							
		Medan																																								
	L C	Jakarta					1	1	1					1	2	1					1	2	1				2	3	3						3	6							
	VFT	Jakarta	1					①	1						①	1						①	1				1	①	1						1	①							
		Medan																																								
	Packet	Jakarta					1	1						1	1						1	1					1	1							1	1							
	Total	Jakarta	54				15	69	55					26	81	55					34	91	78				79	157	127						128	255							
		Medan																																								
Bahrain	Tlephone	Jakarta		3				3		4					4		4					4		5				5		6					6							
		Medan																																								
	L C	Jakarta																																							
	VFT	Jakarta																													1				1							
		Medan																																								
	Packet	Jakarta																																							
	Total	Jakarta		3				3		4					4		4					4		5				5		7					7							
		Medan																																								
Canada	Telephone	Jakarta	26					26	30						30	31						34	51					51	79							79							
		Medan																																								
	L C	Jakarta																																							
	VFT	Jakarta	1					1	1						1	1						1	1					1	1							1							
		Medan																																								
	Packet	Jakarta																																							
	Total	Jakarta	27					27	31						31	35						35	52					52	80							80							
		Medan																																								

Country	Service	Gateway	Route	1981 P・S	1981 I・S	1981 I・S・C	1981 M・S・C	1981 M・P・C	1981 Total	1985 P・S	1985 I・S	1985 I・S・C	1985 M・S・C	1985 M・P・C	1985 M・C・C	1985 Total	1986 P・S	1986 I・S	1986 I・S・C	1986 M・S・C	1986 M・P・C	1986 M・C・C	1986 Total	1987 P・S	1987 I・S	1987 I・S・C	1987 M・S・C	1987 M・P・C	1987 M・C・C	1987 I・A・C	1987 Total
Hawaii	Telephone	Jakarta		8					8	9						9	10						10	11							11
		Medan																												
	L C	Jakarta																												
	VFT	Jakarta								1						1	1						1	1							1
		Medan																												
	Packet	Jakarta																												
	Total	Jakarta		8					8	10						10	11						11	12							12
		Medan																												
USA (ATT)	Telephone	Jakarta		50	25				75	60	31					91	73	36					109	100	51						151
		Medan																												
	L C	Jakarta																												
	VFT	Jakarta																												
		Medan																												
	Packet	Jakarta																												
	Total	Jakarta		50	25				75	60	31					91	73	36					109	100	51						151
		Medan																												
USA (RCA)	Telephone	Jakarta																												
		Medan																												
	L C	Jakarta		2					2	2						2	2						2	2							2
	VFT	Jakarta		1					①	1						①	1						①	1							①
		Medan																												
	Packet	Jakarta								1						1	1						1	1							1
	Total	Jakarta		3					3	4						4	4						4	4							4
		Medan																												
USA (ITT)	Telephone	Jakarta																												
		Medan																												
	L C	Jakarta		2					2	2						2	2						2	2	1						3
	VFT	Jakarta		2					②	2						②	2						②	2							②
		Medan																												
	Packet	Jakarta								1						1	1						1	1							1
	Total	Jakarta		4					4	5						5	5						5	5	1						6
		Medan																												
USA (WUI)	Tlephone	Jakarta																												
		Medan																												
	L C	Jakarta		1					1	1	1					2	1	1					2	1	1						2
	VFT	Jakarta		1					①	1						①	1						①	1							①
		Medan																												
	Packet	Jakarta								1						1	1						1	1							1
	Total	Jakarta		2					2	3	1					4	3	1					4	3	1						4
		Medan																												
Brazil	Telephone	Jakarta																												
		Medan																												
	L C	Jakarta																												
	VFT	Jakarta																												
		Medan																												
	Packet	Jakarta																												
	Total	Jakarta																												
		Medan																												

1988 P・S	1988 I・S	1988 I・S・C	1988 M・S・C	1988 M・P・C	1988 M・C・C	1988 I・A・C	1988 Total	1989 P・S	1989 I・S	1989 I・S・C	1989 M・S・C	1989 M・P・C	1989 M・C・C	1989 I・A・C	1989 Total	1990 P・S	1990 I・S	1990 I・S・C	1990 M・S・C	1990 M・P・C	1990 M・C・C	1990 I・A・C	1990 Total	1991 P・S	1991 I・S	1991 I・S・C	1991 M・S・C	1991 M・P・C	1991 M・C・C	1991 I・A・C	1991 Total	2000 P・S	2000 I・S	2000 I・S・C	2000 M・S・C	2000 M・P・C	2000 M・C・C	2000 I・A・C	2000 Total
13							13	15							15	17							17	23							23	35							35
1							1	1							1	1							1	1							1	1							1
14							14	16							16	18							18	24							24	36							36
123	61						184	148	74						222	175	87						262	282	141						423	476	238						714
123	61						184	148	74						222	175	87						262	282	141						423	476	238						714
2							2	2							2	2							2	2	1						3	2	2						4
1							①	1							①	1							①	1							①	1							①
1							1	1							1	1							1	1							1	1							1
4							1	4							4	4							4	4	1						5	4	2						6
2	1						3	2	1						3	2	1						3	2	1						3	2	2						4
2							②	2							②	2							②	2	1						⑤	2	1						③
1							1	1							1	1							1	1							1	1							1
5	1						6	5	1						6	5	1						6	5	2						7	5	3						8
1	1						2	1	1						2	1	1						2	1	1						2	2	1						3
1							①	1							①	1							①	1	1						②	1	1						④
1							1	1							1	1							1	1							1	1							1
3	1						4	3	1						4	3	1						4	3	2						5	3	2						5
	5						5		5						5		5						5		7						7		9						9
	1						1		1						1		1						1		1						1		1						1
	6						6		6						6		6						6		8						8		10						10

Country	Service	Gateway	Route	1984 P·S	1984 I·S	1984 I·S·C	1984 M·S·C	1984 M·P·C	1984 Total	1985 P·S	1985 I·S	1985 I·S·C	1985 M·S·C	1985 M·P·C	1985 M·C·C	1985 Total	1986 P·S	1986 I·S	1986 I·S·C	1986 M·S·C	1986 M·P·C	1986 M·C·C	1986 Total	1987 P·S	1987 I·S	1987 I·S·C	1987 M·S·C	1987 M·P·C	1987 M·C·C	1987 I·A·C	1987 Total
Mexico	Telephone	Jakarta																												
		Medan																												
	L C	Jakarta																												
	VFT	Jakarta																												
		Medan																												
	Packet	Jakarta																												
	Total	Jakarta																												
		Medan																												
Austria	Telephone	Jakarta								5	1				6		6	1				7		6	1					7
		Medan																												
	L C	Jakarta																												
	VFT	Jakarta		1				1		1					1		1					1		1						1
		Medan																												
	Packet	Jakarta																												
	Total	Jakarta		1				1		6	1				7		7	1				8		7	1					8
		Medan																												
Belgium	Telephone	Jakarta		9				9		9	1				10		10	1				11		12	1					13
		Medan																												
	L C	Jakarta									1				1			1				1								
	VFT	Jakarta																							1					1
		Medan																												
	Packet	Jakarta																												
	Total	Jakarta		9				9		9	2				11		10	2				12		12	2					14
		Medan																												
Denmark	Telephone	Jakarta								6	1				7		6	1				7		7	1					8
		Medan																												
	L C	Jakarta																												
	VFT	Jakarta									1				1			1				1			1					1
		Medan																												
	Packet	Jakarta																												
	Total	Jakarta								6	2				8		6	2				8		7	2					9
		Medan																												
Greece	Tlephone	Jakarta								5	1				6		6	1				7		7	1					8
		Medan																												
	L C	Jakarta																												
	VFT	Jakarta									1				1			1				1			1					1
		Medan																												
	Packet	Jakarta																												
	Total	Jakarta								5	2				7		6	2				8		7	2					9
		Medan																												
Italy	Telephone	Jakarta		20				20		20	1				21		21	3				24		25	3					28
		Medan												6	6						7	7							8	8
	L C	Jakarta																												
	VFT	Jakarta		1				①		1					①		1					①		1						①
		Medan												1	1						1	1							1	1
	Packet	Jakarta																												
	Total	Jakarta		21				21		21	1				22		22	3				25		26	3					29
		Medan												7	12						8	8							9	9

Country	Service	Gateway	Route	1988 P·S	1988 I·S	1988 I·S·C	1988 M·S·C	1988 M·P·C	1988 M·C·C	1988 I·A·C	1988 Total	1989 P·S	1989 I·S	1989 I·S·C	1989 M·S·C	1989 M·P·C	1989 M·C·C	1989 I·A·C	1989 Total	1990 P·S	1990 I·S	1990 I·S·C	1990 M·S·C	1990 M·P·C	1990 M·C·C	1990 I·A·C	1990 Total	1994 P·S	1994 I·S	1994 I·S·C	1994 M·S·C	1994 M·P·C	1994 M·C·C	1994 I·A·C	1994 Total	2000 P·S	2000 I·S	2000 I·S·C	2000 M·S·C	2000 M·P·C	2000 M·C·C	2000 I·A·C	2000 Total
Mexico	Telephone	Jakarta										5							5	5							5	6						6	9							9
		Medan																																									
	L C	Jakarta																																								
	VFT	Jakarta								1	1								1	1							1	1						1	1							1
		Medan																																								
	Packet	Jakarta																																								
	Total	Jakarta								1	1	6							6	6							6	7						7	10							10
		Medan																																								
Austria	Telephone	Jakarta		7	1						8		8	1					9		9	1					10		11	1				12		15	2				17
		Medan																																								
	L C	Jakarta																																								
	VFT	Jakarta		1						1			1						1		1						1		1					1		1						1
		Medan																																						1		1
	Packet	Jakarta																																								
	Total	Jakarta		8	1						9		9	1					10		10	1					11		12	1				13		16	2				19
		Medan																																						1		
Belgium	Telephone	Jakarta		12	2						14		13	2					15		15	2					17		21	3				24		30	4				34
		Medan							5		5						5		5					6			6					8		8					13		13
	L C	Jakarta																																								
	VFT	Jakarta			1						1			1					1			1					1			1				1			1					1
		Medan							1		1						1		1					1			1					1		1					1		1
	Packet	Jakarta																																								
	Total	Jakarta		12	3						15		13	3					16		15	3					18		21	4				25		30	5				35
		Medan							6		6						6		6					7			7					9		9					14		14
Denmark	Telephone	Jakarta		8	1						9		9	1					10		11	1					12		13	1				14		19	1				20
		Medan																																								
	L C	Jakarta																																								
	VFT	Jakarta			1						1			1					1			1					1			1				1			1					1
		Medan																																								
	Packet	Jakarta																																								
	Total	Jakarta			8	2					10		9	2					11		11	2					13		13	2				15		19	2				21
		Medan																																								
Greece	Tlephone	Jakarta			8	1					9		9	1					10		10	1					11		12	1				13		17	1				18
		Medan																																								
	L C	Jakarta																																								
	VFT	Jakarta			1						1			1					1			1					1			1				1			1					1
		Medan																														1		1					1		1
	Packet	Jakarta																																								
	Total	Jakarta			8	2					10		9	2					11		10	2					12		12	2				14		17	2				19
		Medan																														1		1					1		1
Italy	Telephone	Jakarta			29	3					32		33	4					37		38	5					43		55	6				61		81	9				93
		Medan							9		9						10		10					12			12					18		18					30		30
	L C	Jakarta																																								
	VFT	Jakarta			1						①		1						①		1						①		1	1				③		1	1				④
		Medan							1		1						1		1					1			1					1		1					1		1
	Packet	Jakarta																																								
	Total	Jakarta			30	3					33		34	4					38		39	5					44		54	7				63		85	10				95
		Medan							10		10						11		11					13			13					19		19					31		31

Country	Service	Gateway	Route	1984 P·S	1984 I·S	1984 I·S·C	1984 M·S·C	1984 M·P·C	1984 Total	1985 P·S	1985 I·S	1985 I·S·C	1985 M·S·C	1985 M·P·C	1985 M·C·C	1985 Total	1986 P·S	1986 I·S	1986 I·S·C	1986 M·S·C	1986 M·P·C	1986 M·C·C	1986 Total	1987 P·S	1987 I·S	1987 I·S·C	1987 M·S·C	1987 M·P·C	1987 M·C·C	1987 I·A·C	1987 Total
Germany	Telephone	Jakarta			36				36		36	3				39		42	4				46	50	4					54
		Medan													9	9						10	10						12		12
	L C	Jakarta																	1				1		1						1
	VFT	Jakarta		2					②		2					②		2					②		2						④
		Medan													1	1						1	1						1		1
	Packet	Jakarta																								1					1
	Total	Jakarta		38					38		38	3				41		44	5				49	52	6					58
		Medan													10	10						11	11						13		13
France	Telephone	Jakarta		32					32		32	2				34		36	4				40	43	4					47
		Medan													8	8						9	9						11		11
	L C	Jakarta																													
	VFT	Jakarta		1					①		1					①		1					①		1						①
		Medan													1	1						1	1						1		1
	Packet	Jakarta																								1					1
	Total	Jakarta		33					33		33	2				35		37	4				41	44	5					49
		Medan													9	9						10	10						12		12
Nether-lands	Telephone	Jakarta		40					40		43	5				48		50	6				56	59	7					66
		Medan													10	10						12	12						15		15
	L C	Jakarta																													
	VFT	Jakarta		1					①		1					①		1					①		1						①
		Medan													1	1						1	1						1		1
	Packet	Jakarta																													
	Total	Jakarta		41					41		44	5				49		51	6				57	60	7					67
		Medan													11	11						13	13						16		16
Norway	Telephone	Jakarta		8					8		6					6		6	1				7		7	1					8
		Medan																													
	L C	Jakarta																													
	VFT	Jakarta									1					1		1					1		1						1
		Medan																													
	Packet	Jakarta																													
	Total	Jakarta		8					8		7					7		7	1				8		8	1					9
		Medan																													
Spain	Tlephone	Jakarta		8					8		9	1				10		10	1				11		11	1					12
		Medan																													
	L C	Jakarta																													
	VFT	Jakarta		1					1		1					1		1					1		1						1
		Medan																													
	Packet	Jakarta																													
	Total	Jakarta		9					9		10	1				11		11	1				12		12	1					13
		Medan																													
Sweden	Telephone	Jakarta									6	1				7		7	1				8		8	1					9
		Medan																													
	L C	Jakarta																													
	VFT	Jakarta									1					1		1					1		1						1
		Medan																													
	Packet	Jakarta																													
	Total	Jakarta									7	1				8		8	1				9		9	1					10
		Medan																													

Country	Service	Gateway	Route	1988 P·S	1988 I·S	1988 I·S·C	1988 M·S·C	1988 M·P·C	1988 M·C·C	1988 I·A·C	1988 Total	1989 P·S	1989 I·S	1989 I·S·C	1989 M·S·C	1989 M·P·C	1989 M·C·C	1989 I·A·C	1989 Total	1990 P·S	1990 I·S	1990 I·S·C	1990 M·S·C	1990 M·P·C	1990 M·C·C	1990 I·A·C	1990 Total	1994 P·S	1994 I·S	1994 I·S·C	1994 M·S·C	1994 M·P·C	1994 M·C·C	1994 I·A·C	1994 Total	2000 P·S	2000 I·S	2000 I·S·C	2000 M·S·C	2000 M·P·C	2000 M·C·C	2000 I·A·C	2000 Total
Germany	Telephone	Jakarta			58	5					63		68	6					74		78	7					85		132	13				145		216	21					237
		Medan							15		15						19		19						21		21						33		33						58		58
	L C	Jakarta		1	1						2		1	1					2		1	1					2		2	2				4		4	3					7
	VFT	Jakarta		2							③		2						③		2						④		2					②		2	1					③
		Medan							1		1						1		1						1		1						1		1						1		1
	Packet	Jakarta				1					1			1					1			1					1			1				1			1					1
	Total	Jakarta		61	7						68		71	8					79		81	9					90		136	16				152		222	26					248
		Medan							16		16						20		20						22		22						31		34						59		59
France	Telephone	Jakarta		50	5						55		58	6					64		67	7					74		101	9				110		183	19					202
		Medan							14		14						16		16						19		19						29		29						51		51
	L C	Jakarta																																									
	VFT	Jakarta		1							①		1						①		1						①		1	1				②		1	1					②
		Medan				1					1						1		1						1		1						1		1						1		1
	Packet	Jakarta			1						1			1					1			1					1			1				1			1					1
	Total	Jakarta		51	6						57		59	7					66		68	8					76		102	11				113		184	21					205
		Medan							15		15						17		17						20		20						30		30						52		52
Nether-lands	Telephone	Jakarta		70	8						78		81	9					90		93	11					104		166	18				184		269	29					298
		Medan							18		18						21		21						25		25						40		40						71		71
	L C	Jakarta																																								
	VFT	Jakarta		1							①		1						①		1						①		1	1				③		1	1					③
		Medan				1					1						1		1						1		1						1		1						1		1
	Packet	Jakarta																																								
	Total	Jakarta		71	8						79		82	9					91		94	11					105		167	19				186		270	30					300
		Medan				19			19							22		22						26		26						41		11						72		72
Norway	Telephone	Jakarta		8	1						9		8	1					9		9	1					10		12	1				13		15	2					17
		Medan																																								
	L C	Jakarta																																								
	VFT	Jakarta		1					1		1		1						1		1						1		1					1		1						1
		Medan																																								
	Packet	Jakarta																																								
	Total	Jakarta		9	1						10		9	1					10		10	1					11		13	1				14		16	2					18
		Medan																																								
Spain	Tlephone	Jakarta		12	1						13		12	2					14		14	2					16		20	2				22		29	3					32
		Medan				5			5							5		5						6		6						8		8						12		12
	L C	Jakarta																																								
	VFT	Jakarta		1					1		1		1						1		1						1		1					1		1						1
		Medan																																								
	Packet	Jakarta																																								
	Total	Jakarta		13	1						14		13	2					15		15	2					17		21	2				23		30	3					33
		Medan				5			5							5		5						6		6						8		8						13		13
Sweden	Telephone	Jakarta		9	1						10		10	1					11		11	1					12		12	2				14		18	2					20
		Medan																																6		6						8		8
	L C	Jakarta																																								
	VFT	Jakarta		1					1		1		1						1		1						1		1					1		1						1		1
		Medan																																1		1						1		1
	Packet	Jakarta																																								
	Total	Jakarta		10	1						11		11	1					12		12	1					13		13	2				15		19	2					21
		Medan																																7		7						9		9

Country	Service	Gateway Route	1984						1985							1986							1987						
			P・S	I・S	I・S・C	M・S・C	M・P・C	Total	P・S	I・S	I・S・C	M・S・C	M・P・C	M・C・C	Total	P・S	I・S	I・S・C	M・S・C	M・P・C	M・C・C	Total	P・S	I・S	I・S・C	M・S・C	M・P・C	M・C・C	I・A・C	Total
Switzerland	Telephone	Jakarta		10				10		10	1				11		12	1				13		12	1					13
		Medan																										5		5
	LC	Jakarta																												
	VFT	Jakarta		1				①		1					①		1					①		1						①
		Medan												1	1						1	1						1		1
	Packet	Jakarta																												
	Total	Jakarta		11				11		11	1				12		13	1				14		13	1					14
		Medan												1	1						1	1						6		6
Finland	Telephone	Jakarta																												
		Medan																												
	LC	Jakarta																												
	VFT	Jakarta																						1						1
		Medan																												
	Packet	Jakarta																												
	Total	Jakarta																						1						1
		Medan																												
Hungary	Telephone	Jakarta																												
		Medan																												
	LC	Jakarta																												
	VFT	Jakarta																												
		Medan																												
	Packet	Jakarta																												
	Total	Jakarta																												
		Medan																												
Roumania	Telephone	Jakarta																												
		Medan																												
	LC	Jakarta																												
	VFT	Jakarta								1				1	1		1					1		1						1
		Medan																												
	Packet	Jakarta																												
	Total	Jakarta								1				1	1		1					1		1						1
		Medan																												
Turkey	Telephone	Jakarta																												
		Medan																												
	LC	Jakarta																												
	VFT	Jakarta								1				1	1		1					1		1						1
		Medan																												
	Packet	Jakarta																												
	Total	Jakarta								1				1	1		1					1		1						1
		Medan																												
USSR	Telephone	Jakarta																												
		Medan																												
	LC	Jakarta																												
	VFT	Jakarta																												
		Medan																												
	Packet	Jakarta																												
	Total	Jakarta																												
		Medan																												

Country	Service	Gateway Route	1988							1989							1990							1994							2000						
			P・S	I・S	I・S・C	M・S・C	M・P・C	M・C・C	Total	P・S	I・S	I・S・C	M・S・C	M・P・C	M・C・C	Total	P・S	I・S	I・S・C	M・S・C	M・P・C	M・C・C	I・A・C	Total	P・S	I・S	I・S・C	M・S・C	M・P・C	M・C・C	I・A・C	Total	P・S	I・S	I・S・C	M・S・C	M・P・C	M・C・C	I・A・C	Total
Switzerland	Telephone	Jakarta		13	2				15		15	2				17		17	2					19		25	2					27		36	3					39
		Medan						5	5						6	6						7		7						9	9						14		14
	LC	Jakarta																																						
	VFT	Jakarta		1					①		1					①		1						①		1	1					②		1	1					②
		Medan						1	1						1	1						1		1						1	1						1		1
	Packet	Jakarta																																						
	Total	Jakarta		14	2				16		16	2				18		19	2					21		26	3					29		37	4					41
		Medan						6	6						7	7						8		8						10	10						15		15
Finland	Telephone	Jakarta									4	1				5		4	1					5		5	1					6		7	1					8
		Medan																																						
	LC	Jakarta																																						
	VFT	Jakarta		1					1		1					1		1						1		1						1		1						1
		Medan																																						
	Packet	Jakarta																																						
	Total	Jakarta		1					1		5	1				6		5	1					6		6	1					7		8	1					9
		Medan																																5						5
Roumania	Telephone	Jakarta																																						
		Medan																																						
	LC	Jakarta																																						
	VFT	Jakarta		1					1		1					1		1						1		1						1		1						1
		Medan																																						
	Packet	Jakarta																																						
	Total	Jakarta		1					1		1					1		1						1		1						1		1						1
		Medan																																						
Turkey	Telephone	Jakarta																																5						5
		Medan																																						
	LC	Jakarta																																						
	VFT	Jakarta		1					1		1					1		1						1		1						1		1						1
		Medan																																						
	Packet	Jakarta																																						
	Total	Jakarta		1					1		1					1		1						1		1						1		1						1
		Medan																																6						6
USSR	Telephone	Jakarta																																						
		Medan																																						
	LC	Jakarta																																						
	VFT	Jakarta		1					1		1					1		1						1		1						1		1						1
		Medan																																						
	Packet	Jakarta																																						
	Total	Jakarta		1					1		1					1		1						1		1						1		1						1
		Medan																																5						5

Country	Service	Gataway Route	1981 P·S	1981 I·S	1981 I·S·C	1981 M·S·C	1981 M·P·C	1981 Total	1985 P·S	1985 I·S	1985 I·S·C	1985 M·S·C	1985 M·P·C	1985 M·C·C	1985 Total	1986 P·S	1986 I·S	1986 I·S·C	1986 M·S·C	1986 M·P·C	1986 M·C·C	1986 Total	1987 P·S	1987 I·S	1987 I·S·C	1987 M·S·C	1987 M·P·C	1987 M·C·C	1987 I·A·C	1987 Total
Yugoslavia	Telephone	Jakarta																					4					4
		Medan																											
	L C	Jakarta																											
	VFT	Jakarta								1					1		1					1		1						1
		Medan																											
	Packet	Jakarta																											
	Total	Jakarta								1					1		1					1		5						5
		Medan																											
United Kingdom	Telephone	Jakarta		13				43		43	4				47		50	5				55		60	5					65
		Medan												11	11						12	12						14		14
	L C	Jakarta		1				1		1	1				2		1	1				2		1	1					2
	VFT	Jakarta		2				②		2					②		2					②		2						②
		Medan												1	1						1	1						1		1
	Packet	Jakarta									1				1			1				1			1					1
	Total	Jakarta		16				46		46	6				52		53	7				60		63	7					70
		Medan												12	12						13	13						15		15
Grand Total	Telephone	Jakarta																											
		Medan																											
	L C	Jakarta																											
	VFT	Jakarta																											
		Medan																											
	Packet	Jakarta																											
	Total	Jakarta	235	333	309	–	–	877	294	407	412	–	–	–	1,113	335	470	457	–	–	–	1,262	418	567	603	–	–	–	6	1,594
		Medan	–	–	–	75	7	82	–	–	–	91	11	55	162	–	–	–	111	13	62	186	–	–	–	144	14	78	–	236
	Telephone	Jakarta																											
		Medan																											
	L C	Jakarta																											
	VFT	Jakarta																											
		Medan																											
	Packet	Jakarta																											
	Total	Jakarta																											
		Medan																											
	Tlephone	Jakarta																											
		Medan																											
	L C	Jakarta																											
	VFT	Jakarta																											
		Medan																											
	Packet	Jakarta																											
	Total	Jakarta																											
		Medan																											
	Telephone	Jakarta																											
		Medan																											
	L C	Jakarta																											
	VFT	Jakarta																											
		Medan																											
	Packet	Jakarta																											
	Total	Jakarta																											
		Medan																											

Country	Service	Gataway Route	1988 P·S	1988 I·S	1988 I·S·C	1988 M·S·C	1988 M·P·C	1988 M·C·C	1988 I·A·C	1988 Total	1989 P·S	1989 I·S	1989 I·S·C	1989 M·S·C	1989 M·P·C	1989 M·C·C	1989 I·A·C	1989 Total	1990 P·S	1990 I·S	1990 I·S·C	1990 M·S·C	1990 M·P·C	1990 M·C·C	1990 I·A·C	1990 Total	1994 P·S	1994 I·S	1994 I·S·C	1994 M·S·C	1994 M·P·C	1994 M·C·C	1994 I·A·C	1994 Total	2000 P·S	2000 I·S	2000 I·S·C	2000 M·S·C	2000 M·P·C	2000 M·C·C	2000 I·A·C	2000 Total
Yugoslavia	Telephone	Jakarta		4						4		4						4		4						4		5						5		7						7
		Medan																																								
	L C	Jakarta																																							
	VFT	Jakarta		1						1		1						1		1						1		1						1		1						1
		Medan																																								
	Packet	Jakarta																																							
	Total	Jakarta		5						5		5						5		5						5		6						6		8						8
		Medan																																								
United Kingdom	Telephone	Jakarta		70	6					76		82	6					88		94	8					102		164	11					178		267	24					291
		Medan						17		17						22		22						25		25						39		39						70		70
	L C	Jakarta		1	1					2		1	2					3		1	2					3		2	3					5		3	4					7
	VFT	Jakarta		2						②		2						②		·2						②		2	1					③		2	1					③
		Medan						1		1						1		1						1		①						1		①						1		①
	Packet	Jakarta			1					1			1					1			1					1			1					1			1					1
	Total	Jakarta		73	8					81		85	9					94		97	11					108		168	19					187		272	30					302
		Medan						18		18						23		23						26		26						40		40						71		71
Grand Total	Telephone	Jakarta																																							
		Medan																																							
	L C	Jakarta																																							
	VFT	Jakarta																																							
		Medan																																							
	Packet	Jakarta																																							
	Total	Jakarta	484	672	715	–	–	–	18	1,889	564	778	842	–	–	–	30	2,214	644	894	992	–	–	–	41	2,571	991	1,390	1,538	–	–	–	89	4,012	1,590	2,282	2,467	–	–	–	142	6,438
		Medan	–	–	–	179	17	103	–	299	–	–	–	215	19	123	–	357	–	–	–	256	21	141	–	418	–	–	–	453	30	217	–	700	–	–	–	882	48	371	–	1,301
	Telephone	Jakarta																																							
		Medan																																							
	L C	Jakarta																																							
	VFT	Jakarta																																							
		Medan																																							
	Packet	Jakarta																																							
	Total	Jakarta																																							
		Medan																																							
	Tlephone	Jakarta																																							
		Medan																																							
	L C	Jakarta																																							
	VFT	Jakarta																																							
		Medan																																							
	Packet	Jakarta																																							
	Total	Jakarta																																							
		Medan																																							
	Telephone	Jakarta																																							
		Medan																																							
	L C	Jakarta																																							
	VFT	Jakarta																																							
		Medan																																							
	Packet	Jakarta																																							
	Total	Jakarta																																							
		Medan																																							

Circuit Usage Ratio by Transmission Route

Appendix 4・7・2－4(1)

Country	Usage Ratio			Remarks
	Satellite	Cable		
Egypt	I S	ISC		by' 86 I S 100%
	50	50		
Ethiopia	I S			
	100			
Nigeria	I S			
	100			
South Africa	I S			
	100			
Tanzania	I S			
	100			
Argemtina	I S			
	100			
Brazil	I S			
	100			
Mexico	P S			
	100			
Brunei	I S	ISC	MSC	
	30	70		
Burma	I S			
	100			
Fiji	P S			
	100			
Iraq	I S			
	100			
Hong Kong	P S	ISC	MSC*	*Medan
	30	70		
India	I S	ISC	MPC*	by' 86 I S 100%
	50	50		
Japan	P S	ISC		
	50	50		
Kuwait	I S			
	100			

Circuit Usage Ratio by Transmission Route

Appendix 4・7・2－4(2)

Country	Usage Ratio			Remarks
	Satellite	Cable		
Malaysia	P S	I S C	M P C*	
	30	70		
New Zealand	P S	I A C		by '86 P S 100%
	2/3	1/3		
Pakistan	I S			
	100			
Papna New Guinea	P S			
	100			
Philiphines RCA	I S	I S C	M S C*	
	30	70		
〃 ITT	I S	I S C	M S C*	
	30	70		
〃 ETPI	I S	I S C	M S C*	
	30	70		
Korea R.	P S			
	100			
Sri Lanka	I S	I S C		by '87 I S : 100
	30	70		
Saudi Arabia	I S	I S C	M C C*	
	50	50		
Singapore	I S	I S C	M S C*	
	30	70		
Taiwan	P S	I S C	M S C*	
	50	50		
Thailand	P S	I S C	M S C*	
	30	70		
U. A. E.	I S			
	100			
Australia	P S	I A C		by '87 P S : 100
	50	50		
Bahrain	I S	I S C		
	50	50		

Circuit Usage Ratio by Transmission Route

Appendix 4・7・2－4(3)

Country	Usage Ratio				Remarks
	Satellite		Cable		
Korea DPR.	PS				
	100				
Iran	IS				
	100				
Jordan	IS				
	100				
Canada	PS				
	100				
Hawaii	PS				
	100				
USA ATT	PS	IS			
	2/3	1/3			
〃 RCA	PS	IS			
	2/3	1/3			
〃 ITT	PS	IS			
	2/3	1/3			
〃 WUI	PS	IS			
	2/3	1/3			
Austria	IS		ISC		by '87 IS: 100
	90		10		
Belgium	IS		ISC		〃
	90		10		
Denmark	IS		ISC		〃
	90		10		
Greece	IS		ISC		〃
	90		10		
Italy	IS		ISC	MCC*	〃
	90		10		
Germany	IS		ISC	MCC*	〃
	90		10		
France	IS		ISC	MCC*	〃
	90		10		

Circuit Usage Ratio by Transmission Route

Appendix 4・7・2－4(4)

Country	Usage Ratio			Remarks
	Satellite	Cable		
Netherlands	I S	ISC	MCC*	by' 87 I S : 100
	90	10		
Norway	I S	ISC		〃
	90	10		
Spain	I S	ISC		〃
	90	10		
Sweden	I S	ISC		〃
	90	10		
Switzerland	I S	ISC		〃
	90	10		
Czechoslovakia	I S	ISC		〃
	90	10		
Finland	I S			
	100			
Hungary	I S			
	100			
Roumania	I S			
	100			
Turkey	I S			
	100			
USSR	I S			
	100			
Yugoslavia	I S			
	100			
U. K	I S	ISC	MCC*	by' 87 I S : 100
	90	10		

*) : I S : Indian Satellite
P S : Pacific Satellite
I S C : Indonesia -Singapore Cable
M C C : Medan -Colombo Cable
I A C : Indonesia -Australia Cable
M S A : Medan -Singapore Cable
M P C : Medan -Penang Cable

Transit Requirement for Medan-Singapore-Jakarta Cable

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	Year	1984	1985	1986	1987	1988	1989	1990	1994	2000
Medan	Australia	-	-	-	14	16	20	23	35	61
	New Zealand	-	-	-	5	5	5	6	7	10
	Total	-	-	-	19	21	25	29	42	71
Jakarta	Egypt	-	2	2	2	2	3	3	3	4
	Sri Lanka	-	3	3	3	3	3	4	5	6
	Saudi Arabia	-	8	9	10	12	13	15	21	32
	Austria	-	1	1	1	1	1	1	1	2
	Belgium	-	2	2	2	3	3	3	4	5
	Denmark	-	2	2	2	2	2	2	2	2
	Greece	-	2	2	2	2	2	2	2	2
	Italy	-	1	3	3	3	4	5	7	10
	W. Germany	-	3	5	6	7	8	9	16	26
	France	-	2	4	5	6	7	8	11	21
	Netherlands	-	5	6	7	8	9	11	19	30
	Norway	-	-	1	1	1	1	1	1	2
	Spain	-	1	1	1	1	2	2	2	3
	Sweden	-	1	1	1	1	1	1	2	2
	Switzerland	-	1	1	1	2	2	2	3	4
	Finland	-	-	-	-	-	1	1	1	1
	U.K.	-	6	7	7	8	9	11	19	30
	Total	-	40	50	54	62	71	81	119	182