

## **Code of Practice Relating to the Use of Numbers and Codes in the Hong Kong Numbering Plan**

### **Background**

Pursuant to paragraph (3)(b) of Section 32F of the Telecommunications Ordinance (Cap. 106), the Telecommunications Authority (TA) may issue codes of practice relating to the use of numbers and codes in the numbering plan, and any code so issued may include provisions relating to number portability. Paragraph (3)(e) of the same section further provides that the TA may delegate the administration of the numbering plan or a part of the numbering plan to any person.

2. In January 1994, the TA issued a report entitled “A New Numbering Plan for Telecommunications Services in Hong Kong”. The report discussed, among other things, the principles of allocating and assigning numbers and codes from the numbering plan. Annex 1 to the report gave a detailed description of the numbering plan. Since its release, the report has served the telecommunications industry and the TA as a definitive guideline well. However, with the rapid development, the report needs an update in order to provide accurate and timely guidance to the industry. For obvious reasons, this document will have to be updated at frequent intervals from time to time.

3. To ensure that the allocations and assignments of numbers and codes for telecommunications networks/services follow the principles stipulated in the report above and meet up-to-date requirements of the telecommunications industry, the TA issues this Code of Practice (CoP) for the purpose of providing guidance to the telecommunications network operators and service providers, including paging service operators, mobile virtual network operators (MVNOs) and Service-Based Operator (SBO) Licensees etc., to whom the TA has delegated the administration of part of the numbering plan. This CoP will contain the necessary guidance principles for these operators to follow when assigning telecommunications numbers and/or codes to end customers. For ease of reference, a summarized description of the Hong Kong Numbering Plan and classification of short codes are given in Appendix 1 «Description of the Numbering Plan» and Appendix 2 «Classification of Short Codes» respectively.

## **Guiding Principles**

4. In the drawing up of the new numbering plan for Hong Kong in January 1994, the TA has adopted the following guiding principles:

- (a) the numbering plan should be able to meet the future growth and requirements in telecommunications for at least the next 15 years i.e. up to end 2009;
- (b) the numbering plan should be user friendly and be fair and equitable to all providers of telecommunications services; and
- (c) the numbering plan should be able to adapt to new technologies and services in future.

## **Allocation and Assignment**

5. There are two levels of handling telecommunications numbers and codes, viz. allocation and assignment.

- (a) Allocation is the distribution of numbers and codes by the TA to the telecommunications network operators, paging services operators, MVNOs and SBO Licensees etc. (hereafter collectively referred to as “operators”) on a block-by-block basis; and
- (b) Assignment is the actual designation of individual numbers and codes to operators or end customers. In most of the cases of end customers, the assignment is entrusted by the TA to the operators providing the services.

## **Allocation Principles**

6. In developing the allocation principles, the TA will ensure that the following requirements are met:

- (a) consumer interests should be properly taken care of;
- (b) competition is to be promoted;

- (c) allocations should encourage innovation in the provision of telecommunications services;
- (d) there is to be efficient use of numbers and codes; and
- (e) the allocation procedures should be fair and technically and economically feasible.

7. The approach taken by the TA in his management of the Hong Kong Numbering Plan is as follows:

- (a) the TA should ensure that number allocations are consistent with the numbering and code plan and other relevant regulatory instruments;
- (b) the TA should deal with number and code allocation requests in a timely manner;
- (c) the TA should be responsive to applicants in providing information assistance in relation to number and code allocation requests;
- (d) the TA should ensure that number and code allocations foster user convenience and ease of understanding and use;
- (e) the TA should be fair and consistent in its application of the allocation procedures; and
- (f) the TA should promote stability for end users in the administration of number and code allocation procedures.

8. The principles and application procedures for the allocation/assignment of numbers and codes for different types of operators are given in the appendices to this CoP as follows:

- (a) Appendix 3 «Guidance Notes for the Submission of Application for the Number Block(s)/Codes for the Fixed Services, Mobile Services and Paging Services in Hong Kong» – provides the principles and application procedures for the allocation/assignment of numbers and codes for the fixed services, mobile services and paging services.

(b) Appendix 4 «Allocation of Subscriber Numbers and Assignment of Mobile Network Code (MNC) to Mobile Virtual Network Operator (MVNO)» – provides the principles and application procedures for the allocation/assignment of numbers and codes for MVNOs.

(c) Appendix 5 «Allocation of Subscriber Numbers to SBO Class 1 and Class 2 Licensees» – provides the principles and application procedures for the allocation of numbers for Class 1<sup>1</sup> and Class 2<sup>2</sup> services operated by SBO Licensees.

### **Assignment Principles**

9. For efficient assignment of telecommunications numbers and codes to end customers, operators should observe the following principles:

- (a) assignment of numbers and codes by operators to end customers and their service offerings must comply with this CoP and the statements issued by the TA related to the numbering issues. The assignment principles of telecommunications numbers for Class 3 service<sup>3</sup> operated by SBO Licensees are given in Appendix 6 «Assignment Principles of Telecommunications Numbers for SBO Class 3 Licensees». The assignment principles of fixed network numbers to Direct-Dialling-In (DDI) services are given in Appendix 7 «Assignment Principles of Fixed Network Numbers for Direct-Dialling-In (DDI) Services»;
- (b) operators to whom the TA has delegated the administration of the assignment process must treat customers equitably and fairly;
- (c) operators will maintain a record of the numbers and codes under their administration in accordance with the TA's guidelines;

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<sup>1</sup> “Class 1 service” means an internal telecommunications service as described in Special Condition (SC) 17.2 of the SBO Licence.

<sup>2</sup> “Class 2 service” means an internal telecommunications service as described in SC 18.2 of the SBO Licence.

<sup>3</sup> “Class 3 service” means a telecommunications service as described in SC 16.1 of the SBO Licence.

- (d) operators should recover immediately any numbers or codes which have been given up by customers leaving the service (except for number portability requirements) or which are no longer used for a particular service. The recovered numbers/codes should be recycled for use within six months;
- (e) unless otherwise specified in this CoP or specifically approved by the TA, all numbers and codes in the Hong Kong Numbering Plan should allow “any-to-any communication” i.e. a calling party can reach a called party by dialling the number or code of the called party, irrespective of the networks (mobile and fixed inclusive) used by the calling party and the called party and irrespective of whether the calling party is calling from overseas or from a local station; and
- (f) Operators allocated with the Hong Kong telephone numbers for the provision of Class 1 and Class 2 services should not sell or pass the numbers to overseas operators for assignment to their customers. The licensees should maintain a direct supplier-customer relationship with the end-users assigned with the numbers and codes in the Hong Kong Numbering Plan, and be involved in operating or maintaining the Class 1 or Class 2 services enjoyed by the end users assigned with these numbers.

### **Number Fee**

10. Operators shall note that subject to licence fee structure applicable to their licences, an annual number fee shall be charged for each subscriber number allocated to operators regardless of whether the subscriber number has been assigned to end user or not. A subscriber number is a number in the numbering plan within numbering blocks allocated by the TA to a licensee, which may be assigned by the licensee to its customer for use of a telecommunications service. The numbers which fall within such meaning and subject to number fee are given in Appendix 8.

### **Number Return Principles**

11. The number return principles and the return procedures are given in Appendix 9 «Guidance Notes for the Return of Numbers for the Fixed Services, Mobile Services and Paging Services in Hong Kong».

Office of the Telecommunications Authority

xx August 2010

**Description of the Numbering Plan**

**Leading Digit 0**

<b>Leading Digits 00</b>		access codes for International Direct Dial (IDD) services.
<b>000</b>	-	reserved for future expansion.
<b>001</b>	-	prime access code for IDD calls via the network the customer has chosen as his/her access line provider.
<b>002</b>	-	to be used for the time being as the access code for IDD data/facsimile calls via the network the customer has chosen as his/her access line provider, pending a review on whether it is necessary to separate voice and data calls in future.
<b>003 - 009</b>	-	access codes for IDD voice/data/facsimile of individual fixed network to gain access to the international gateways i.e. a customer can make IDD calls via a particular network of his/her own choice even though he/she may originate a call from another network.

<b>Leading Digits 01-09</b>		reserved for future trunk access to other places in the region.
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**Leading Digit 1**

<b>Leading Digits 10</b>		short codes for various fixed services.
<b>Leading Digits 110-111, 113-119</b>		short codes, possibly harmonised in some cases with those in use elsewhere in the region.
<b>Leading Digits 112</b>		emergency code for all mobile services.
<b>Leading Digits 12</b>		short codes for various fixed services.
<b>Leading Digits 130-132, 134,</b>		reserved.

## 136-139

<b>Leading Digits 133</b>	code for blocking calling number display on a per call basis.
<b>Leading Digits 1357</b>	code for unblocking calling number display transmission for a particular call.
<b>Leading Digits 14</b>	network identifiers (NI) used by fixed licensees, mobile licensees and SBO Licensees offering Class 1 service for number portability.
<b>Leading Digits 15-16</b>	service access codes for external telecommunications services.
<b>Leading Digits 17</b>	short codes for various mobile services.
<b>Leading Digits 18</b>	special service codes, which involve high volume of traffic, shall be standardised and portable across various fixed networks for commonly provided services. Examples are telemarketing and telebetting.
<b>Leading Digits 19</b>	network test codes and routing codes for carriers/operators of external telecommunications services, fixed services and mobile services.
<b><u>Leading Digit 2</u></b>	
<b>Leading Digits 200</b>	calling card services operated by the Fixed Telecommunications Network Services (FTNS)/Fixed Carrier (FC)/Unified Carrier (UC) (with provision of fixed services) Licensees (hereafter referred to as “Fixed Services Licensees”).
<b>Leading Digits 201-206</b>	numbers for the fixed services except Class 2 service. Numbers shall be portable across Fixed Services Licensees and SBO Licensees offering Class 1 service.
<b>Leading Digits 207-209</b>	calling card services operated by the Fixed Services Licensees.
<b>Leading Digits 210-229</b>	numbers for the fixed services except Class 2 service. Numbers shall be portable across Fixed

Services Licensees and SBO Licensees offering Class 1 service.

**Leading Digits 23-29**

numbers for the fixed services except Class 2 service. Numbers shall be portable across Fixed Services Licensees and SBO Licensees offering Class 1 service.

**Leading Digit 3**

**Leading Digits 30**

numbers for Class 3 services. Numbers shall be portable across fixed networks. These numbers are normally assigned by Fixed Services Licensees to SBO Licensees. For avoidance of doubt, these numbers shall not be used for Class 1 or Class 2 services operated under the SBO Licence.

**Leading Digits 31**

numbers for the fixed services except Class 2 service. Numbers shall be portable across Fixed Services Licensees and SBO Licensees offering Class 1 service.

**Leading Digits 32-33**

reserved for future migration of numbering plan to longer digits.

**Leading Digits 34-39**

numbers for the fixed services except Class 2 service. Numbers shall be portable across Fixed Services Licensees and SBO Licensees offering Class 1 service.

**Leading Digit 4**

network numbers (NN) used by Fixed Services Licensees, mobile licensees and SBO Licensees offering Class 1 service for number portability.

**Leading Digit 5**

**Leading Digits 500**

reserved for special services.

**Leading Digits 501-509**

codes for value-added SMS / MMS including a service indicator in the third digit.

<b>Leading Digits 52, 55</b>	reserved for future migration of numbering plan to longer digits.
<b>Leading Digits 51, 53, 54 56, 59</b>	numbers for mobile services and other new services, if any. Numbers shall be portable across mobile networks.
<b>Leading Digits 57-58</b>	numbers for Class 2 Service used by Fixed Services Licensees or the SBO Licensees.
<b><u>Leading Digit 6</u></b>	
<b>Leading Digits 600</b>	reserved for special services.
<b>Leading Digits 601-699,</b>	for mobile services. Numbers shall be portable across mobile networks.
<b><u>Leading Digit 7</u></b>	
	paging services, except for the '70' range which will be reserved for special services.
<b><u>Leading Digit 8</u></b>	
<b>Leading Digits 800</b>	freephone services operated by Fixed Services Licensees and numbers shall be portable across fixed networks. Depending on the actual service arrangement, this number range may not be accessible to an overseas caller.
<b>Leading Digits 801-809</b>	reserved for future freephone expansion. Numbers shall be portable across fixed networks.
<b>Leading Digits 81-83</b>	personal numbering services. Numbers shall be portable across fixed networks. No new '81-83' personal numbers will be allocated to Fixed Services Licensees with effect from 1 January 2009.
<b>Leading Digits 84-89</b>	reserved for future migration/operation of numbering plan to longer digits.

**Leading Digit 9**

**Leading Digits 900**

paid-for information services including a service indicator in the fourth digit. Numbers shall be shared by all fixed operators in a fair and equitable manner.

**Leading Digits 901-989**

for mobile services. Numbers shall be portable across mobile networks.

**Leading Digits 99**

for emergency services.

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**Classification of Short Codes**

**Allocation of Short Codes**

Short codes are defined as those telephone numbers which consist of no more than 7 digits in length. They are either used for services with high volume of traffic so that public telecommunications networks will not be unduly overloaded or where expeditious access by customers is required. Examples are the enquiry services and hotlines provided by the FTNS/FC/UC operators (hereafter referred as “fixed operators”) under the “10X” and “12X” codes, the “188X” telebetting services provided by the Hong Kong Jockey Club, the “180” payment-by-phone services provided by the banking industry and utility companies and the “999” emergency services. Since short codes are valuable scarce resources, any request for allocation of a short code will be scrutinised by the TA closely.

**Categories of Short Codes**

2. The TA classifies the short codes into the following three categories:

- |                   |                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <u>Category 1</u> | Codes which are universally accessible by customers and universally allocated to all operators e.g. “99X” for emergency services;                                                                                                                                                                                                                                            |
| <u>Category 2</u> | Codes which are universally accessible by customers and allocated to a single operator e.g. “10X”, “12X”, “15XX”, “16XX”, “17X” and “20X” codes; and                                                                                                                                                                                                                         |
| <u>Category 3</u> | Codes which in general will not be passed across networks and are universally allocated to all operators e.g. “108X” for the directory enquiry services, “109” for the fault reporting services and “1850X” for time and temperature services. However, operators are permitted to pass these codes across networks under bilateral or multilateral commercial arrangements. |

3. All the short codes will be classified into the above three categories in the Numbering Plan for ease of reference by the operators.

### **Short Code Assignment to Fixed and Mobile Operators**

4. In order to utilise the short codes more efficiently and effectively, the TA will assign to every fixed operator a “10”-prefix or “12”-prefix code and every mobile operator a “17”-prefix code for their various customer enquiry, hotlines requirements and operator-assisted services. Depending on their own operational requirements, the fixed and mobile operators can be flexible with the application and the digit length of the allocated short codes provided that they do not exceed 7 digits in length. In addition, the use of these short codes should not duplicate those services which have already been catered for under a separate numbering range in the Numbering Plan. Except for the “18” level, all short codes and their sub-levels should not be assigned to customers under any circumstances. However, subject to compliance with the licence conditions concerning the prohibition of anti-competitive practices and abuse of dominant position, operators which simultaneously own and operate fixed and mobile networks are allowed to implement and use the allocated “10”-prefix or “12”-prefix and “17”-prefix codes in their fixed and mobile operations provided that they remain to comply with the above restrictions and requirements.

### **Short Code Assignment to SBO Licensees for the provision of External Telecommunications Services**

5. To enable customers to have an easy and convenient access to the external telecommunications services offered under the SBO Licences, the TA will assign to each licensee a unique 4-digit “15XX” or “16XX” short code as service access code. The licensees may, at their discretion, extend the digit length of the assigned short codes from 4 digits to a maximum of 5 digits in length.

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**Guidance Notes for the Submission of Application for the  
Number Block(s)/Codes for the Fixed Services,  
Mobile Services and Paging Services in Hong Kong**

**1. Introduction**

- 1.1 Application should be submitted to the Telecommunications Authority (TA) at the following address:

The Telecommunications Authority  
Office of the Telecommunications Authority  
29/F Wu Chung House  
213 Queen's Road East  
Wanchai  
Hong Kong

- 1.2 Enquiries concerning these Guidance Notes should be addressed to:

Senior Regulatory Affairs Manager (Regulatory 21)  
Office of the Telecommunications Authority  
Telephone No.: +852 2961 6367  
Facsimile No. : +852 2803 5112  
Email : numbering@ofta.gov.hk

- 1.3 The Telecommunications Authority is not bound by this document to grant a number block or code to any applicant.

## **2. General Principles**

- 2.1 Processing of an application will take a maximum of 10 working days from the date of receipt of the application complete with all the required documents and supporting materials.
- 2.2 The successful applicant will be invited for a balloting session to draw the required type of number block(s)/code(s) from a pool which is pre-determined by the TA.
- 2.3 The TA has adopted the first-come-first-served principle whereby the priority of an applicant applying for relevant number block(s)/code(s) will be determined from the date and time when his application, complete with all the required documents and supporting materials, is received by the TA.
- 2.4 If the whole block of allocated number(s) or the code(s) is not implemented in the network within 12 months from the date of approval, it will automatically be withdrawn by the TA.
- 2.5 If an application is rejected by the TA, the applicant may appeal by filing a formal written request to the TA through registered post. Within 14 working days from the receipt of the request, the TA shall inform the applicant of the result of the appeal and the reasons for the determination.

### **Interim Arrangement for Allocation of Special Number Blocks for Paging Services (para. 2.5bis)**

- 2.5bis Any paging operator may apply, with the required supporting justifications in accordance with the requirements given in clause 2.14-2.16, for some preferred paging number blocks from the TA based on the first-come-first-served principle. Provided that the preferred paging number blocks are available in the numbering plan and the justifications put forward are accepted by the TA, the successful applicant would be granted the required number blocks directly by the TA without the need to go through the balloting procedures as specified in clause 2.2 above. However, the successful applicant has to donate to charity (the Hong Kong Community Chest) an amount of HK\$100,000 if the total size of special number blocks requested per occasion is over 100,000 numbers or HK\$50,000 if the total size of special number blocks requested per occasion is less than 100,000 numbers. Within one week after the allocation is done, the TA would announce the allocation and the donated sum on OFTA's home page [URL address: <http://www.ofta.gov.hk>]. The TA will propose a replacement of the procedure in the "Special Number Arrangements" and after the required legislations are in place, this interim arrangement would then be cancelled automatically.

**For Fixed Services under the Fixed Telecommunications Network Services (FTNS) Licence / Fixed Carrier (FC) Licence / Unified Carrier (UC) Licence (para. 2.6-2.9(B))**

- 2.6 If the applicant is to launch a new fixed network service, he needs to give full technical and operational details before the application for the required numbers is considered. For each successful application of numbers for the launch of basic telephone services<sup>5</sup>, the TA will allocate a 10k number block while for each successful application of numbers to launch Class 2 service, the TA will allocate a 10k number block to the applicant.
- 2.7 For additional numbers for the existing basic telephone service, the applicant should have achieved a minimum utilisation rate of 70% with the number blocks already allocated to him. Otherwise the applicant needs to give justification. For successful application, the TA will allocate one 10k block or more with an amount of numbers equal to six times its average monthly number demand, to be rounded up to the nearest 10k numbers, to the applicant.
- For additional numbers for Class 2 service, the applicant should have achieved a minimum utilisation rate of 70% with the number blocks already allocated to him. Otherwise the applicant needs to give justification. For successful application, the TA will allocate one 10k block or more with an amount of numbers equal to six times its average monthly number demand, to be rounded up to the nearest 10k numbers, to the applicant.
- 2.7(A) For additional numbers for the personal numbering service, the applicant should have achieved a minimum utilisation rate of 70% with the number blocks already allocated to him. Otherwise the applicant needs to give justification. For successful application, the TA will allocate 10k numbers to the applicant. No more personal numbers will be allocated to fixed operators with effect from 1 January 2009.
- 2.8 For additional numbers for information services or Class 3 services, the applicant should have achieved a minimum utilisation rate of 70% with the number blocks already allocated to him. Otherwise the applicant needs to give justification. The TA will allocate 10k numbers to the successful applicant.
- 2.9 For additional numbers for freephone services, the applicant should have achieved a minimum utilisation rate of 70% with the number blocks already allocated to him. Otherwise the applicant needs to give

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<sup>5</sup> For the purpose of this Appendix, basic telephone services refer to direct exchange line, facsimile line, centrex line and direct dialling in (DDI) line.

justification. The TA will allocate 1k numbers to the successful applicant.

2.9(A) For additional 7-digit “18” short codes for services of high volume of traffic, the applicant should have achieved a minimum utilisation rate of 80% with the block or blocks of “18” short codes already allocated to him. Otherwise the applicant needs to give justification. The TA will allocate 1k block of the 7-digit “18” short codes to the applicant.

2.9(B) For any application for 5 or less digits “18” short code(s), the applicant should submit the application to the TA directly or through the Fixed Services Licensees providing the fixed services. The application should enclose all the necessary supporting justification and information for using the required short code(s). If the application is accepted and approved by the TA, the applicant will then be assigned directly with the required “18” short code(s). In considering the application, the TA will use the following criteria:

- (a) There is a strong public demand and interest for the service in the community;
- (b) The service provider must be a public organisation, utility company or non-profit making entity;
- (c) The service must be of a type that generates extremely high volume of traffic which involves mass calling. The applicant must obtain the support from the relevant fixed services providers who provide the required network service to the applicant; and
- (d) The service provider must be equipped with sufficient equipment and manpower resources in order to provide a satisfactory service.

**For Class 1 and Class 2 Services under the Services-Based Operator (SBO) Licence (Para. 2.10-2.11)**

2.10 If the applicant is to launch Class 1 or Class 2 services, he needs to give full technical and operational details before the application for the required numbers will be considered. For successful application, the TA will allocate a 10k number block for the relevant class of service to the applicant (i.e. two 10 number blocks if both Class 1 and Class 2 services are applied).

2.11 For additional numbers for either the Class 1 or Class 2 service, the applicant should have achieved a minimum utilisation rate of 70% with the respective type of number blocks already allocated to him. Otherwise the applicant needs to give justification. For successful

application, the TA will allocate one 10k block or more with an amount of numbers equal to six times its average monthly number demand, to be rounded up to the nearest 10k numbers, to the applicant.

**For Mobile Services (para. 2.12- 2.13)**

- 2.12 If the applicant is to launch a new mobile service, he needs to give full technical and operational details before the application for the required numbers is considered. For each successful application to launch mobile service for subscribers, the TA will allocate a 10k number block to the applicant.
- 2.13 For additional numbers for existing mobile service, the applicant should have achieved a minimum utilisation rate of 70% with the number blocks already allocated to him. Otherwise the applicant needs to give justification. For successful application, the TA will allocate one 10k block or more with an amount of numbers equal to six times its average monthly number demand, to be rounded up to the nearest 10k numbers, to the applicant.

**For Paging Services (para. 2.14-2.16)**

- 2.14 If the applicant is to launch a new paging service, he needs to give full technical and operational details before the application for the required numbers is considered.
- 2.15 For additional numbers for the existing automatic/secretarial service, the applicant should have achieved a minimum utilisation rate of 70% with the number blocks already allocated to him. Otherwise the applicant needs to give justification. For successful application, the TA will allocate one 10k block or more with an amount of numbers equal to six times its average monthly number demand, to be rounded up to the nearest 10k numbers, to the applicant.
- 2.16 For additional numbers for the existing operator-assisted service, the TA will consider whether the traffic of the installed telephone lines will justify additional number block(s). If the application is successful, the TA will allocate one 1k block for calling and one 1k block for replying.

**International Signalling Point Codes (ISPC) (para. 2.17-2.18)**

- 2.17 External facilities-based and service-based operators who establish direct C7 signalling links and interconnections with overseas carriers are entitled to apply for and use ISPCs.
- 2.18 For additional ISPCs, the external facilities-based and service-based operators have to show that all the assigned ISPCs have already been fully utilised and that they have new or additional requirements for

ISPCs. If the application is considered justified, the TA will then assign additional ISPCs to them.

**Signalling Point Codes (SPC) (para. 2.19-2.22)**

- 2.19 Network operators (mobile network operators and fixed network operators which include external facilities-based operators), MVNOs, SBO Licensees and other telecommunications service providers operating a C7 signalling network or switch 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.
- 2.20 The TA will assign initially 64 SPCs to a newly licensed network operator (either a mobile operator or fixed operator which may be an external facilities-based operator) who has a need to operate a C7 signalling switch/network with local carriers.
- 2.21 The TA will assign initially 8 SPCs to a newly licensed telecommunications service provider (e.g. MVNO, SBO Licensee and external telecommunications service provider) who has a need to operate a C7 signalling switch/network with local carriers.
- 2.22 For any additional requirements of SPCs, the applicant should have achieved a minimum utilisation rate of 90% with the SPCs already assigned to it before application for the additional SPCs may be considered. For each successful application, the TA will assign 64 additional SPCs to a network operator and 8 SPCs to a non-facility-based operator.

**Data Network Identification Code (DNIC) (para. 2.23-2.23(A))**

- 2.23 Only operator operating a packet-switched public data network with X.75 interconnection with other public data networks or fixed network operator operating Public Switched Telephone Network or Integrated Services Digital Network interworking with public data networks is entitled to apply for and use a DNIC.
- 2.23(A) Applicant should give full technical and operational details before the application for a DNIC is considered. For successful application, the TA will assign one DNIC to the applicant.

**Calculation Method of Utilisation Rate (para. 2.24-2.24(B))**

- 2.24 The calculation method used by the TA in calculating the utilisation rate of the number block(s)/code(s) (other than fixed numbers, personal numbers and mobile numbers) already allocated to an applicant is:

Utilisation Rate =  $(A + B) / (\text{total capacity of allocated number block(s)/code(s) for the service(s)}) \times 100\%$

Where A = total capacity of number block(s)/code(s) assigned to active customers at the time of application

B = total capacity of number block(s)/code(s) reserved for inactive customers who have left the service(s) for the last 6 months calculated from the date of application

2.24(A) A fixed network operator may divide its allocated basic telephone services numbers up to a maximum of three categories (i.e. Direct Exchange Line (DEL), NGN(New Platform) and Direct-Dialling-In (DDI)). The regrouping of the number blocks from one category to another needs prior approval from the TA. The calculation method used by the TA in calculating the utilisation rate of each category of fixed numbers and personal numbers already allocated to an applicant is:

Utilisation Rate =  $(A + B + C) / T \times 100\%$

Where A = Total capacity of originally allocated fixed/personal numbers assigned to active customers at the time of application

B = Total capacity of originally allocated fixed/personal numbers reserved for inactive customers for the last 6 months calculated from the date of application

C = Total capacity of ported-out fixed/personal numbers under number portability at the time of application

T = Total capacity of originally allocated fixed/personal numbers

2.24(B) The calculation method used by the TA in calculating the utilisation rate of mobile numbers already allocated to an applicant is:

Utilisation Rate =  $(A + B + C + D) / T \times 100\%$

Where A = Total capacity of originally allocated mobile numbers assigned to active customers at the time of application

B = Total capacity of originally allocated mobile

numbers reserved for inactive customers for the last 6 months calculated from the date of application

C = Total capacity of ported-out mobile numbers under number portability at the time of application

D = Total capacity of originally allocated mobile numbers used for supporting call routing, including handover numbers, roaming numbers, global title numbers, etc. (i.e. not greater than 1% of the total capacity of originally allocated mobile numbers)

T = Total capacity of originally allocated mobile numbers

### **Codes for Value-added SMS / MMS (para. 2.25)**

2.25 The codes “50(1-9)” are allocated for value-added short message service (SMS) / multimedia messaging service (MMS). Mobile Carrier Licensees and Unified Carrier Licensees providing mobile services are entrusted by the TA to administer these codes. The TA may appoint other operators (e.g. Fixed Services Licensees and MVNOs offering SMS / MMS) to administer these codes.

### **3. Information to be provided by Applicant**

3.1 In order to facilitate the TA to process an application, the applicant has to supply the following information:

- (a) Name of company and contact person;
- (b) Address of company, facsimile number and telephone number of the contact person;
- (c) Details of the service: whether the applicant intends to launch a new service or to expand/improve an existing service;
- (d) The requirement of the number blocks/codes and indicate any preferences;

- (e) Operational and technical details relating to the requirement of the number block(s)/code(s);
- (f) For the expansion/improvement of the existing services, an applicant needs to give the justification for the additional number block(s)/code(s) required. Information regarding the utilisation of numbers/codes in the existing number block(s)/code(s), the amount of numbers/codes which are recovered and recycled at each month for the past six months from the date of application, type of services, forecast of customer growth and the way to deploy the new number block(s)/code(s) is required for evaluation;
- (g) If an applicant applies for new number block(s) to expand or to improve his existing operator-assisted paging service, then in addition to the requirement in (f) above, he needs to supply the traffic data of the telephone lines that he has currently installed;
- (h) If an applicant applies for number blocks/codes to launch a new service, he needs to explain and give full operational and technical details of the proposed service;
- (h)bis If an applicant applies for any preferred paging number blocks for the existing or new paging services, he needs to follow the procedures given in clause 2.5bis to supply the required supporting justifications in his application and he also needs to donate the committed amount to charity if he is allocated the preferred number blocks; and
- (i) The target service launch date.

3.2 For application for ISPCs and SPCs, the applicant is required to submit the following additional information:

- (a) Schematic of the C7 switch/network set-up showing the types and interconnection with local and overseas carriers;
- (b) Model and type of the C7 signalling equipment;
- (c) Documentary evidence to prove that the C7 signalling equipment are in compliance with the relevant ITU-T standards (e.g. Q.7xx series);
- (d) Physical address of the installation at the Hong Kong end;

- (e) At least one planned C7 signalling interconnection with overseas carriers, with name and address of distant signalling point, location of distant signalling point, and ISPC of distant signalling point, if known; and
- (f) In-service date of the ISPCs and SPCs (month/year).

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**Allocation of Subscriber Numbers and Assignment of Mobile Network Code (MNC) to Mobile Virtual Network Operators (MVNOs)**

Subscriber numbers and MNC may be allocated/assigned to licensed MVNOs if they meet the following requirements:

- (a) Provide, or intend to provide, mobile services to a customer base, including the general public;
- (b) Provide its own mobile switching and gateway infrastructure, for circuit and/or packet switched traffic;
- (c) Enter into its own interconnection and roaming agreements;
- (d) Provide its own business support systems, such as billing and customer care;
- (e) Maintain its own Home Location Register of subscribers (or equivalent functionality);
- (f) Satisfy requirements for call control, as required by the TA and normally associated with an operator (such as emergency calls, number portability etc.); and
- (g) Issue its own SIM cards.

2. The MVNO applying for subscriber numbers and MNC should submit sufficient justifications and information, to the TA in supporting its application of MNC and subscriber numbers. Upon the completion of the equipment installation or service launch of the MVNO concerned, the TA may, if necessary, conduct a physical audit of the MVNO's installed equipment or ask the MVNO to supply additional information in order to verify whether the MVNO has already fulfilled the requirement given in para. (1) above.

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**Allocation of Subscriber Numbers to  
SBO Class 1 and Class 2 Licensees**

Subscriber numbers may be allocated to SBO Licensees if they meet the following requirements:

- (a) Provide, or intend to provide, Class 1 or Class 2 services to the general public and any local customer.
- (b) Provide their own service platforms, such as IP infrastructure and media gateway for interfacing with the hosting Fixed Services Licensees.
- (c) Provide their own business support system, including the billing and customer care systems.

2. The TA may inspect the applicant's installed equipment or ask the applicant to furnish the relevant information in order that he may verify that the applicant fulfils the requirement given in (a) – (c) at all time.

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**Assignment Principles of Telecommunications Numbers for  
SBO Class 3 Licensees**

**Classification of Class 3 Services**

In the Hong Kong Numbering Plan, telecommunications numbers with leading digit “30” are reserved for Class 3 services for which no specific numbers under the Hong Kong Numbering Plan have been assigned. These numbers are normally assigned by the fixed operators to the SBO operators. Fixed operators may also use these numbers for the provision of similar services under their licences. Based on the numbering usage and the operational nature, Class 3 services can be broadly classified into two groups:

**Group 1**

2. Group 1 services are Internet access services, facsimile/data store and forward services, electronic data interchange, database access and retrieval, IDD-type of services including International Simple Resale (ISR) voice, data and fax services, calling card services and etc. These services usually make use of Direct Exchange Lines (DEL) or Direct Dialling In (DDI) lines for connection to the fixed networks. Customers subscribing to these services usually access the services by dialling a prime number with the leading digits “30”.

**Group 2**

3. Group 2 services are public messaging services whereby each customer subscribing to the services is assigned with a unique “30” number as the access number for his personal mailbox. Callers will dial this unique “30” number to deposit messages in the called party’s mailbox and the messages can be voice, fax or electronic mail. The services usually make use of Direct Dialling In (DDI) lines for connection to the fixed network.

**Assignment of “30” Numbers to SBO Operators under Normal Applications**

4. For Group 1 Class 3 services, the maximum circuit-to-number ratios for Direct Exchange Line (DEL) and Direct-Dialling-In (DDI) lines are 1:1 and 1:5 respectively.

5. For Group 2 Class 3 services, SBO operators could request for the assignment of up to a maximum of 300 numbers from the fixed operator for every installed or additional T1 circuit or 24 DDI circuits. The maximum ratio of circuit-to-number for DDI service is 1:12.5.

**Assignment of “30” Numbers to SBO Operators under Special Circumstances**

6. If SBO operators have an operational need to use more numbers than that available from the normal assignment, they can submit an application together with their reasons and justifications to the TA stating their required circuit-to-number requirement. The TA will study the operators’ request based on the operational requirements, service nature, traffic demand and the existing utilisation of “30” numbers already assigned to the operators. If the applications are successful, the TA will issue an approval letter to the requesting operators to facilitate them to apply for the required numbers from the fixed operators.

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**Assignment Principles of Fixed Network Numbers for  
Direct-Dialling-In (DDI) Services**

**Assignment of DDI Numbers to Customers of PABX Systems by  
Fixed Services Licensees and SBO Licensees**

Direct-Dialling-In (DDI) numbers are assigned to corporate customers for the provision of telephone extensions in private automatic branch exchange (PABX) systems.

2. To cater for DDI numbers requirement of a customer installed with a PABX system, the Fixed Services Licensees or SBO Licensees (the telecommunications licensees) could assign a basic quantum of 100 DDI numbers to the customer.

3. However, if customers have actual requirements of using more than 100 DDI numbers, the telecommunications licensees could assign in multiple of 100 DDI numbers to the customers according to a) the ratio of circuit-to-number of 1:12.5 for incoming only DDI circuits; and b) the ratio of circuit-to-number of 1:6.3 for new both way DDI circuits (both way circuits refer to both the incoming and outgoing traffic can be put through on the same circuits). The amount of numbers to be assigned to customers would be rounded up to the nearest 100 DDI numbers.

4. For exceptional cases where customers (such as hotels) with relatively low traffic volume per PABX extension compared with the ordinary office operation, the telecommunications licensees could assign DDI numbers (in multiple of 100) to cater for the user's requirement according to the actual number of installed extensions.

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**Appendix 8**

**Telecommunications Numbers subject to Number Fee**

Operators are required under their respective licences to pay the number fee for the following subscriber numbers allocated by the TA.

Number Levels	Remark
2X	Exclude those levels for the provision of calling card services (i.e. 200X, 207X, 208X, 209X).
3X	Exclude the access code reserved for number translation devices (i.e. 3000)
5X	Exclude those levels reserved for special services and value-added SMS/MMS services (i.e. 500X, 50(1-9)X).
6X	Exclude the level reserved for special services (i.e. 600X).
7X	Exclude the level reserved for special services (i.e. 70X).
8X	Include freephone numbers and personal numbers
9X	Exclude those levels for provision of information services and emergency services (i.e. 900X, 99X).

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**Guidance Notes for the Return of Numbers  
for the Fixed Services,  
Mobile Services and Paging Services in Hong Kong**

**1. Introduction**

- 1.1 Return of numbers should be submitted to the Telecommunications Authority (TA) at the following address:

The Telecommunications Authority  
Office of the Telecommunications Authority  
29/F Wu Chung House  
213 Queen's Road East  
Wanchai  
Hong Kong

- 1.2 Enquiries concerning these Guidance Notes should be addressed to:

Senior Regulatory Affairs Manager (Regulatory 21)  
Office of the Telecommunications Authority  
Telephone No.: +852 2961 6367  
Facsimile No. : +852 2803 5112  
Email : numbering@ofta.gov.hk

- 1.3 The Telecommunications Authority is not bound by this document for the return of numbers by any applicant.

**2. General Principles**

- 2.1 Return of non-contiguous numbers from applicants are accepted on a condition that they accept re-allocation of formerly returned numbers when they have new demand for numbers in future. The applicant may however choose, among the formerly returned numbers, the preferred prefixes that it wishes to be allocated on the subsequent applications for additional numbers.
- 2.2 An applicant may return unassigned numbers at most once in a licensing year and no additional numbers will be allocated to this applicant within a period of six months from the date of its last return of numbers.
- 2.3 An applicant should submit a written request together with an electronic file containing all the numbers to be returned. The format and the

structure of the electronic file are given in Appendix 9A. The quantity of returned numbers should be in multiples of 1,000.

- 2.4 The TA will check the format of the submitted file, the quantity of the returned numbers, and will ensure the returned numbers are within the number blocks previously allocated to the applicant. The TA will provide an acknowledgement, or otherwise a request for clarification, to the applicant within 10 working days. The TA may conduct sample-check to verify that the returned numbers are of 'unassigned' or 'vacant' status.
- 2.5 The numbers are considered 'returned to the TA' on the date when an acknowledgement is sent by the TA to the applicant. If subsequently any mismatch with the status of the return numbers are found, e.g. through sample check or auditor's certification, the applicant will be required to make clarification or rectification on its former submission.

### **3. Information to be provided by Applicant**

- 3.1 In order to facilitate the TA to process an application, the applicant has to supply the following information:
  - (a) Name of applicant and contact person;
  - (b) Address of applicant, facsimile number and telephone number of the contact person;
  - (c) The electronic file (i.e. mentioned in 2.3 above) should be stored in an electronic media e.g. CD/DVD.

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## Appendix 9A

### **Format and Structure of the Electronic File for the Return of Numbers**

The numbers listed in the file can be individual numbers or number ranges. Each line shall be ended with a carriage return <CR> and a line feed <LF>. The format of an electronic file is given below:

<b>Line 1: Licence Number</b>	
Format	<Licence_Type>-<Licence_Number>
Example	UCL-001
Remarks	<Licence_Type> are defined below: UCL Unified Carrier Licence FTN Fixed Telecommunication Network Services Licence FCL Fixed Carrier Licence MCL Mobile Carrier Licence MVN Mobile Virtual Network Operator Licence SBO Service-Based Operator Licence PAG Public Radio Paging Licence  <Licence_Number> is a number indicating the licence number of the licensee.
<b>line 2: Number Return Request Submission Date</b>	
Format	YYYY-MM-DD
Example	2009-01-23
<b>line 3: Total quantity of returned numbers</b>	
Format	<Integer>
Example	3000
Remarks	The quantity of returned numbers must be a multiple of 1000.
<b>line 4+: List of returned numbers</b>	
Format	<Single_Number> or <Single_Number>,<Location_Code> or <Start_Range>-<End_Range> or <Start_Range>-<End_Range>,<Location_Code>
Example	90102030 90102031,KT1 90102041-90103050 90104000-90105000,TST15
Remarks	1) The list of numbers and number ranges must be in ascending order.

	<p>2) To indicate a range of numbers in one line, the start-number and end-number (inclusive) are delimited by a hyphen (-).</p> <p>3) The optional field &lt;Location_Code&gt; shall be separated from a number or number range in the same line by a comma (,).</p> <p>4) The &lt;Location_Code&gt; is determined by each operator. It must consist of 3 to 5 alphanumeric characters only.</p>
<b>Sample File</b>	
File content	UCL-001 2009-02-05 3000 90000000,TST 90001001-90003000,TST 90005123 90008001-90008998

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