



**Information & Communication Technologies Authority**

Consultation Ref: ICTA/02/08

**Guidelines for Implementation of 8-Digit  
Numbering Plan for Mobile Services  
Scheduled at latest by the 1<sup>st</sup> November 2009**

29 September 2008

## GUIDELINES ON RESPONDING TO THIS CONSULTATION

G.1 All comments that you may have to improve this document are welcomed. Your input is specially required as from section 7 onwards. You are required to provide your views on the proposed two-phased approach and the implementation procedures highlighting any difficulties which you envisage to face and proposing remedial solutions.

G.2 You are invited to send your written views and comments on the issues raised in this document to the **Executive Director, ICT Authority, 12<sup>th</sup> Floor The Celicourt, Celicourt Antelme Street, Port Louis**, or by email to [icta@intnet.mu](mailto:icta@intnet.mu), at latest by 16h00 on 22 October 2008.

G.3 Should you be including confidential information as part of your responses, you are requested to clearly identify the said confidential materials and to place same in a separate annex to your response.

## 1.0 BACKGROUND

- 1.1 The ICT Authority has as statutory function under section 18 (1) (q) of the Information and Communication Technologies Act 2001 (as amended), to “*determine the numbering system to be used for every ICT services including telecommunication service, and manage, review, and, where appropriate, re-organise the numbering system*”.
- 1.2 In the wake of the liberalisation of the telecommunications sector, the ICT Authority took over the administration of the National Numbering Plan which had previously been formulated and managed by the incumbent operator.
- 1.3 The Authority thus identified the features of the prevailing Numbering Plan which were not consonant with the liberalised telecoms environment and the competition-driven numbering policy favoured. Thereafter it engaged into a reforming exercise of the said Plan.
- 1.4 The objectives of this document are as follows:-
  - 1.4.1 Recalling the activities of the ICT Authority since liberalisation with respect to Numbering administration;
  - 1.4.2 Summarizing the decisions taken with a view to reforming the prevailing numbering plan;
  - 1.4.3 Reviewing the reasons for which the numbering plan has to be migrated to 8-digits;
  - 1.4.4 Explaining the implementation issues;
  - 1.4.5 Presenting a two-phased approach to the migration to the 8-digit numbering plan with a view to circumventing the said implementation issues, where the first phase will involve mobile numbers only and the second phase fixed line numbers, including toll free and special numbers;
  - 1.4.6 Detailing the roadmap for the migration of mobile numbers to 8-digits while specifying the role of each stakeholder.

## 2.0 CONSULTATION EXERCISE

- 2.1 A Consultation on the National Numbering Plan was launched by the ICT Authority. The document released proposed, *inter-alia*:-
  - (i) Migration towards an 8-digit Numbering Plan;
  - (ii) Numbering Allocation Procedures and Charging Principle;
  - (iii) Carrier Selection Strategies.
- 2.2 The change to an 8-digit numbering system (whereby a leading digit is added to the existing 7-digit numbers to differentiate between different services) was proposed for the following main reasons:-
  - (i) There is no coherent structure in the existing 7-digit Numbering Plan; numbers allocated for mobile services are interspersed with those allocated for fixed services;
  - (ii) A service-based numbering plan, where a service can be identified by the number range used, is more user-friendly and gives the subscriber an indication about the tariff of the call;
  - (iii) Number blocks have been opened in the whole range from 0-9 in the current plan. New services requiring a different number range will

have to be interspersed with number ranges already allocated to existing services. The plan therefore does not provide an appropriate framework for creation of new services;

- (iv) The numbering plan should sensibly allow for at least **three usable geographic numbers per person** and at least **five non-geographic numbers per person**. This is presently not the case with the current plan. Moreover the mobile numbering capacity is being consumed very rapidly.

2.3 The public was invited to submit its comments on the Consultation document.

2.4 Comments were received from five different sources. These were presented and analysed during the open house session formerly organized by the Authority.

### **3.0 WORKING COMMITTEE**

3.1 A working committee, chaired by the Ministry of Information Technology and Telecommunication (MITT), was set up to identify key issues in the Numbering Plan and make recommendations on their implementation.

3.2 The following was approved:-

- (i) The adoption of a National Numbering Policy;
- (ii) The migration to 8-digit Numbering Plan on 1<sup>st</sup> January 2007 when MT would have replaced its NEAX switches;
- (iii) The implementation of call-by-call selection of ILD operators by 1<sup>st</sup> March 2004;
- (iv) The implementation of carrier pre-selection by Mauritius Telecom by 1<sup>st</sup> January 2007 and by mobile operators by 1<sup>st</sup> January 2005 or such earlier time as may be technically feasible.

3.3 The migration to 8-digit Numbering Plan was approved to be implemented on 1st January 2007, as follows:-

- (i) A leading digit '2' is to be added in front of all fixed numbers;
- (ii) A leading digit '7' is to be added in front of all mobile numbers;
- (iii) The digit '1' is to be added after '800' in all freephone numbers 800-xxxx and similarly after '3xx' in special numbers 3xx-xxxx;
- (iv) The change is to be effected **with parallel running** i.e. subscribers will be able to dial both the existing '7' digit numbers and the new '8' digit numbers within a determined period. This is to minimise the number of misdiallings. **It is to be noted that parallel running during any major numbering change is recommended by the International Telecommunications Union (ITU).**

## **4.0 WHAT WILL THE MIGRATION TO AN 8-DIGIT PLAN BRING TO THE MAURITIAN ICT SECTOR?**

### **4.1 NUMBER CAPACITY**

- 4.1.1 Most importantly, the 8-digit numbering will give a coherent structure to the numbering plan. The 8-digit numbering plan is purely service based whereby distinct blocks of numbers are allocated to geographic (fixed-line) services, non-geographic (mobile) services, free-phone and premium rate services respectively.
- 4.1.2 The 8-digit numbering plan will cater for the high demand for non-geographic (mobile) numbering and provide adequate capacity for new entrants, including Mobile Virtual Network Operator (MVNO), should this concept be adopted in Mauritius.
- 4.1.3 The 8-digit numbering plan will have sufficient free numbering ranges to accommodate new services including Nomadic VoIP services.
- 4.1.4 The 8-digit numbering plan should in the future also cater for numbering requirements from non-residents who would wish to have a virtual presence in Mauritius to allow correspondents to call them more easily or cheaply.

### **4.2 EVOLUTIONARY POTENTIAL**

- 4.2.1 If the number of digits is increased, Mauritius will probably never have to increase its numbering capacity. This is subject to same being properly managed.

### **4.3 NON DISCRIMINATORY ACCESS**

- 4.3.1 With the proposed plan and the proposed allocating procedure, numbering is not expected to be a limiting factor as far as competition is concerned.
- 4.3.2 Hence with a good management of the numbering resource, the requirement of non-discriminatory access should be easily met.

### **4.4 USER FRIENDLINESS**

- 4.4.1 The proposed plan is fully service based.
- 4.4.2 The correct tariff information will be conveyed to the subscribers since tariff is now service dependent.
- 4.4.3 The migration path proposed (i.e. adding a leading digit in front of existing numbers) is not expected to be a burden for the general public.
- 4.4.4 Number portability between operators and location number portability will become a reality

## **5.0 COST OF IMPLEMENTATION**

- 5.1.1 Migrating to the 8-digit numbering plan will have cost implications for the operators, the regulator and also the consumers.
- 5.1.2 The operators will have to effect appropriate modifications (mainly software) on their switches. The operators and the regulator will also have to bear the cost of a thorough education/information campaign. The consumers on their part will have to bear the cost of changing their stationary (letter head, business cards, etc...), updating their address books and also the cost of informing their correspondents of the number change.
- 5.1.3 It is believed that the above costs, though real, will be for the benefit of the whole country as it will enable more efficient management of the numbering resource and also will enable the telecommunication industry to grow by enabling new technologies and new services to be introduced.

## **6.0 IMPLEMENTATION ISSUES – WHY IMPLEMENTATION HAS BEEN DELAYED?**

- 6.1 A number of technical implementation issues have been brought to the attention of Authority after the end of the initial consultation period. These issues pertained mainly to the difficulties involved with having parallel running during the migration to 8-digits. These difficulties were mainly due to the non-availability of free spare leading digits in the current Numbering Plan.
- 6.2 The Authority has for some time now been evaluating, with the collaboration of all operators, different possible solutions to the above mentioned difficulties.

## **7.0 THE WAY FORWARD – MIGRATING TO 8-DIGIT NUMBERING PLAN IN A TWO-PHASED APPROACH**

- 7.1 Considering the urgent need to increase the capacity of mobile numbers and the difficulties in migrating fixed numbers to 8-digits with parallel running, the Authority now proposes that the migration to 8-digits be undertaken in two phases. Migration of mobile (non-geographic) numbers is to be undertaken in the first phase and the migration of fixed (geographic) numbers is to take place in the second phase. This approach has been used and successfully implemented in other jurisdictions including Singapore and Brazil.
- 7.2 The main difficulty in the current numbering plan is to find a leading digit that will not create conflicts during parallel running of 7 and 8-digit mobile numbers, especially on fixed networks. Initially the leading digit ‘7’ has been retained for mobile numbers; however, as explained above, this lead to implementation issues.
- 7.3 The Authority has recently been informed that numbering range ‘5xx-xxxx’ will be relinquished by the end of **third quarter of 2009**.

**7.4 By migrating mobile numbers to the 8-digits numbers starting with ‘5’, no conflict is foreseen.**

**7.5 It is the considered opinion of the Authority that given the complexity of a change in the numbering plan and the associated disruption that same may entail in people’s habit, migration to 8-digit may hardly be conceived without a parallel running period.** (For example business customers may require enough time for reprogramming their PBXs. Moreover, a hard cut-off solution may result in high levels of misdialling, including on incoming international calls). This is one of the many reasons for which the Authority believes that it is better to defer migration to 8-digits on fixed networks until such time that a solution to implement parallel run be found.

7.6 The Authority is also of the view that adopting a two-phased approach in the implementation of the 8-digit numbering plan has several advantages, including the following:-

- (a) the two-phased approach will simplify the information campaign as only one service will be targeted at a time;
- (b) it is expected that this approach will create less confusion for the consumers;
- (c) migration of the fixed numbering plan will also entail the migration of toll-free and special numbers to 8-digits, this may have the effect of confusing the population to a larger extent; and,
- (d) as noted above, a change in numbering plan is a complex exercise and since the last change from 6 to 7 digits which occurred nearly twenty years ago, the number of services and the number of subscribers have increased dramatically. A two-phased approach is, in the view of the Authority, more prudent. The first phase of the exercise will enable the Authority, the operators as well as the consumers to draw lessons so that any unforeseen problem that may be encountered is not repeated in the second phase.

## **8.0 IMPLEMENTATION GUIDELINES FOR MIGRATION TO 8-DIGIT NUMBERING PLAN FOR MOBILE NUMBERS**

**8.1 In establishing the following guidelines, the ICT Authority aims at setting forth a smooth, well-coordinated and timely approach to the implementation of the 8-digit Numbering Plan for the Mobile Service.** The guidelines set out in this document are intended to assist stakeholders in taking appropriate measures and precautions so that, at the time of change, the new Numbering Plan may be adopted with minimal difficulty.

8.2 While this document endeavours to address all key issues pertaining to the implementation of 8-digit Numbering Plan for Mobile Service, some of them may have been inadvertently missed out. The Authority relies on the cooperation of stakeholders to take any other measures they may deem necessary for this major event.

8.3 These guidelines should be read and adopted by the following parties:-

- Access providers (PLMN, PSTN);
- Other Operators/ Service Providers (ILD Operators, ISPs, etc.);
- Companies/ Individuals

## 8.4 NEW 8-DIGIT FORMAT FOR MOBILE NUMBERS

As explained above, a leading digit '5' will be added in front of all existing mobile numbers. Table 10.1 gives the conversion between the existing seven digits and the new eight digits mobile numbers.

Existing Mobile Range (7-digits)	New Mobile Range (8-digits)
25x-xxxx	5 25-xxxxx
421-xxxx	5 42-1xxxx
422-xxxx	5 42-2xxxx
423-xxxx	5 42-3xxxx
428-xxxx	5 42-8xxxx
429-xxxx	5 42-9xxxx
49x-xxxx	5 49-xxxxx
87x-xxxx	5 87-xxxxx
7xx-xxxx	5 7x-xxxxx
9xx-xxxx	5 9x-xxxxx

**Table 10.1:** Conversion between existing and new mobile ranges

## 8.5 IMPLEMENTATION DATE

8.5.1 The implementation of 8-digit Numbering Plan for Mobile Service will take effect as from the **1<sup>st</sup> of November 2009**.

## 8.6 IMPLEMENTATION PROCEDURES

8.6.1 The migration to 8-digit for the Mobile Service will be effected with parallel run i.e. a transitional period will be allowed, during which both 7-digit and 8-digit numbering will co-exist.

8.6.2 The migration will occur in the following three stages:-

8.6.2.1 **Stage 1 (Duration: 2 months):** Both 7-digit and 8-digit dialling allowed. For users dialling 7-digit number, an announcement is played prior to call being successfully terminated. No announcement played for user dialling 8-digit; calls are successfully terminated.



8.6.2.2 The texts of announcement will be as follows:

English Version: *“Your call is being processed, please note that the mobile numbers are now of eight digits, for your next calls dial ‘5’ before existing mobile numbers”*

French Version: *« Votre appel est en cours, veuillez noter que les numéros mobile sont passés à huit chiffres, pour vos prochains appels composez le ‘5’ avant les numéros mobile existants »*

8.6.2.3 **Stage 2** (Duration: 1 month): Only 8-digit dialling successfully terminated. However where a user dials 7-digit number, an announcement is played and call is hung up.

8.6.2.4 The texts of announcement will be as followed:

English Version: *“Please note that the mobile numbers are now of eight digits, try again by dialling ‘5’ before the mobile number you wish to call”*

French Version: *« Veuillez noter que les numéros mobile sont passés à huit chiffres, réessayez en composant le ‘5’ avant le numéro mobile que vous désirez appeler»*

8.6.2.5 **Stage 3:** Only 8-digit number successfully terminated. No announcement played in case of 7-digit dial.

## 8.7 IMPLEMENTATION CHECK LIST

### 8.7.1 Before Change

8.7.1.1 Communication of number change by the ICT Authority to the ITU one year prior to change- Tentative date **31 October 2008;**

8.7.1.2 Announcement of Numbering Plan Change by ICT Authority to the public at one year before change- Tentative date **31 October 2008;**

8.7.1.3 Aggressive Education Campaign to be initiated by ICT Authority at least 6 months before change- Tentative date **1<sup>st</sup> May 2009;**

8.7.1.4 Communication Campaign to be initiated by operators/service providers at least 6 months before change- Tentative date **1<sup>st</sup> May 2009;**

8.7.1.5 Communication of number change by operators/service providers to international partners at least 6 months before change- Tentative date **1<sup>st</sup> May 2009;**

8.7.1.6 Modifications on networks elements such as switching systems, billing platforms (reconfiguration, software upgrades, etc.) by

operators/service providers to be started at least 6 months before change- Tentative date **1<sup>st</sup> May 2009**;

8.7.1.7 Companies and Individuals to change numbers on their exiting brochures, business cards, etc.

8.7.1.8 Reprinting of Prepaid Cards to be effected by operators/service providers. To take into consideration expiration date;

*8.7.2 On Date of Change:*

8.7.2.1 Mobile Operators to switch to 8-digit numbering (both 7 and 8 digits) as per above procedures;

8.7.2.2 PSTN and ILD operators to open the new codes on their respective networks;

8.7.2.3 Mobile Customers to change the numbers in address book;

8.7.2.4 Prescribed announcements to be played by operators in case of 7-digit dialling;

8.7.2.5 End users to adopt 8-digit dialling;