

Government of India
Ministry of Communications & IT
Department of Telecommunications
(Access Services Wing)
Sanchar Bhawan, Ashoka Road, 20, New Delhi-110001

No. 16-16/2009-AS.III/49

Dated : 21-03-2012

To

The Secretary
Telecom Regulatory Authority of India
Mahanagar Doorsanchar Bhawan,
Jawaharlal Nehru Marg, Old Minto Road,
New Delhi-110002

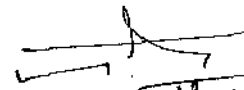
Subject : TRAI Recommendations on "Efficient utilization of Numbering Resources" dated 20-08-2010- Regarding

This has reference to TRAI recommendation on "Efficient utilization of Numbering Resources" issued vide letter dated 20-08-2010.

2. The recommendations of TRAI were considered by DoT. Prima-facie comments of the DoT on these recommendations are enclosed as annexure-A.
3. In the matter, additional observations of DoT are enclosed as Annexure-B for re-consideration of TRAI.

It is requested that response of TRAI may be sent to DoT at the earliest.

o/c


21/03/12

(Rajiv Kumar)
Director (AS-III)

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Observations of DoT vis-à-vis the recommendations of TRAI on “Efficient utilization of Numbering Resources” dated 20-08-2010

S.No.	TRAI Recommendations	Comments of DoT
(1)	<p>TRAI'S Recommendation 1 (as per Summary of Recommendations, Chapter IV) and Para 2.8 of main body-</p> <p>“The Authority recommends that 10-digit numbering scheme should be continued with the modification suggested in recommendations below.”</p> <p>(i.e. as suggested in other parts of these recommendations)</p>	<p>(a) DoT agrees to the recommendation that the 10 digit numbering scheme should be continued.</p> <p>(b) However regarding the modifications suggested in Para 2.8 of the said TRAI recommendations to create a large numbering space by prefixing ‘0’ to calls from fixed to mobile within the same service area, the following is noted:</p> <p>(i) All Wireline subscribers will have to be provided with dynamic STD facility, in order to access intra service area mobile calls.</p> <p>(ii) In rural areas where all subscribers are not enough aware to use dynamic STD, will face problem in dialing mobile call with mandatory prefixing of “0” in case of intra-service area calls.</p> <p>(iii) TRAI has observed in Para 2.11 of its recommendations, “---This would be another blow to the already struggling fixed line market---“.</p> <p>(iv) As detailed in the annexure (A-I to A-IV) enclosed, additional capacity of 550 Millions by using working STD codes of Level 7 & 8 can be generated. Further 100 Million is envisaged by using spare STD code 70. Thus total of 650 Million will be available as additional capacity for Wireless. Considering the Wireless growth of 15-20 Million per month, the 650 Million capacity will cater for next almost 30 months.</p>

(v) The Wireline subscriber base of all operators in different levels for March 2011 as per TRAI data is as below :

Sr. No.	Operator	Subs Base	Level Used	Net Addition in March 2011
1	BSNL	25224905	2	-153131
2	MTNL	3463969	2	5570
3	Bharti	3295919	4	15261
4	Reliance	1234191	3	2131
5	TATA	1282437	6	-6742
6	HFCL	189900	5	957
7	Sistema	38440	5	403

From the above table, it is clear that the numbering resources earmarked for Wireline subscribers are grossly underutilized.

(vi) It is therefore felt that some of the levels allocated for basic services can be withdrawn by asking the TSPs to share certain levels. The spared levels can be used for mobile services. The numbering levels which should be retained for basic service operations need to be determined.

The annexure (A-I to A-IV) enclosed shows the typical availability of numbering resources after sparing level 5, 6 & 3 from Wireline service providers in phased manner as an example as below:

S.No.	Level Spared	Capacity Generated
1	Level 5	947.5 Million
2	Level 6	1004.5 Million
3	Level 3	798.9 Million
Total		2750.9 Million

(vii) The allocation of Wireline numbering resource may be done to service providers for those SDCA's where Wireline service is to be started i.e. the numbering level to licensees should be allocated SDCA wise instead of PAN-India basis. Implementation

		<p>plan for the same need to be evolved.</p> <p>(c) In view of above, TRAI may re-consider its recommendation of creating extra numbering space by prefixing '0' to calls from fixed to mobile within the same service area and also explore possibility of creating extra numbering space for Mobile services by vacation of levels from the current allocations for Basic Service through migration of subscribers to other levels/sublevels. Recommendations in this regard may be provided by TRAI.</p>
(2)	<p>(a) TRAI'S Recommendation 2 (as per Summary of Recommendations, Chapter IV) and Para 2.26 of main body-</p> <p>"The Authority recommends that the country should migrate to an integrated 10-digit numbering scheme at the earliest. All preparations should be complete by 30th September 2011 and actual migration to the integrated scheme be completed by 31st December, 2011"</p> <p>(b) TRAI'S Recommendation 3 (as per Summary of Recommendations, Chapter IV) and Para 2.27 of main body-</p> <p>"Detailed integrated numbering, routing plans and interconnection architecture would be worked out by TRAI after acceptance of recommendations by DoT. If required, a</p>	<p>(a) Regarding migration to integrated numbering scheme following is noted:</p> <p>(i) Barring USA, no other major country is following integrated numbering scheme.</p> <p>(ii) Making National (Significant) Number [N(S)N] as Subscriber Number (SN) (as recommended by TRAI), will lead to change in dialing scheme. Then, Wireline Customer shall have to dial 10-digit number even to get a local call instead of 6, 7 or 8 digits at present.</p> <p>(iii) Implementation of porting between fixed and mobile numbers is an issue to be examined separately at an appropriate time and that may not be a reason for affecting integrating numbering scheme</p> <p>(iv) A lot of changes are required to be done in Wireline exchanges for 10-digit integrated numbering and it will have impact on call routing also. In C-DOT and other legacy Wireline exchanges, it is not possible to implement 10-digit integrated numbering. This will immediately and adversely affect Rural Telephony. As mentioned at 1(b) (iii), above, this would also be another blow to already struggling fixed line market.</p> <p>(v) 10-digit integrated numbering scheme will also require changes in billing (including inter operator) system, operation support system etc.</p>

	<p>separate consultation would be carried out.”</p>	<p>(vi) TRAI has observed that one of the methods (i.e. to merge the SDCA code with the subscriber number and form a 10-digit number for fixed line)) for implementation of 10 digits integrated numbering will not change subscriber number. But it is noted that all SDCA codes of Level ‘1’ will have to be shifted to other levels to avoid overlapping of 10-digit subscriber number with Level 1 service codes. Further, dialing national long distance calls without prefix “0” is not supported by legacy exchanges of the Wireline network. In response to TRAI observation that a uniform space of 8 billion numbers would be available, it is noted that since subscriber number remaining unchanged, the utilisation of numbering space shall be restricted. Method 2 (i.e. to identify one or more unique codes for each service area/circle and fill up the remaining digits to make a 10 digit number) of implementation of integrated numbering is not supported even in the TRAI recommendations because of large scale changes in the numbers.</p> <p>(b) In view of above, TRAI may re-consider its recommendation regarding migration to integrated numbering scheme</p>
(3)	<p>TRAI’S Recommendation 4 (as per Summary of Recommendations, Chapter IV) and Para 2.33 of main body-</p> <p>“The Authority recommends that in the intervening period, till integrated numbering scheme is implemented, the following scheme should be adopted to create sufficient numbering space:</p> <p>(i) No change in dialling plan of fixed to fixed, inter-circle fixed to mobile and mobile to mobile</p>	<p>(a) Observations of DoT vis-à-vis recommendations of TRAI at Sl. No. 1 and 2 above may kindly be seen.</p>

	calls. (ii) Dial intra circle fixed to mobile calls with prefix '0' (iii) Existing SDCA codes starting with 2, 3, 4 and 6 may be used for mobile services by suffixing with 0, 1, 8 and 9."	
(4)	<p>TRAI'S Recommendation 5 (as per Summary of Recommendations, Chapter IV) and Para 2.34 of main body-</p> <p>-</p> <p>"The Authority recommends that codes defined as spare in the National Numbering Plan 2003 should be kept spare till the new numbering plan consisting of integrated numbering scheme is notified."</p>	<p>(a) Observations of DoT vis-à-vis recommendations of TRAI at Sl. No. 1 and 2 above may be seen.</p> <p>(b) DOT had already started allocating spare STD codes to Service Providers for Wireless services since long. Spare STD codes in level '7' and level '8' has already been consumed.</p>
(5)	<p>TRAI'S Recommendation 6 (as per Summary of Recommendations, Chapter IV) and Para 3.6 of main body-</p> <p>"The Authority recommends that the present arrangement for allocation of new blocks of numbers after demonstrating 80% utilization for fixed and 60% for mobile should be continued. However, in case of mobile numbers, service provider should not have more than 3 million unutilized numbers in a service</p>	<p>It was observed that there is a significant difference between the HLR figures and VLR figures of the mobile subscriber base. It is because the TSPs normally keep permanently inactive customers in HLR for long time and effective re-cycling of these numbers is not being done. Hence, DoT felt that in order to exercise better control of the scarce numbering resource, the allocation of MSC codes on the basis of VLR figures is better than the practice of allocation of new MSC codes based on HLR figures.</p> <p>In view of above, <u><i>The allocation criteria has already been changed from HLR based to VLR based as per DoT instructions dated 26.07.2011 (copy attached for ready reference as annexure-A-V)</i></u></p>

	area at the time of requesting for new block of numbers.”	
(6)	<p>TRAI'S Recommendation 7 (as per Summary of Recommendations, Chapter IV) and Para 3.8 of main body-</p> <p>“The Authority recommends that the details given by the mobile service providers for allocation of fresh block of numbers should be converted into an annual return consisting of the details already included and in addition details of numbers ported in and out, utilization of short codes and other codes and annual forecast for 3 years. In addition to annual submission, this return should be submitted every time the service providers make a request for fresh block of numbers.”</p>	<p>(a) DoT agrees to TRAI recommendation regarding implementation of scheme of filing annual return for numbering resources.</p> <p>(b) Presently, there is no effective way to check the spare numbers/closed numbers from the allocated number-levels to the service providers. A mechanism is to be developed so that the numbers which have been closed/inactive for more than a certain pre-defined period may be 'permanently closed' and again be allocated to a new customer.</p> <p>(c) The annual return format should be able to resolve the problem of non deletion of the inactive numbers on the pretext of treating it as "commercially live".</p> <p>(d) TRAI may give its recommendation on detailed procedure to be followed for implementing scheme of 'annual return for numbering resources' and for development of a mechanism so that the numbers which have been closed/inactive for more than a certain pre-defined period may be 'permanently closed' and again be allocated to a new customer.</p>
(7)	<p>TRAI'S Recommendation 8 (as per Summary of Recommendations, Chapter IV) and Para 3.11 of main body-</p> <p>“The Authority recommends that automated allocation</p>	<p>(a) DoT agrees to TRAI recommendation of automated allocation of numbering resources. However, it will require development of suitable software to guard against its misuse.</p>

	of numbering resources should be introduced along with proper checks and balances.”	
(8)	<p>TRAI’S Recommendation 9 (as per Summary of Recommendations, Chapter IV) and Para 3.12 of main body-</p> <p>“All allocated short codes, Mobile Switching Center (MSC) codes, Service Control Point (SCP) codes and exchange levels should be put on website to maintain transparency.”</p>	(a) DoT agrees to TRAI recommendation of uploading the data-base of allocated numbering resources on DoT web-site.
(9)	<p>TRAI’S Recommendation 10 (as per Summary of Recommendations, Chapter IV) and Para 3.16 of main body-</p> <p>“TRAI should be entrusted with the task of administering numbering plan to enable it to carry out all works relating to formulation of and amendments to numbering plan, allocation of numbers and ensuring effective utilization of numbers. (Para 3.16)”</p>	(a)DoT is of the opinion that the present arrangement should continue, i.e. administration of numbering resources will continue to be done by DOT.

(Sample calculation to estimate the typical availability of mobile number resources after sparing level 5 from wire-line service providers) Annexure-A-I

At present land line numbers of level 5 have low utilisation. These numbers can be shifted to a single level say 'Level 4' so that level 5, can also be utilised for mobile numbers.

A. Spare STD codes of level 5 can be utilised for mobile numbers as shown below:

Using 2 digit spare STD code 50 : 5000000000 to 5099999999 : 100 M numbers

Using 3 digit STD code 513: 5130000000 to 5139999999 : 10 M numbers

Using 4 digit STD code 5141:5141000000 to 5141999999 : 0.1 M numbers

Level	2-digit spare code	Mobile Numbers in Million	3-digit spare code	Mobile Numbers in Million	4-digit spare code	Mobile Numbers in Million	Total Mobile Numbers in Million
5	1	100	32	320	211	211	631
Total	1	100	32	320	211	211	631

B. Working STD codes of levels 5 can be utilised for mobile numbers as shown below:

2 digit PLMN Access Code	3 Digit MSC Code	5 Digit subscriber Number
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Using 2 digit STD code 33 followed by digit 9 :3390000000 to 3399999999 : 10 M numbers

Using 3 digit STD code 731 followed by digit 3:7313000000 to 7313999999 : 1M numbers

Using 4 digit STD code 7324 followed by digit 6: 732460000 to 7324699999 : 0.1 M numbers

Following table shows the number of mobile numbers can be possible by utilising levels 5

Level	2-digit working code	Numbers using digits 5, 7, 8, 9, 0 in Million	3-digit working code	Numbers using digits 5, 7, 8, 9, 0 in Million	4-digit working code	Numbers using digits 5, 7, 8, 9, 0 in Million	Total Mobile Numbers in Million
5	0	0	14	70	218	109	179
Total	0	0	14	70	218	109	179

Refer Calculation regarding availability of additional numbering space due sparing of single sub level '5' in working STD codes of 7 & 8

137.5

Total Mobile Numbers (in millions) possible with the release of landline level 5:

947.5

After vacating Level '5' , Level '6' can be vacated

(Sample calculation to estimate the typical availability of mobile number resources after sparing level 6 from wire-line service providers) Annexure-A-II

A. Spare STD codes of level 6 can be utilised for mobile numbers as shown below:

Using 2 digit spare STD code 60 : 6000000000 to 60999999999 : 100 M numbers are possible

Using 3 digit STD code 623: 6230000000 to 6239999999 : 10 M numbers are possible

Using 4 digit STD code 6133: 6133000000 to 6133999999 : 1M numbers are possible

Level	2-digit spare code	Mobile Numbers in Million	3-digit spare code	Mobile Numbers in Million	4-digit spare code	Mobile Numbers in Million	Total Mobile Numbers in Million
6	2	200	29	290	103	103	593
Total	2	200	29	290	103	103	593

B. Working STD codes of levels 6 can be utilised for mobile numbers as shown below:

2 digit PLMN Access Code	3 Digit MSC Code	5 Digit subscriber Number
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Using 2 digit STD code 33 followed by digit 9 :3390000000 to 33999999999 : 10 M numbers

Using 3 digit STD code 731 followed by digit 3:7313000000 to 7313999999 : 1M numbers

Using 4 digit STD code 7324 followed by digit 6: 732460000 to 7324699999 : 0.1 M numbers

Following table shows the number of mobile numbers can be possible by utilising levels 5 & 6

Level	2-digit working code	Numbers using digits 5, 6, 7, 8, 9, 0 in Million	3-digit working code	Numbers using digits 5, 6, 7, 8, 9, 0 in Million	4-digit working code	Numbers using digits 5, 6, 7, 8, 9, 0 in Million	Total Mobile Numbers in Million
6	0	0	11	66	287	172.2	238.2
Total	0	0	11	66	287	172.2	238.2

Refer Calculation regarding availability of additional numbering space due sparing of single sub level '6' in working STD codes of 7 & 8 137.5

Additional Numbering Space due to sparing of Lv 6 in working STD code of Lv 5 35.8

Total Mobile Numbers (in millions) possible with the release of landline level 5 and 6: 1004.5

After vacation of Level '5' & '6', Level '3' can also be spared.

(Sample calculation to estimate the typical availability of mobile number resources after sparing level 3 from wire-line service providers) Annexure-A-III

A. Spare STD codes of level 3 can be utilised for mobile numbers as shown below:

Using 2 digit spare STD code 39: 3900000000 to 3999999999 : 100 M numbers

Using 3 digit STD code 388: 3880000000 to 3889999999 : 10 M numbers

Using 4 digit STD code 3171: 3171000000 to 3171999999 : 1 M numbers

Level	2-digit spare code	Mobile Numbers in Million	3-digit spare code	Mobile Numbers in Million	4-digit spare code	Mobile Numbers in Million	Total Mobile Numbers in Million
3	1	100	1	10	135	135	245
Total	1	100	1	10	135	135	245

B. Working STD codes of levels 3 can be utilised for mobile numbers as shown below:

2 digit PLMN Access Code	3 Digit MSC Code	5 Digit subscriber Number
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Using 2 digit STD code 33 followed by digit 9 : 3390000000 to 3399999999 : 10 M numbers

Using 3 digit STD code 731 followed by digit 3: 7313000000 to 7313999999 : 1M numbers

Using 4 digit STD code 7324 followed by digit 6: 732460000 to 7324699999 : 0.1 M numbers

Following table shows the number of mobile numbers can be possible by utilising levels 3

Level	2-digit working code	Numbers using digits 3, 5, 6, 7, 8, 9, 0 in Million	3-digit working code	Numbers using digits 3, 5, 6, 7, 8, 9, 0 in Million	4-digit working code	Numbers using digits 3, 5, 6, 7, 8, 9, 0 in Million	Total Mobile Numbers in Million
3	1	70	19	133	197	137.9	340.9
Total	1	70	19	133	197	137.9	340.9

Refer Calculation regarding availability of additional numbering space due sparing of single sub level '3' in working STD codes of 7 & 8

137.5

Additional Numbering Space due to sparing of Lv 3 in working STD code of Lv 5 & 6

75.5

Total Mobile Numbers possible with the release of landline level 3:

798.9

(summary of Sample calculation as above to estimate the typical availability of mobile number resources after sparing level 5, 6 & 3 from wire-line service providers in phased manner) Annexure-A-IV

S.No	Report	Level	Working/ Spare STD codes	Sub Level(First digit of number as local number	Numbering Space (in Million)	Cumulative (in Million)	Remarks
1	Interim	7*	Spare	0 to 9	100.0	100.0	7 is not used as first digit in landline
2	Interim	7 & 8	Working	9, 8, 0	412.5	512.5	
3	Interim	7 & 8	Working	7	137.5	650.0	
4	Final Ph I	5	Spare	0 to 9	631.0	1281.0	Only 228340 landline customers of HFCL & Sistema are working
5	Final Ph I	5	Working	5,7,8,9,0	179.0	1460.0	
6	Final Ph I	7 & 8	Working	5	137.5	1597.5	
7	Final Ph II	6	Spare	0 to 9	593.0	2190.5	1282437 landline customers of TATA are working
8	Final Ph II	6	Working	5,6,7,8,9,0	238.2	2428.7	
9	Final Ph II	7 & 8	Working	6	137.5	2566.2	
10	Final Ph II	5	Working	6	35.8	2602.0	
11	Final Ph III	3	Spare	0 to 9	245.0	2847.0	1234191 landline customers of Reliance are working
12	Final Ph III	3	Working	3,5,6,7,8,9,0	340.9	3187.9	
13	Final Ph III	7 & 8	Working	3	137.5	3325.4	
14	Final Ph III	5 & 6	Working	3	75.5	3400.9	

* Note : Only 70 is taken into consideration as other spare STD codes of Level 7 are being used for allocation

Government of India
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(Access Services Wing)
Sanchar Bhawan, Ashoka Road, 20, New Delhi-110001

Annexure - A-V

No. 16-16/2009-AS.III/(38)/576

Dated : 26th July 2011

To

All Access Service Providers

Subject : Issue of MSC codes on the basis of VLR data instead of HLR data – regarding.

In supersession of the DoT letter dated 7.02.2011 wherein instructions were issued to all Access Service Providers on the above subject, the undersigned has been directed to issue following instructions with immediate effect :

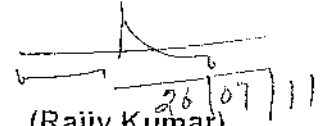
- (i) The new MSC codes will be issued on the basis of VLR figure.
- (ii) The total VLR figure (to be enclosed with requisition for new MSC codes) should be certified by concerned TERM Cell(s).
- (iii) The Access Service Provider(s) will first approach the respective LSA TERM cell for certification of VLR figures and then submit their requisition for MSC codes to DoT, HQ enclosing therewith the TERM cells' certified figures.
- (iv) The VLR database purging period should be fixed at 72 hours maximum.
- (v) The criteria for allocation of new MSC Codes is as below :
 - (a) Both attached and detached VLR figures are to be taken into account (added) to calculate the total VLR figure.
 - (b) Further in case of intra-circle roaming agreements, the intra-circle out-roamers shall be added whereas intra-circle in-roamers should be deducted to arrive at net VLR figures.
 - (c) To add further clarification, inter-circle in-roamers (of any operator) will be part of VLR figures while inter-circle out-roamers will not be counted (neglected).
 - (d) The VLR figures may be taken as average of 7 days VLR count.
 - (e) MSC codes will be issued if the VLR figure reaches the count (taking para (a) to (d) into account as below :


26/07/11

S. No.	Numbers Allocated (N)	VLR Figure (V) as %age of Number Allocated (V/N)	N-V
1.	Less than 3 Million	Subject to minimum of 40%	Not Applicable
2.	3 Million & less than 6 Million	Subject to minimum of 45%	Not Applicable
3.	6 Million & less than 8 Million	Subject to minimum of 50%	Not Applicable
4.	8 Million	Subject to minimum of 55%	Not Applicable
5.	9 Million	Subject to minimum of 60%	Not Applicable
6.	10 Million & less than 15 Million	Subject to minimum of 63%	Not Applicable
7.	15 Million & More	Not Applicable	Less than or equal to 5.5 Million

N = Numbers allotted

V = VLR figure.



(Rajiv Kumar)

Director (AS-III)

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Copy to

- (i) Secretary (TRAI), Mahanagar Doordsanchar Bhawan, Jawaharlal Nehru Marg, (Old Minto Road), New Delhi-110002
- (ii) Sr. DDG, Telecom Engineering Centre, Gate No. 5, Khurshid Lal Bhawan, Janpath, New Delhi – 110001.
- (iii) DDsG of all TERM Cells with a request to also send the certified figures directly to Director (AS.III). LSA TERM Cell will coordinate with other TERM Cell in LSA.
- (iv) COAI/ AUSPI
- (v) CMD, MTNL/ CMD, BSNL.
- (vi) Director (Security-I), Security-TERM Cell
- (vii) Director (IT), DoT for uploading on web-site

Additional observations of DoT regarding 'efficient utilization of numbering resources' for consideration of TRAI

- (a) Service providers express inability to delete customers from HLR on account of contractual obligations such as "Life Time" Plan etc., therefore there is an urgent need for service providers to determine "permanently inactive" customers in HLR database so as to remove and recycle such numbers. This aspect is very important for efficient utilization of numbering resources and needs immediate attention. TRAI may give its recommendations regarding procedure for identifying disconnected (service expired connections) and inactive customers and also misc. expired connections and eventually deleting the same from customer base.
- (b) TRAI in its recommendations has mentioned the issue of "Pricing of Numbering Resources". TRAI may give specific recommendations in this regard.
- (c) It appears that level '92' and level '93' which were allocated for CDMA customers are not being utilized efficiently. TRAI may consider the matter and give recommendations regarding part utilization of '92' and '93' levels for GSM customers.