

## **TELECOMMUNICATIONS NUMBERING ADVISORY COMMITTEE**

### **Number Resources for Fixed Telecommunication Network Services**

#### **Purpose**

On 11 January 2002, the TA has announced the full liberalization of the local FTNS market from 1 January 2003. Under the full liberalization policy, there will be no pre-set limit on the number of licences to be issued, and there is no time limit for licence applications. This paper would like to present the availability of number resources to support the fixed telecommunications services in the fully liberalized FTNS market.

#### **Scope of Fixed Telecommunications Network Services**

2. With the enactment of the amended Telecommunications Ordinance in June 2000, a new type of licence known as “Carrier Licence” has been introduced. Under this licensing regime, new FTNS operators would be granted the fixed carrier licences. A fixed carrier licence has a validity period of 15 years and, subject to TA’s approval, renewable for another 15 years. There will be a fixed annual licence fee of one million dollars, plus other fees based on the number of customer connections and use of any radio spectrum.

3. Under the fixed carrier licence, the licensees may provide local fixed wireline-based services, wireless local fixed network services and external facilities services including satellite-based and cable-based operation. The operator would need only one fixed carrier licence for the provision of local and/or external FTNS, in accordance with the scope of services approved by the Telecommunications Authority (TA).

### **Number resource for FTNS**

4. In order to provide fixed network services, the FTNS operators will need necessary number resources to facilitate the access of service by their customers. The following table summarizes the types of numbers and codes that might be needed for local/external FTNS, their current capacity in the Hong Kong Numbering Plan and the basic amount of numbers and codes that would be allocated to the successful applicant.

<b>Type of Services</b>	<b>Code/Number</b>	<b>Digit length</b>	<b>Category (See note below)</b>	<b>Available capacity</b>	<b>Basic amount of allocation</b>
Prime access code for IDD	001 for IDD voice and 002 for IDD fax	3	3	Common codes assigned to all eligible operators	2
Prime access code for IDD	003x,004x or 005x	4	2	30	1
Freephone service	Numbers in levels “800”- “809”	9	2	Over 9,000,000	1,000
Directory Enquiry Service	1081,1083 and 1088	4	3	Common codes assigned to all eligible operators	3
Telephone repair service	109	3	3	Common code assigned to all eligible operators	1
Time & Temperature	18501,18503 and 18508	5	3	Common codes assigned to all eligible operators	3
Block/unblock CND	133/1357	3/4	1	Common codes assigned to all eligible operators	2
Testing and routing	Prefix “19”	any	3	Common	All prefix

Type of Services	Code/Number	Digit length	Category (See note below)	Available capacity	Basic amount of allocation
codes	codes			codes assigned to all eligible operators	“19” codes
Customer enquiry and hot lines or operator-assisted services	102x, 104x, 105x, 107x 124x, 125x, 126x, 127x, 128x or 129x	4-7	2	100	1
Fixed telecommunications network services	Numbers in levels “2” and “3”	8	2	5,300,000 (including 900,000 numbers under SNA)	50,000
Personal Number	Numbers in levels “81”-“89”	8	2	6,500,000 (including 1,900,000 numbers under SNA)	50,000
Network Numbers (NN)	Numbers in level “4”	≤12	N/A	69 3-digit prefixes	1 prefix
Data Network Identification Codes (DNIC)	453x or 454x	4	N/A	12	1
Signalling Point Code (SPC)	14-bit binary code	14-bit binary	N/A	Over 10,000	64
International Signalling Point Code (ISPC)	“4-177-x” or “4-178-x”	5	N/A	15	1
Issuer Identification Number (IIN)	89 852 xx	7	N/A	88	1

**Note:**

Category 1 - Codes which are universally accessible and allocated to all operators.

Category 2 - Codes which are universally accessible and allocated to a single operator.

Category 3 - Codes which in general will not be passed across networks and are universally allocated to all operators.

SNA – Special Number Arrangement

**Assignment of IDD Prime Access Codes**

5. In addition to the codes 001 and 002 which would be universally assigned to each FTNS operators for IDD access by their directly connected customers, a unique IDD access code would also be assigned to each FTNS operator. The FTNS operators PCCW-HKT, Wharf New T&T, Hutchison Global Crossing and New World Telephone are assigned with the IDD access codes 006, 007, 008 and 009 respectively.

6. The new FTNS operators would be assigned with 4-digit access codes in the number ranges 003x, 004x and 005x. In the fully liberalised market with no pre-set limit on the number of operators, the 30 4-digit access codes might not be sufficient to meet the potential demand for IDD access codes. In this connection, it is proposed that after the consumption of the 005x and 003x 4-digit codes, 004x level would be expanded to 5 digits thus providing one hundred 004xx 5-digit access codes. Under this arrangement, a total of 120 IDD access codes would be made available.

**Assignment of common codes for directory, time &temperature, repair services, block/unblock CND and network testing/routing**

7. Common codes including 1081, 1083 and 1088 for directory services, 109 for repair services, 18501, 18503 and 18508 for time and temperature services, 133/1357 for block/unblock CND and all prefix “19” codes are “Category 3” codes which would not be passed across different networks. All eligible FTNS operators would be assigned with these common codes.

### **Assignment of codes for customer hotlines or operator assisted services**

8. Regarding customer hotline or operator assisted services, the incumbent FTNS operators are each assigned with two 3-digit short codes. For example, PCCW is assigned with 100 and 120 and New World Telephone is assigned with 106 and 123. Since there are only four 10x and six 12x codes available, it would not be feasible to assigned two 3-digit codes to the new FTNS operators. It is therefore that in future, each FTNS operators would be assigned with one 4-digit code for customer enquiry and operator assisted services. Under this arrangement, there will be 100 4-digit codes (102x, 104x, 105x, 107x and 124x.... 129x) available for these purposes. It should be sufficient to cater for future demand.

### **Assignment of subscriber, personal and freephone numbers**

9. These are numbers assigned to customers of the FTNS operators and would be allocated in accordance with the principle laid down in the "Code of Practice Relating to the Use of Numbers and Codes in the Hong Kong Numbering Plan" (COP). Eligible operators would be allocated with 50,000 subscriber numbers, 50,000 personal numbers and 1000 freephone numbers in accordance with the COP. Currently, there are 5.3 million spare numbers available to support the growth of the FTNS industry. OFTA would continue to monitor the consumption rate of the subscriber numbers with a view to ensure sufficient number resources would be made available to cope with the demand. Regarding personal and freephone numbers, it is considered that sufficient amounts are available to meet the future demand.

### **Assignment of Network Number (NN)**

10. Network numbers are assigned to both fixed and mobile operators for the provision of Operator Number Portability and Mobile Number Portability services respectively. These numbers are 12 digits long, each comprising a 3-digit prefix assigned to an operator. Currently, one NN prefix is assigned to each mobile operator. Current FTNS operators are assigned with more than one NN prefixes in order to cater for the different types of fixed services. In future, it is proposed that one NN prefix would preliminarily be assigned to a FTNS operator. Request for additional prefix would be considered by OFTA based on the justification submitted by the operators.

11. Currently, there are 69 3-digit prefixes available. At this stage, it is uncertain whether 69 prefixes are sufficient to meet the future demand. Since these prefixes are finite number resource supporting number portability services in both the fixed and mobile markets, it is important that sufficient prefixes for NN are made available. In this connection, the following alternatives are proposed to increase the availability of network numbers:

- (a) expanding the NN to 13 digits thus increasing the supply of NN by an order of magnitude. The whole prefix level “44” would need to be reserved as the expansion route; or
- (b) to continue assigning 3 digit prefixes until half of the 69 prefixes (i.e. 34 prefixes) are used. After that 4-digit prefixes will be assigned instead of 3-digit prefixes. Under this arrangement, a total of 34 3-digit prefixes and 350 4-digit prefixes would be available for assignment; or
- (c) to continue assigning 50 more 3-digit prefixes. After that 4-digit prefixes will be assigned instead of 3-digit prefixes. Under this arrangement, a total of 50 3-digit prefixes and 190 4-digit prefixes would be available for assignment.

#### **Assignment of ISPCs, SPCs and DNIC**

12. These are machine codes used for the purpose of equipment identification. Eligible FTNS operators would be assigned with the require codes in accordance with the COP and the relevant ITU-T Recommendations. Eligible operators would be assigned with one ISPC, 64 SPC and one DNIC in accordance with the COP. Additional ISPC and DNIC could be applied from the ITU if there are shortage for these codes in future. Regarding the SPC, there are over 10,000 spare codes. OFTA is studying the feasibility of reducing the basic unit of assigning 64 SPCs by introducing a common set of SPC for use by internal nodes of networks. In any case, the amount of spare SPC (over 10,000) should be able to cope with the future demand.

#### **Assignment of IIN**

13. An IIN is used to identify a telecommunications operator working in an international environment for their international charge card. Application

would be considered in accordance with the ITU-T Recommendation E.118 and ISO Standard 7812-2. Eligible operator would be assigned with one IIN in accordance with the COP. There is 88 spare IIN. As IIN is a finite number resource, it would be assigned prudently based on the genuine need of the operators.

**Advice Sought**

14. Members are invited to give their views and comments on this paper.

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