RJIL/TRAI/2024-25/113

01st August 2024

To,

Shri Abdul Kayum,

Advisor (Broadband and Policy Analysis)

Telecom Regulatory Authority of India,

Tower-F, World Trade Centre,

Nauroji Nagar, New Delhi - 110029

Subject: **RJIL's comments on TRAI's Consultation Paper on "Revision of National Numbering Plan".**

Dear Sir,

Please find enclosed the comments of Reliance Jio Infocomm Limited (RJIL) on the Consultation Paper dated 06.06.2024 on **"Revision of National Numbering Plan"**.

Thanking you,

Yours Sincerely,

For **Reliance Jio Infocomm Limited**

Kapoor Singh Guliani

Authorized Signatory

Enclosure: As above

Reliance Jio Infocomm Limited's comments on TRAI's Consultation Paper on "Revision of National Numbering Plan" dated 6th June 2024

Preface:

1. Reliance Jio Infocomm Limited (RJIL) thanks the Authority for giving an opportunity to offer comments on the important consultation paper on **Revision of National Numbering Plan**.

2. At the outset, we submit that it is apt time to examine all aspects impacting the allocation and utilization of numbering resources in view of the current disparity where stringent assignment criterion has been imposed on the services most in use, while large number banks are lying unutilized.

3. We submit that numbering resources or Telecommunication Identifiers (TI) are key inputs for providing effective and efficient telecom services and there is a need to break the cycle of piecemeal approach and devise strategies for effectively unlocking the numbering potential. **India has adopted a 10-digit numbering scheme and potentially we can have 9 billion unique TIs, however, we are perennially struggling to meet the numbering requirements of a market of around billion users.**

4. The Authority and Government are aware of these issues and in past more than one consultation have already taken place to address the issue, however, fundamental issues still remain due to policy decision to adopt SDCA based basic Numbering Plan Area (NPA) system for fixed services. The underlying technological compulsions of traditional Time Division Multiplexing (TDM) based circuit switched networks are no longer in play due to evolution of technology and time has come to move forward from this numbering scheme.

One Nation One Number

5. **National Digital Communications Policy – 2018, under its Propel India mission strategy of Catalysing Investments for Digital Communications sector,** seeks to simplify and facilitating compliance obligations by

    Creating a regime for fixed number portability to facilitate one nation – one number including portability of toll free number, Universal Access numbers and DID numbers

6. We firmly believe that Unified Numbering Scheme i.e. 10-digit numbering for both fixed and mobile numbers is the only way to achieve this goal of NDCP-2018. **It is further stated that all the conditions precedent for delivering on unified numbering are already**

present viz. domestic IUC has moved to Bill and Keep regime; domestic roaming charges have become a thing of past; even the legacy fixed line operators have migrated to soft switches IP-based technologies; and SDCAs are now only a notional and nominal switching unit whose functions have already been centralized.

7. **Further, we are moving ahead for providing voice, non-voice, and data services within the country through satellite systems. Such subscribers should also follow 10-digit numbering scheme for mobile subscribers.**

8. Thus, there is no justification for any further delay in the implementation of **One Nation One Number through Unified Numbering scheme**. Objectively speaking, this is the only long-term solution to resolve the perennial numbering crunch and its salubrious benefits far exceed all other suggestions to address this crunch, as discussed in consultation paper. The Authority had previously recognized this as a feasible, plausible, and least disruption solution for the consumers, that will resolve the numbering related issues for at least next 25-30 years.

9. The Authority in its Recommendations on Efficient Utilization of Numbering Resources dated 20th August 2010 had already recommended 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. This view was subsequently reiterated by the Authority in its response dated 11th May 2012 to DoT back-reference on the issue.

10. Pertinently, the implementation of the Unified Numbering scheme would also lead to achieving the second part of the aforementioned NDCP-2018 goal. The 10-digit numbering with removal of SDCA-LDCA structure would have galvanizing impact on the fixed line number portability (FNP), fixed-mobile portability (FMNP) and fixed-mobile convergence, **that would introduce competition in the sector and deliver the benefits of technology to the subscribers, while at the same time impart sufficient agility to fixed line services.**

11. We submit that the Unified Numbering Scheme can be implemented in a very simplistic manner. As noted by the Authority, currently, the users vis-à-vis numbers allocated ratio is heavily skewed in favor of the fixed line. **While there are less than 2.1 billion numbers available for close to 1 billion mobile users, there are over 4.9 billion numbers reserved for around 40 million fixed line connections in the country.**

12. In order to make the Unified Numbering scheme least disruptive, we propose to keep the mobile numbers, which constitute 96% of total telecom consumer numbers, unchanged.

In order to adjust the fixed line numbers under this scheme, we propose that the STD code identifier should be merged in these numbers.

13. Level 0 and spare codes of Level 1 will be kept reserved and continue to be allocated for long distance, special services respectively. With the advent of digital services and all content related services being available through apps, the need of reserving Level 5, for short codes for other services has also lost relevance and this level can also be used for Unified Numbering.

14. Subsequent to merging the SDCA code with Fixed numbers, the Fixed line Location Routing Number (FLRN) can be used to ensure smooth routing arrangements. This measure will not only address the numbering crunch, it will also help achieve the NDCP-2018 goal of 'One Nation One Number' and portability of all numbers whether Fixed, mobile or IN.

15. We submit that the above solution is the most optimum to the resolve the numbering crunch for next 25-30 years. We are ready to further explain this to the Authority and to implement the same.

All Call Query based calling for Fixed line Numbers

16. We further submit that in an eventuality this permanent fix of unified numbering scheme cannot be implemented due to any reason, then instead of piecemeal solutions, it would be critical to release the locked numbering inventory at fixed line levels by making the same available to all type of usage.

17. Under this solution, the dialing pattern of the customer will not change, but the originating fixed network will need to do some extra work. We are taking a leaf out of routing of ported mobile numbers and extending it to fixed line. However, in this case all currently assigned fixed numbers will be prefixed with a FLRN along with STD code and a database in line with MNP database will be created for fixed line as well.

18. **Thereafter, any outgoing call from a fixed network will dip into this database and will decide the routing basis an output that will inform him the LSA wise Fixed network and SDCA code to which the call is to be delivered. We have provided the detailed routing arrangements and FLRN creation in   issue wise response to the question no. 5.**

19. It is submitted that short of One Nation One Number, this is the most optimal solution to address the numbering resources. This will enable the Government to unlock all the unassigned numbers in each SDCA and re-assign the same basis utilization and requirements.

20. As unified numbering under the One Nation One Number is the ultimate goal, ACQ based solution will become a stepping-stone towards the same.

Number Assignment Criteria and other related issues

21. The number assignment criteria are introduced to ensure optimum utilization whenever there is a resource crunch. As we are going through numbering crunch for over a decade now, the criteria have already become very stringent and there is a need to simplify the same.

22. We submit that the current Visitor Location Register (VLR) based criteria for allocation of mobile numbering resources and utilization-based criteria for fixed numbers are not optimum. These are, in fact, byproduct of scarcity of numbering resources and do not take into consideration many market realities like higher market demand, demand spurts, evolving and expanding distribution networks and inventory requirements for maintaining an efficient supply chain of numbering. Further, the underlying processes are very lengthy and cumbersome as already explained in our response to consultation paper dated 20th September 2019 on "Developing a Unified Numbering Plan for fixed line and mobile services". We submit that there is an urgent need to relax the assignment for both fixed and mobile numbering resources at the earliest, in short term. Further, once the current numbering crunch is addressed, we can move to self-certification based numbering resource allocation criteria in the long term. There can be sample and random audits to verify the self-certified utilization.

23. Further, we are fortunately in a space where the number crunch can be removed easily by little effort by all stake holders. In this context, the suggestions like restrictions on bulk number assignment for solutions like PRI and SIP should be shunned, as these are market driven requirement, and regulations should facilitate market growth instead of curbing it.

24. The timelines to define inactive numbers and the timelines for reassignment of a deactivated number are too large and do not reflect market realities. We submit that these should be modified to facilitate better number management. We understand that an inactive number should be available for re-assignment within 90 days of number becoming inactive. Thus, there should be no cooling period for numbers deactivated due to over 90 days inactivity before being assigned to a new user. For all other type of deactivation, the number should be available for reassignment post a cooling off period of 60 days at most.

25. We do not support charging for numbering resources from TSPs, as this will be an anti-consumer measure, as mandated charge will most likely be passed onto the consumers. This will also impact the marginal customers, who are generally protected in regular

market driven tariff hikes. Furthermore, the Government anyways gets its revenue share from any revenue generated by the TSP by assigning preferential numbers, so there is no need to create double taxation type regime.

26. We do not see any possibility of numbering constraints in all other TIs discussed by the Authority, however, feel that the number assignment should be judicious and based on the market realities and should remove possibility of any consumer discomfit due to unnecessary overlapping of numbering resources, as is foreseen in assignment of MCC MNC codes being used for Captive Non-Public Networks (CNPNs).

27. Further, in order to promote competition in Fixed line sector and Intelligent network service, it is important that FNP, FMNP and IN number portability (INP) should be implemented. While FNP and FMNP will be contingent on the implementation of unified numbering scheme and dismantling of SDCA based structure, INP is relatively easier to implement and can be built on structure for porting of corporate mobile numbers.

28. **Conclusions**

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1. **The numbering crunch should be settled once and for all.**
2. **The optimum solution is migration to unified 10-digit numbering for fixed and mobile terrestrial and satellite networks.**
3. **This will remove the legacy SDCA based structure and pave the way for Fixed Number Portability, Fixed Mobile Portability.**
4. **In case it is felt to keep the dialing pattern unchanged for fixed line used, All Call Query based solution should implemented to unlock the numbering inventory in fixed levels.**
5. **There is no justification for charging the TSPs for numbering resources.**
6. **The number assignment criteria should be further liberalised.**
7. **There should be no curbs on assignment of bulk numbers for PRI and SIP services.**
8. **The Authority should expedite Fixed Line and IN number portability**

Issue wise response:

Q1 Are there any TI resource shortages envisaged in the near future due to the presently adopted SDCA based fixed line Telecom Identifier scheme? Is there a need to revise the criterion prescribed by DoT for allocation of additional Telecommunication Identifier (TI) resources for fixed line access services? Please provide answers with detailed justification.

RJIL Response:

1. Yes, the current SDCA based fixed line Telecom Identifier (TI) scheme is the crux of all the TI resource shortage related issued. It is a relic from the past, when call routing was necessarily based on Local Exchanges (LEs) acting as the pivotal switching hub.

2. As noted by the Authority, the traditional Time Division Multiplexing (TDM) based circuit switched networks have yielded to the evolution of technology, giving rise to IP-based packet-switched core networks. Therefore, now there is no need for such switching diversity and a single soft switch can replace a large number of TDM-based switches and it can actually meet the requirements of one or more LSAs.

3. Consequently, from technology perspective, SDCA based switches have become obsolete and no longer required, even BSNL now uses these as remote switching units of main exchanges that were located at more central locations.

4. However, the SDCAs continue to remain the basic Numbering Plan Area (NPA) for fixed line resources. This leads to massive underutilization of numbering resources as all sub-levels of a SDCA code become unavailable to be used elsewhere, as also endorsed by the Authority in the Consultation Paper, we are extracting and reproducing the relevant section herein below.

   Upon further examination of the SDCA-wise data provided by the DoT, it is evident that out of the total 2645, 58 SDCAs have '0' subscribers and 275 SDCAs have less than 100 fixed line subscribers (refer table 2.4below). Additionally, approximately 1722 out of 2645 SDCAs exhibit a utilization rate of less than 1%. Moreover, the combined utilization of numbering resources of TSPs in rest of the SDCAs has not yet surpassed the 50% utilization mark.

5. **Therefore, it is critical that the SDCA code-based numbering scheme should be abolished, and we should move towards a more practical Unified Numbering scheme.** The 10-digit numbering scheme for both mobile and fixed line services will unlock massive TI capacities at one go and would also enable the long pending reforms like FNP and FMNP, that will in turn increase the competition in Fixed line sector and will bring more investments.

6. Furthermore, the SDCA based interconnection for PSTN calls is already set to be phased out in compliance with TRAI Regulations. We submit that the Authority vide an amendment to Telecommunication Interconnection Regulations, 2018 dated 1st January 2018 has already mandated the same and it would be opportune for the IP networks to interconnect at a higher level i.e. LSA. We are extracting and reproducing the relevant extract for ready reference.

> *"9A. Level of interconnection for PSTN to PSTN connectivity:-----*
> *(1) Within a service area, the location of POI, for calls between PSTN and PSTN or between PSTN and NLD network, shall be at such place as may be mutually agreed between the interconnection provider and the interconnection seeker.*
> *(2) In case the interconnection provider and the interconnection seeker fail to agree under sub-regulation (1), the location of POI, for calls between PSTN and PSTN or between PSTN and NLD network, shall be at LDCC:*
> *Provided that carriage charge for carriage of calls from LDCC to SDCC and vice versa, as applicable, shall be paid by the interconnection seeker to the interconnection provider:*
> *Provided further that **the existing POIs at the SDCC level, for calls between PSTN and PSTN or between PSTN and NLD network, shall remain in operation for a period of at least five years or till such time the interconnected service providers mutually decide to close such POIs, whichever is earlier…***

7. Evidently, as the timeline of 5 years is close to be over, it is reasonable to expect that SDCA based interconnection will be moved to LSA based POIs. Therefore, the time is opportune to move POIs to LSA level.

8. As mentioned in the preface, the Authority has already recommended the migration to an integrated 10-digit numbering scheme at the earliest, in its Recommendations on Efficient Utilization of Numbering Resources dated 20th August 2010 and its response dated 11th May 2012 to DoT back-reference on the issue.

Q2 How can the (a) Spare SDCA codes and (b) Unused sub-levels out of the levels allocated to TSPs be best utilized to cater for future requirements of TIs for fixed-line access services? Please provide a detailed answer.
And
Q4 Will migrating to LDCA based TI scheme address the constraints in SDCA based fixed line TIs? Please provide answers with detailed justification.

RJIL Response:

1. We submit that measures like using spare SDCA codes; utilizing unused sub-levels out of the levels allocated to TSPs and migrating to LDCA based TI scheme have their limited utility. However, all of these require considerable efforts and will fall short of being a permanent solution.

   (a) **In utilization of spare SDCA codes,** there will be customer convenience as the dialing pattern will remain unchanged, however, the numbers freed will be limited and we will need to merge SDCAs with adjacent SDCA codes leading to change of SDCA codes.

(b) **In utilizing unused sub-levels out of the levels allocated to TSPs,** again there will be customer convenience in unchanged dialing pattern, however, DoT will be required to micro-manage the unused levels at SDCA level on continuous basis the availability cannot be assured, routing complexities for TSPs will increase, and the numbers freed will be limited.

(c) **Migration to LDCA level numbering,** will require multifarious changes, as detailed below:

    (i)   At customer level the dialing pattern will change

    (ii)   Switching level will be changed to LDCA leading to need fo significant efforts for inter-operator routing arrangements.

    (iii)   There will be changes required to handle emergency calls.

2. However, all the changes required for LDCA based routing will also suffice to facilitate the migrating to Unified 10-digit Numbering scheme, which will not only free up much higher numbering resources, while simultaneously opening up the path for forward looking steps of Fixed Number Portability, Fixed-Mobile Portability, and Intelligent Number- to Fixed/Mobile Number portability. Therefore, we do not support LDCA based routing and reiterate that 10-digit unified solution is the optimum long -term solution, achievable with almost same level of efforts required for migration to LDCA level numbering.

Q3 As is the case currently with mobile numbers, in order to ensure availability of TIs for fixed lines, should 10-digit closed numbering scheme be made applicable to fixed line also? Please provide answers with detailed justification.

RJIL Response:

1. Yes, 10-digit unified numbering scheme is the most important and critical numbering reform that has been in discussion for close to 15 years. Despite 3 consultations on efficient utilization of numbering, this reform is still not implemented.

2. Nevertheless, of all the possible iterations and options to free up numbering resources, Unified Numbering Scheme remains the most optimum solution. The solution of merging the fixed line number with STD Code is most optimum with least disruptions.

3. Further, the concern regarding the overlapping with level 1 services can also be easily addressed by using the closed numbering scheme for both mobile and fixed numbers. The fixed line numbers will become 10-digit numbers by merging the STD code with the number and users will be required to dial all 10 digits for making a call anywhere in India. FLRN will be prefixed with all existing fixed line numbers in order to ensure smooth routing.

4. Under the Unified Numbering scheme mobile numbers will remain unchanged and the fixed line numbers will be adjusted in a non-disruptive manner, and we will unlock the locked inventory of huge numbers. The overall number series will become in excess of 6 billion within the current 10-digit numbering scheme. This will create sufficient head room for growth of numbers for next decade or two. The call pattern under this arrangement is enclosed as **Annexure-A**.

5. Further to ensure that there is no impact on routing of the level 1 emergency codes and other level 1 codes and to avoid clash of level 1 emergency code calls with STD calls to SDCAs with STD code level 1, we have suggested that all fixed to fixed calls inter SDCA and intra SDCA calls are normalized and total 16 digits are sent to the L1 or NLD POI i.e. +91 + FLRN + STD Code + DN (Dialed Number) without changing the routing pattern of L1 emergency calls. This will be a minor adjustment considering the dividend of huge amount of numbering resources.

6. The abundance of the numbering resources made available by the implementation of Unified Numbering Scheme, can also be used to simplify other related processes like the process of allocating numbering resources. We submit that the current process is stringent, time-consuming, and unproductive and is a byproduct of paucity of numbers. Once the Unified Numbering scheme unlocks the numbers, we would request the Authority to recommend replacing the current process of allocating numbering resources with the operator **self-certification based** simplified automated number allocation mechanism.

7. We submit that the service providers should be allocated sufficiently large numbering resources that will not only be sufficient to tide over their immediate requirements but will also provide sufficient buffer for emergent needs. We further submit that the Authority should recommend a self-certification based annual assessment of the numbering resources allocated to a service provider to check the efficient utilization of the numbering resources. This is an easy check, as both the Authority and the Department of Telecommunication (DoT) have access to the subscriber base and VLR numbers of the service providers.

Q5 What are the other possible options, if any, to address the currently envisaged constraints in TI resources for fixed lines in an efficient manner? Please provide your answers with a detailed proposition (including technical challenges, changes required in handling, routing, interconnection and termination of emergency services and other essential calls and associated cost benefit analysis). Supportive documents, if any, may also be provided to justify your answer.

Reliance Jio Infocomm Ltd

RJIL Response:

1. While the migration to 10-digit unified numbering scheme is the optimum solution for India in case it is desired to not disturb the dialing pattern of fixed line users immediately, we suggest an alternative 10-digit numbering scheme to unlock the numbering resources. This is an All-Call Query (ACQ) based routing mechanism for calls originated from fixed line. Under this dialing pattern of a fixed user will remain unchanged.

2. This process will involve using the MNP like Location Routing Number (LRN) based solution for fixed line number routing. The Authority has already identified that spare SDCA codes 39 and 50 can be used for easing the numbering crunch.

3. We submit that 200 Fixed Line LRN (FLRN) can be created using the levels 39 and 50 with 2-digit suffix. Each TSP will be assigned a LSA level unique FLRN. The complete scope of 200 FLRNs will ensure that there is sufficient headroom for accommodating any new entrants in fixed sector.

4. All currently assigned fixed line numbers will be migrated to the database (DB) table, specifically created for the ACQ. ACQ query will be made for receiving party number by the originating network and routing will be based on FLRN + STD Code response from ACQ DB. All fixed line originated calls, if the receiving party is not a mobile number, will be taken to the ACQ. ACQ DB will revert with 'FLRN + STD Code + DN' response to respective node that will enable routing of the call to appropriate Network, SDCA and end user within or outside the network.
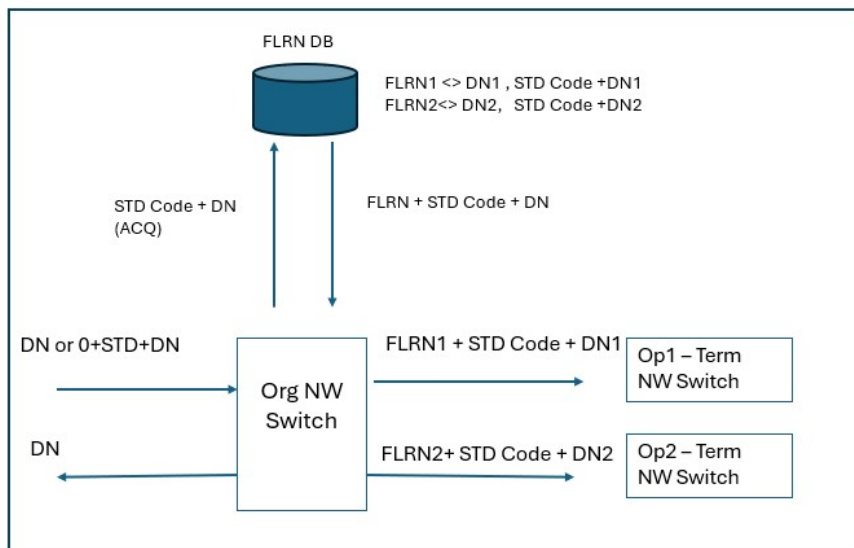
5. The call pattern under the proposed arrangement is enclosed in **Annexure-A.**

6. This solution will ensure that there is no inconvenience to the customer as the dialing pattern for the customers will remain same, including for fixed line to fixed line local calls and they will continue calling in same manner as before. However, the dividend in terms of free numbers for assignment will be huge. The currently unutilized large number range pool under Fixed Level 2 / 3 / 4 will become available for both fixed and mobile networks.

7. As desired by the Authority, the un-used sub-level resources under each and every SDCA will be opened up and the subsequent assignment of fixed line numbers can be done. We further understand that such a solution is implementable for all TSPs as most TSPs including legacy networks have moved to IP-based technologies.

8. Thus, we submit that ACQ based solution will not only lead to reduction in number database complexity in routing tables but will also have additional benefits in the form of POI consolidation. As all inter-operator fixed calls in an LSA can be received at centralized POI, this will obviate the need for SDCA and Level-2 TAX based POIs and all POIs can be moved to LSA basis.

9. This solution is only a stop-gap solution for the interim period till Uniform numbering can be implemented. We would recommend the solution suggested by us against Question no. 1 and 3.

Q6 Is bulk allocation of TI by few TSPs for providing SIP and PRI based services likely to create TI resources shortage in near future? If yes, what are the suggested means to address this issue? Please, provide your answer with supportive data.

RJIL Response:

1. No, bulk allocation of TI for providing SIP and PRI based services cannot be prevented due to shortage of TI resources. We submit that bulk allocation in fixed services especially for PRIs and SIPs are a business-driven requirement and are required for robust and sustainable growth of fixed services and the TI availability should be managed to meet these requirements.

2. We submit that the utilization in wireline segment needs to be examined with a different perspective than the wireless segment. In wireless, the number once allocated to a customer is activated immediately and it latches to HLR and is deemed to be in use.

3. Whereas, in wireline segment, there is a unique phenomenon called Assigned numbers, these are numbers that have been assigned to a customer but not in use immediately. There are various used cases, for instance the numbers committed in a tender process or allocated to an enterprise customer as a part of bulk order. In these cases, there is a firm order of a large batch on numbers. Post this firm order, the provisioning of these numbers has to be planned, which includes arranging for access, last mile connectivity, local bodies and society permissions (as and where applicable) and in many cases all the numbers allocated to an enterprise take months to be fully provisioned and utilized.

4. During this time, these numbers in assigned category remain tied to the enterprise and the service provider cannot allocate these numbers to any other entity or customer. Therefore, from DoT perspective, as detailed in aforementioned criterion, these numbers will be considered as unutilized, whereas from service provider perspective these numbers are utilized and should be factored in the utilization.

5. We also bring your kind attention to the Fiber and wireline services based goals and aspiration under the NDCP-2018, more specifically the goal of connecting 50% households by wireline by 2022 and submit that in order to enable the service providers to help meet these goals, such operational and basic activities such as allocation of numbering resources should be simplified and made commensurate with market realities.

Q7 Is there a need to introduce appropriate definition for 'inactive connection' for fixed-line services and the exact time duration after which, TIs associated with these inactive connections can be put to reuse? Is there also a need to revisit the definition of 'inactive connection' for Mobile services? Please provide your answers with detailed justification and suggested definition.

RJIL Response:

1. Currently, the provisions have been made for deactivating a connection for mobile services in case of no activity for over 90 days, Where the activity is defined to be a *voice call (outgoing or incoming) or video call (outgoing or incoming) or an outgoing SMS or a data session (upload or download) or usage of Value Added Services or payment of rental in case of postpaid connection or any other usage, as may be specified by the service provider*,. Further, post deactivation a mobile number is permitted to be used for another user post 90 days. However, no parallel provisions have been made for the fixed line Tis.

2. We welcome the thought process to define such requirements for fixed line services as well, however, submit that there is a need to refine the requirements for mobile services as well.

3. Evidently, an inactive mobile number is permitted to be allocated to another customer only post over 6 months of non-usage. We submit that this time period should be at least halved. Any mobile/fixed number deactivated for non-usage should be available for allocation to another customer post 90 days of inactivity, at the discretion of service provider. On the other hand, the cooling off period should be applicable only on the numbers deactivated for any other reason.

Q8 (a) Whether charges should be introduced for existing and newly allocated TI resources to ensure their efficient utilization? If yes, what should be the charging mechanism and applicable charges? Please provide detailed justification along with supportive documents, if any.

RJIL Response:

1. We reiterate our previous submissions that charging of numbering resources is not suitable for India, especially in the current scenario, when the focus of the Government and Authority is to rationalize the current set of levies and taxes, in order to spur investments in the sector.

2. The NDCP– 2018 talks about reforming the licensing and regulatory regime to catalyse Investments and Innovation and promote Ease of Doing Business by reviewing of levies and fees including License Fee, Spectrum Usage Charges, the definition of Adjusted Gross Revenue and rationalization of Universal Service levy alongwith reviewing the concept of pass-through charges to align the same with the principles of input line credit thereby avoiding double incidence of levies and so on so forth. Thus, a new levy in the current scenario will be out of place.

3. We further submit that the Authority had analysed over the charging of numbering resources twice previously, but had dropped the idea, basis the various submissions by the Industry, including the facts that the ARPUs and tariffs are already very low.

4. Further, the fact remains that the service providers anyways pay License fee and Spectrum Usage Charge on the AGR and the any income from the miniscule number of vanity numbers is already included in the AGR, thus an indirect charge is already there and any additional levy for all numbers can and will be directly transferred to the consumers. Thus, it is not a feasible or consumer friendly concept.

5. In its Recommendations on "*Ensuring Adequate Numbering Resources for Fixed Line and Mobile Services*" dated 29th May 2020 had noted that *The Authority is of the view that after following a stringent criterion for allocation of numbering resources, introducing pricing of numbers at this stage is not advisable.*

6. Similarly, in recommendations on *"Efficient Utilization of Numbering Resources"* dated 20th August, 2010, the Authority had rejected the proposal in favor of monitoring the efficient utilization of numbers. The Authority had noted that"

   A view is that a charge should inculcate better discipline and lead to higher efficiency in utilization of numbers. However, charging for numbers may have its own advantages and disadvantages. Though many countries today charge for numbers, pricing is a difficult decision to take the first time it is instituted. Also while reviewing the criteria of allocation, the Authority has recommended above that the service providers should not have more than 3 million unutilized numbers in a service area at the time of requesting for new block of numbers. The Authority expects that the revised criteria should lead to better utilization of numbers. Therefore, the Authority is of the opinion that the efficiency of utilization of numbering resources by the service providers be watched and the issue of pricing may be revisited if considered necessary.

7. It is not out of place to mention that the public perception is also strongly against any charging of numbers, as misrepresentation by some media houses on this issue led to such negative publicity that the Authority was compelled to issue a clarification on the same. Thus, it is strongly suggested that such proposals should be avoided.

(b) Should a financial disincentive be imposed upon TSPs for retaining X% or more of the allocated TIs remaining as unutilized beyond a certain timeframe? If yes, please specify the X% with suggested disincentive mechanism and retention timeframe with detailed justification?

RJIL Response:

We submit that the concept of penalizing or financially disincentivizing the service provider is not an optimum solution. The concept of FDs is also contrary to efficient utilization as efficiency cannot be forced. While we appreciate that intent to create a deterrent, it is reiterated the FDs should be avoided as these can have the counter effect on fixed line proliferation and will lead to increase in tariffs to offset, such possibilities of financial disincentives. We submit that there can be no better deterrent than withdrawing the unutilized levels after 12 months and that should suffice instead of financial disincentives.

Q9 What is the minimum contiguous range of unutilized TIs which the TSPs should be allowed to surrender for mobile and fixed-line services.

RJIL Response:

1. The aim is to ensure efficient utilization of TIs, therefore there is no need to provide for thresholds for voluntary return of resources by the TSPs and they should be encouraged to all available unutilized resources, in whatever quantity.

2. Further as submitted above, all available unutilized resources over 1 million numbers for over 1 years should be mandated to be returned. The TSP should have a right to seek additional resources only when the existing number bank meets the eligibility requirements.

Q10 Are there any constraints envisaged in TI resources and its allocation for Machine-to-Machine (M2M) services? If yes, what changes should be incorporated to cater for its future requirements? Do support your answer with detailed justification.

RJIL Response:

1. The TI resources for M2M services are already on 13-digit numbering scheme, and as mentioned by the Authority only one M2M identifier i.e. 575 has been used and that alone can generate 10 billion TIs.

2. Further basis the existing 'License Identifier's reserved per TSP, total 1000 Identifiers per TSP are available under this M2M identifier. Additionally, the present scheme is also future proof as 'License Identifier' Levels 7, 8, 9 are still unassigned and available for future allocation, if needed. Therefore, currently no change is required as no immediate constraints are visible for this set of TI.

3. Thus, we agree with the Authority that the prospects of any impending constraint are remote. Nevertheless, further flexibility can be provided to TSP to shift the unused 'License Identifier' from less utilized LSA to most needed LSA with approval of DOT by keeping base range operational within the LSA.

Q11 What constraints/issues if any, are currently envisaged in the procedure being followed for allocation of Level-1 short codes by DoT? Should the level-1 short codes be reserved for government entities only? Will allocation of level-1 short codes on chargeable basis solve the issues identified in aforementioned question?
What are the other possible suggestions for judicious allocation and effective utilization of level '1' numbering resources? Please support your answer with detailed justification.

And

Q12 What are the global best practices being followed for judicious allocation and effective utilization of short codes (akin to Level-1 short codes in India)?

RJIL Response:

1. We agree with the Authority on the utility of short codes for emergency services and the fact that these level 1 codes are required for instantaneous connections for urgent services. Authority has correctly noted that Level 1 short codes function as rapid conduits, enabling immediate linkages to indispensable services like police, fire, and medical assistance, thereby enhancing the responsiveness.

2. The most critical short codes are 3-digit short codes due their easy recall value and it is important that these should be consolidated to as few as codes possible for instance all 10x / 107x services can be merged to single number such as 112. Further, the Government should ensure that suitable infrastructure is also available for these numbers.

3. The global examples shared in the consultation paper point towards charging for these numbers, however, we do not think that the same is a feasible option for public welfare services and the Government emergency response services. We submit that these should continue to be on free of cost basis and should be accessible from each and every fixed or mobile number in the country without any additional dialing requirements.

4. However, in order to avoid the misuse of Level – 1 short codes, Non-Emergency / Utility short code allocation by commercial operations like Indian Railways should be on chargeable basis. The charges can be both fixed and recurring basis projected call volume. The allotment criteria should be strict, and the aim should be to move all non-Government helplines to 1800 IN services or to digital solutions like chat services.

Q13 Are there any constraints/challenges envisaged with regards allocation and utilization of TI resources for Service Control Point (SCP) codes and Signaling Point (SP) codes respectively? If yes, what changes should be incorporated to cater to future requirements of the aforesaid codes? Do support your answer with detailed justification.

RJIL Response:

1. We do not see any constraints with regards allocation and utilization of TI resources for Service Control Point (SCP) codes and Signaling Point (SP) codes, at the current juncture.

2. DoT has allocated sufficient national SCPs for the available pool of 1000 SCPs and the TSP can suffix each SCP with a 6-digit extension number leading to sufficient inventory. Thus, no constraint is foreseen.

3. On the other hand, for international SCPs, the current NI-0 SPC allocation has dependency on 'International Agency' which leads to delays in NI-0 SPC arrangement for TSPs. We request the Government to procure sufficient NI-0 SPCs from concerned International body to avoid such delays in the interest of ease of doing business.

4. Further, as the network connectivity is rapidly moving from TDM based connectivity to IP based connectivity, the utility for SP codes is actually decreasing and once again no constraint is foreseen.

5. Nevertheless, as a best practice DOT can collate the inventory of current usage of SCPs and SP Codes from all TSPs time to time and review the requirements basis usage. However, no critical action is warranted at this moment.

Q14 What constraints/ challenges are anticipated with regards TI resources for Location Routing Number (LRN) codes to cater for futuristic requirements? What changes, if any, should be incorporated to effectively address its future needs? Do support your answer with detailed justification.

RJIL Response:

1. As noted by the Authority, the current spare LRN codes can cater to roughly 10 more pan-India TSPs, evidently, the constraints are not real. Further, any real possibility that can lead to any constraints, as per consultation paper, is large number of MVNOs and IP-based access providers.

2. We submit that as and when such an eventuality occurs, there would be a need to review of operational LRNs vs total reserved pool leading to re-assignment of under-utilized or non-utilized LRNs. However, as mentioned before, as on date no constraint is visible on LRN TI resources.

Q15 What constraints/ challenges are anticipated in the allocation of TI resources for Intelligent Network (IN) Services like Free Phone service, Premium services, International Toll-Free Service (ITFS), etc.? What changes, if any, should be incorporated to cater for its future requirements? Do support your answer with detailed justification.

RJIL Response:

1. We agree with the Authority, there does not appear to be any constraint on TI resources for Intelligent Network (IN) Services like Free Phone service, Premium services, International Toll-Free Service (ITFS) etc.

2. However, in order to promote competition in these services, it is important to introduce number portability for IN numbers. We submit that INP has also not been attempted so far, however, it is relatively easier to implement due to unique nature of IN numbers and routing arrangement. The Tollfree number routing relies on screening the first 7 digits. For instance, 1800 889 3333 is identified as a Jio Tollfree number, with the 889 SCP code allocated by DoT to Jio.

3. In order to implement INP, MNP based structure of centralized database of all Tollfree numbers can be created. The database will contain: Tollfree number- its associated Carrier Access Code (CAC) post-porting, and TSP details.

4. **Routing Arrangements:** Upon porting, the Repository will attach a unique CAC to each Tollfree number. This code will serve as a reference for routing calls to the appropriate service provider, like LRN in MNP. Allocation of CAC can be done by DoT to all TSPs.

5. **Lookup Mechanism Integration:** TSPs will integrate a lookup mechanism into their systems to query the portability database. When a call is initiated to a Tollfree number, the TSP should consult the database to retrieve the corresponding CAC for routing purposes.

6. **Fallback to SCP Code:** In cases where a CAC is not available in the portability database, fallback to the existing SCP code method for routing calls to the respective service provider.

7. **Port-Out Request Process:** Given the absence of SMS and outgoing call feature in Tollfree service, port-out requests should ideally be initiated by an Authorized Signatory. TRAI can emulate the system of Corporate porting in case of MNP without the need for an individual UPC for each number. The Authorized signatory will make a request through a letter for porting of toll-free number and the SIP or mobile numbers to which it has been mapped. After KYC verification of the Authorized signatory by the Donor operator, the Tollfree number could be incorporated into the portability database. As most of the mapped numbers are Fixed line numbers, this will also facilitate FNP adoption.

Q16 What constraints are envisaged towards TI resources for MCC MNC codes being used for Captive Non-Public Networks (CNPNs)? What changes, if any, should be incorporated to cater for its future requirements? Do support your answer with detailed justification.

RJIL Response:

1. We submit that as per ITU-T standards (ITU-T E.212) the length of Mobile Network Code (MNC) permitted is only of 2-3 digits. However, in India, DOT has allocated 6 digit MNC for CNPN, instead of 3 digit MNC normally assigned for mobility network.

2. As a result, only 6-digit MSIN are being allocated in case of CNPN. Such current allocation methodology of 1 million users for PAN India basis will require repeated allocations from DOT. Instead, if all 9-digit MSINs under a MNC are allocated to a TSP on PAN India basis then TSP can manage further allocation for CNPNs on need basis.

3. Thus, while there are no constraints on the TI resources, there is a need for revamping the assignment methodology for MCC MNC codes to be used for CNPNs.

Q17 Apart from the questions posed above, are there any additional issues being experienced by the TSPs regarding the aspects of the National Numbering Plan 2003 and TI resources allocation criteria? If yes, then the same may please be brought out in detailed elaboration with supporting documents.

RJIL Response:

1. As technology is advancing and going forward there would be satellite based access services also equally available to Indian customers wherein the traffic would be routed within the country through the gateways established within the country.

2. We submit that such services should also use mobile national numbering as device will be authenticated on Indian networks and call will originate and terminate within the country. Hence, it is important that mobile numbers are allocated for such a service. The proposed national numbering plan should also address the requirement of numbering resources for such satellite based mobile services.

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Calling pattern under Unified Numbering

Call type	Area Type	BSNL									
		Current					Proposed				
		Dialing pattern	Outpulsing format	POI Type	Total digits sent on POI	Digit Count	Dialing pattern	Outpulsing format	POI Type	Total digits sent on POI	Digit Count
Fixed to Fixed	Intra SDCA	without STD Code	No normalization	Tandem	6 / 7 / 8-digit	6 or 7 or 8	10 digit- STD code + number	Normalization	LSA	+91 + FLRN + STD Code + DN	16
Fixed to Fixed	Inter SDCA	0 or +91 & STD Code + DN	Normalization	L2 POI	+91 + STD Code + DN	12	0 or +91 & STD Code + DN	Normalization	LSA	+91 + FLRN + STD Code + DN	16
Fixed to L1 Code (Emergency Codes)	Intra SDCA	3 to 6-digit	no normalization	Tandem	3 to 6-digit	3 to 6-digit	3 to 6-digit	no normalization	LSA	3 to 6-digit	3 to 6-digit
Fixed to Mobile	within and outside LSA	with 0 or +91 + 10-digit DN / without 0 or +91 + 10-digit DN	Normalization	L2 POI	+91 + LRN + 10-digit	16	with 0 or +91 + 10-digit DN / without 0 or +91 + 10-digit DN	Normalization	LSA	+91 + LRN + 10-digit	16
Mobile to Fixed	within or outside LSA	0 or +91 + STD Code + DN	Normalization	CMTS L2 POI	+91 + 10-digit	12	0 or +91 + STD Code + DN	Normalization	LSA	+91 + FLRN + 10-digit	16
Mobile to L1 Code (Emergency Code)	within LSA	3 to 6-digit	No normalization	L1 POI	3 to 6-digit	3 to 6-digit	3 to 6-digit	Normalization	LSA	'1800 / 1860 / '+91 + FLRN _ STD Code + DN	10-16

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Calling pattern under ACQ based solution.

Call type	Area Type	Dialing pattern (both current and proposed)	BSNL							
			Current				Proposed			
			Outpulsing format	POI Type	Total digits sent on POI	Digit Count	Outpulsing format	POI Type	Total digits sent on POI	Digit Count
Fixed to Fixed	Intra SDCA	without STD Code	No normalization	Tandem	6 / 7 / 8-digit	6 or 7 or 8	Normalization	L1 / NLD POI	+91 + FLRN + STD Code + DN	16
Fixed to Fixed	Inter SDCA	0 or +91 & STD Code + DN	Normalization	L2 POI	+91 + STD Code + DN	12	Normalization	L1 / NLD POI	+91 + FLRN + STD Code + DN	16
Fixed to L1 Code (Emergency Codes)	Intra SDCA	3 to 6-digit	No normalization	Tandem	3 to 6-digit	3 to 6-digit	no normalization	Tandem	3 to 6-digit	3 to 6-digit
Fixed to Mobile	within and outside LSA	with 0 or +91 + 10-digit DN / without 0 or +91 + 10-digit DN	Normalization	L2 POI	+91 + LRN + 10-digit	16	Normalization	L2 POI	+91 + LRN + 10-digit	16
Mobile to Fixed	within or outside LSA	0 or +91 + STD Code + DN	Normalization	CMTS L2 POI	+91 + 10-digit	12	Normalization	CMTS L2 POI	+91 + FLRN + 10-digit	16
Mobile to L1 Code (Emergency Codes)	within or outside LSA	3 to 6-digit	No normalization	L1 POI	3 to 6-digit	3 to 6-digit	Normalization	Access or NLD POI	'1800 / 1860 / '+91 + FLRN _ STD Code + DN	'10 ~ 16