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TELECOMMUNICATIONS NUMBERING ADVISORY COMMITTEE

Assignment of Codes and Numbers for External Facilities-based Operators

Purpose

This paper discusses and reviews the assignment principles and existing resources of numbers and codes in the Hong Kong Numbering Plan to cater for the requirements of the external facilities-based operators.

Background

2. As a result of the surrender of Hong Kong Telecom International (HKTI)'s exclusive licence for providing external services and circuits on 31 March 1998, the government has set out the following schedule that:

- external service-based competition will begin on 1 January 1999; and
- external telecommunications facilities-based competition will begin on 1 January 2000.

3. In accordance with the above schedule, the existing three Fixed Telecommunication Network Services (FTNS) licensees (i.e. Hutchison Communications, New T & T and New World Telephone) will automatically be licensed for providing both non-exclusive external services and facilities from the above dates. The government is also making a review on whether additional FTNS licences will be issued in future.

4. As a result, the TA is required to review the existing number/code assignment and allocation principles in the Code of Practice Relating to the Use of Numbers and Codes in the Hong Kong Numbering Plan (Cap. 269) for external network operators and consider whether the existing number/code resources in the Hong Kong Numbering Plan will be able to meet the future requirements of the additional external facilities-based operators.

International Signaling Point Codes (ISPCs)

5. In order to compete in the external facilities-based market, the three FTNS operators need to plan ahead and install their own international gateways and networks. The international gateways will be interconnected with overseas counterparts by means of C7 signalling links. In order to uniquely address an international gateway under the

C7 signalling scheme, it is necessary that each international gateway has to be equipped with an unique ISPC for the exchange of C7 signalling messages with overseas networks.

6. According to the Code of Practice, the assignment principles of ISPCs are as follows -

> ***"International Signalling Point Codes (ISPC) (para. 2.15-2.16)***
>
> *2.15 Only the external network operator is entitled to apply for and use ISPCs.*
>
> *2.16 For additional ISPCs, the external network operator has to show that all the assigned ISPCs have already been fully utilized and that he has new or additional requirements for ISPCs. If the application is considered justified, the TA will then assign additional ISPCs to it."*

7. Following the above assignment principles, the TA will assign ISPCs to the external facilities-based operators in order that they can plan, establish and operate their own international gateways and networks. In applying for the ISPCs, these operators need to submit details of their implementation plan and configuration of international gateways and networks for the TA's evaluation.

8. At present, Hong Kong is assigned with 5 International Signalling Area/Network Codes (SANC) by the International Telecommunication Union (ITU), namely 4-105, 4-106, 4-107, 4-108 and 4-109. From these SANCs, there are in total 40 ISPCs available which are 4-105(0-7), 4-1016(0-7), 4-107(0-7), 4-108(0-7) and 4-109(0-7). Eight ISPCs under 4-108(0-7) have been assigned to HKTI. As of today, there are 32 vacant ISPCs available for future assignment. The TA considers that the spare ISPCs should be sufficient to cater for the requirements of the external facilities-based operators in the near future. However, the Office of the Telecommunications Authority (OFTA) will monitor closely the consumption of ISPCs resources. If necessary, OFTA will make an application to the ITU for assigning additional SANCs to Hong Kong in order to meet the projected demand. The existing assignments of ISPCs are given in Annex 1.

Signalling Point Codes (SPCs)

9. All international gateways and networks provided by the external facilities-based operators will also be interconnected with local fixed and mobile networks for routing and passing of calls between these networks and overseas carriers. SPCs will be used instead of ISCPs for C7 signalling purpose with these domestic fixed and mobile networks. At present, the total number of unassigned SPCs in the numbering plan is 12,544. The detailed assignments of SPCs in Hong Kong are shown in Annex 2.

10. The allocation principles of SPC given in the Code of Practice are as follows -

"Signalling Point Codes (SPC) (para. 2.17-2.19)

2.17 Only those operators with carrier status (i.e. the external network operator, the fixed network operators and the mobile network operators) are entitled to apply for and use SPCs. Unless prior approval from the TA is obtained, the SPCs should be solely used by the operator to whom the SPCs have been assigned.

2.18 The TA will assign initially 64 SPCs to a newly licensed operator who has a need to operate C7 signalling network.

2.19 For any additional requirements of SPCs, the applicant should have achieved a minimum utilization rate of 90% with the SPCs already assigned to it before application for the additional SPCs may be considered. For successful application, the TA will assign 64 additional SPCs to the applicant."

11. The TA will follow the above allocation principles to allocate the SPCs to the new external facilities-based operators. Since the existing three FTNS operators have already been allocated with 64 SPCs for their fixed network operations, they can carry on using the allocated SPCs to cater for their external facilities requirements first. When the allocated SPCs are exhausted, they can then apply for additional SPCs from the TA, following the procedures given in the Code of Practice.

Testing and Routing Codes with Overseas Carriers

12. In the operation of the external facilities, external facilities-based operators will have to use some short codes in order that they can test and route the calls to and from Hong Kong with overseas carriers. Since the "19" prefix short codes have been set aside in the Hong Kong Numbering Plan for use by all operators for network testing and routing purposes, the TA is of view that external facilities-based operators should also make use of "19" codes for the testing and routing of calls with their overseas carriers.

International Routing Codes of HKTI

13. Currently HKTI employs a group of routing codes for their external services with overseas operators. These codes are "00", "114", "115", "118", "144" "1455" "1456", "146", "147" and "1808". A summary of HKTI's routing codes is given in Annex 3. HKTI claims that these routing codes cannot be further assigned and used in the domestic networks. The TA considers that it is a wastage of the domestic numbering resources. The TA will review with HKTI on these codes to see whether they can be relocated to the "19" range and also work out the migration plan.

Advice Sought

14. Members are invited to give advice and comment on the allocation and assignment principles of ISPCs, SPCs and “19” codes for external facilities-based operators and the TA’s intention to request HKTI to relocate and migrate the existing routing codes in Annex 3 to the “19” codes.

Office of the Telecommunications Authority
15 June 1998

Annex 1

International Signalling Point Code (ISPC) Assignments

ISPC Assignment	Node/Exchange	Status
4-105-(0-7)	-	Unallocated
4-106-(0-7)	-	Unallocated
4-107-(0-7)	-	Unallocated
4-108-0	Electra	HKTI
4-108-1	Hermes	HKTI
4-108-2	Zodiac	HKTI
4-108-3	Reserved	HKTI
4-108-4	Fo Tang	HKTI
4-108-5	East Tower	HKTI
4-108-6	Tai Po	HKTI
4-108-7	Po Man	HKTI
4-109-(0-7)	-	Unallocated

Signalling Point Code (SPC) Assignments

SPC Assignment	Services	Status
0000 xxxx xxxxxx (Note 1)	Basic Telephone Services	HKTC
0001 xxxx xxxxxx (Note 2)	STP, Special SP and SCP	HKTC
0001 0010 xxxxxx	Signalling Point	HKTI
0010 0000 xxxxxx	Mobile Telephone	HKTCSL
0010 0001 xxxxxx	Mobile Telephone	SmarTone
0010 0010 xxxxxx	Mobile Telephone	Hutchison
0010 0011 xxxxxx	Mobile Telephone	NW PCS
0010 0100 xxxxxx	Mobile Telephone	Peoples
0010 0101 xxxxxx	Mobile Telephone	Mandarin
0010 0110 xxxxxx	Mobile Telephone	Pacific Link
0010 0111 xxxxxx	Mobile Telephone	Hutchison
0010 1000 xxxxxx	Mobile Telephone	P Plus
0011 0000 xxxxxx	Basic Telephone Services	HCL
0011 0001 xxxxxx	Basic Telephone Services	NT&T
0011 0010 xxxxxx	Basic Telephone Services	NWT
0100 xxxx xxxxxx	-	Unallocated
0101 xxxx xxxxxx	-	Unallocated
0110 xxxx xxxxxx	-	Unallocated
0111 xxxx xxxxxx	-	Unallocated
1000 xxxx xxxxxx	-	Unallocated
1001 xxxx xxxxxx	-	Unallocated
1010 xxxx xxxxxx	-	Unallocated
1011 xxxx xxxxxx	-	Unallocated
1100 xxxx xxxxxx	-	Unallocated
1101 xxxx xxxxxx	-	Unallocated
1110 xxxx xxxxxx	-	Unallocated
1111 xxxx xxxxxx	Testing	HKTC

Note 1 On 9.1.97, HKTC's 9 SPCs were re-assigned to HKTI, which are

0000 0000 111011	0000 0011 101110	0000 0011 110000
0000 0101 011010	0000 0111 101101	0000 0111 001100
0000 0111 010111	0000 0101 011011	0000 0001 001001

Note 2 On 9.1.97 and 3.2.97, HKTC's 5 SPCs and 64 SPCs under "0001 0010 xxxxxx" were re-assigned to HKTI respectively. These 5 SPCs are

0001 0001 001000	0001 0001 001001	0001 0001 001010
0001 0001 001011	0001 0001 000000	

Annex 3

Codes being used by the Hong Kong Telecom International Ltd. in Call Routing

Leading Digits	Digit Length	Type of Services
00	2	International outgoing code
11(4,5)	3	International incoming code
118	3	International incoming code
144	3	International incoming code
145(5,6)	4	International incoming code
14(6,7)	3	International incoming code
1808	4	International incoming directory enquiry