The Hashemite Kingdom of Jordan

Telecommunications Regulatory Commission

Explanatory Memorandum on the National Numbering Plan and Instructions Regarding the Allocation and Reservation of Numbering Capacity

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1   Introduction

On the 16th July 2009 TRC published the *Notice requesting comments on changes to the National Numbering Plan and Regulations for the Allocation and Reservation of Numbering Capacity*. The Notice invited comments on any aspect of the National Numbering Plan and the Regulations for Allocation and Reservation of Number Capacity and included specific questions addressing the points that TRC considered should be amended

TRC received responses from five parties. The parties were: Orange Fixed (Jordan Telecommunications Company); Orange Mobile (Petra Jordanian Mobile Telecommunication Company); Umniah; Voice on the Net Coalition Europe ("VON") and Zain Jordan.

These responses were published and TRC invited any interested party to comment on any aspect of the responses that they considered relevant to our review of the National Numbering Plan. TRC did not receive comments from any party expressing their views to these responses.

This Explanatory Memorandum records TRC analysis of the comments received in response to the Notice and the final conclusions regarding changes to the National Numbering Plan and the related *Regulations for Allocation and Reservation of Number Capacity*. Section 2 of this Memorandum considers the general comments that TRC received. Section 3 considers the responses to the specific questions that TRC asked in the Notice regarding the proposed changes to the National Numbering Plan, whilst Section 4 considers the responses that TRC received relating to the Regulations. Finally, Section 5 considers the comments that were submitted regarding the Annexure to the Notice. Within Sections 3 and 4 of this memorandum TRC have used the same sub-sections numbers as TRC used within the Notice to assist with cross-referencing.

TRC have not reproduced the detailed comments received, as these were published on TRC's web site on the 18th August 2009.

Throughout this Explanatory Memorandum, unless explicitly stated otherwise within the text, references to the Notice refer to the *Notice requesting comments on changes to the National Numbering Plan and Regulations for the Allocation and Reservation of Numbering Capacity* that TRC issued on the 16th July 2009 and references to the Regulations refer to *Regulations for Allocation and Reservation of Number Capacity*

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2   General Comments

Orange Fixed

Orange Fixed understands the importance of issuing the Consultation Paper and urges the TRC to address all of its comments stated in this submission.

In our opinion, any revision to the National Numbering Plan should be carried out in an objective, non-discriminatory, equitable, proportionate, timely, and transparent manner.
The current review and future reviews should always take into consideration the following guiding principles:

A-Flexible to meet future needs
Any proposed regulation that is not flexible will result in future complications and a requirement to amend the NNP. This will inevitably affect the Jordanian market negatively.

B-Should promote competition
The TRC while review the NNP should realize that the numbering capacity should be utilized for the benefit of Jordanian citizens and Jordanian investments. The TRC should not tolerate any anti competitive practice whether internally or externally that seeks to take advantage of such a numbering capacity to increase the number of its subscribers regionally. Safeguarding the Jordanian numbering capacity should be one of the top priorities of the TRC

C- Cost-effective
The review of the NNP should not impose any additional costs on operators.

D- Address operators and end users current and future needs.

E-Take into account the current and future international development.

Orange Fixed strongly suggests that a comprehensive review of the NNP cannot be performed without considering Mobile Number Portability (MNP) as a future requirement in Jordan. The current situation around the telecommunications world is that most regulators agree that traditional services which use mobile numbers are subject to portability. Number portability requirements have become much more common and for example are regarded in the European Framework as a user right irrespective of the cost. Also, the problems of changing number have reduced because subscribers can easily inform their correspondents of a change in number via a broadcast email at zero marginal cost.

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VON Europe

Although some of the TRC proposals have certain merits, VON believes that the amendments to the numbering plan proposed by the TRC are too limited to encourage new applications and services and enhance the contribution of VoIP players to the benefit of Jordanian consumers and professional users.

Numbers have been, are and will remain a critical resource for communications. In general, VON believes that the TRC's propositions in the Notice do not entirely and/or sufficiently embrace new evolutions such as the high growth in demand for numbers, proliferation of new applications and services, market liberalization, customer expectations, and an expansion in the finality of numbers (from location identifiers to personal and service identifiers and access codes to new applications).

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In terms of classifications or categories within VoIP, VON would also like to point out that "VoIP services" do not exist, as "copper services" do not exist: VoIP-enabled applications, websites, hardware and services, however, are changing the way we work and live!

VON Europe is concerned by the lack of consistency at international level in the use of terminology pertaining to Voice over IP. We believe that this is partially the reason why we see so little harmonization occurring in this area and misconceptions over the information society market taken in its broadest sense.

VoIP refers to a protocol (the Internet Protocol) used to convey voice. Voice on the Net (also referred to as "Voice over Internet") is one of the applications using the VoIP or similar technology that allows voice communications over the Internet. It refers to the specific case where an application or service is available through the Internet, allowing users to have voice communications over the Internet. The essential characteristic of Voice on the Net is that the provider has no control over the network used to carry that communication, neither in terms of the reliability of that network, nor in terms of the IP address allocated to the users of that network.

Moreover, Voice on the Net does not necessarily connect with the public telephone network (for example, PC-to-PC or peer-to-peer applications and services). It is therefore different from a VoIP service offered by an access operator (incumbent telecoms operator, cable company or alternative market player) where the access operator has control over the network the voice communication runs over (often referred to as "Voice over Broadband"). VON believes that this classification is more appropriate than the one outlined in paragraph 97 of the Notice.

Analysis

Three of the five parties opted to make some general observations regarding the Consultation and the Proposals, in addition to the general introductory comments made by all the parties. Two of these relate to the General Requirements of the Jordanian National Numbering Plan.

There were also comments that the National Numbering Plan cannot be reviewed without taking account of Mobile Number Portability as a future requirement within Jordan.

The third respondent expressed concerns that the review is too conservative and does not address the many potential telecommunications developments in the coming years. The underlying concern is that this will create a potential barrier to their use and the resulting customer benefits within Jordan. Further, the lack of consistent international terminology relating to voice services using the Internet Protocol is explained and suggests that the term Voice on the Net is adopted, recognising that it is different and wider than a VoIP offered by a access operator.

TRC Conclusions

The comments regarding the General Requirements were repeated by parties in a summary form in response to Question 2 and are considered further at that point.

The TRC recognises that Mobile Number Portability will influence customers' behaviour regarding number change. The implementation of this service is a separate task within the TRC in similar timescales to this review of the National Numbering Plan and so the impact cannot be assessed and incorporated into this review. However the TRC would note that the purpose of Mobile Number Portability is to reduce the occasions when customers must change their number.

The National Numbering Plan had been produced in accordance with the ITU-T Recommendations including E.164. These are specifically related to services available on public telephone networks and not to services provided by other

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networks (which may or may not) be connected to public telephone networks. In undertaking this review TRC have sought to reach a balance between preparing the plan for evolutionary services, whilst retaining the underlying structure for existing services. Adopting this approach, TRC have fully considered the comments made in response to the Notice relating to preparing the National Numbering Plan for the future and considers these as they have been provided against the specific questions.

TRC agrees that the terminology of voice services based on IP networks can be confusing and we have carefully considered the use of the terms. As stated above this National Numbering Plan is based on Recommendation E.164 and is specifically designed for public telephone networks within Jordan. In that context and noting the European Regulators' Groups use of the term VoIP when considering numbers for services with a nomadic element, TRC believes that the use of the term VOIP is consistent with international usage. Further is fully consistent with the use of the term in the TRC Board Decision No. (2-18/2007). Therefore TRC will continue to use the term VOIP within the National Numbering Plan when it is appropriate.

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3   The National Numbering Plan

3.1   National Numbering Plan Design Requirements

Question 1: What period do you consider is appropriate between reviews of the National Numbering Plan?

Orange Fixed

Orange Fixed supports the TRC in its proposal that a period of 5 years is appropriate between reviews of the National Numbering Plan.

Orange Mobile

Orange Mobile supports the TRC in its proposal that a period of 5 years is appropriate between reviews of the National Numbering Plan.

Umniah

Umniah considers 5 years an appropriate period, but during that period, change request by more than one licensee should be also considered upon application of such licensees.

VON Europe

Whatever the considered review period, the TRC should be prepared to consider (and publicly consult on) changes upon justified application of interested parties, and on its own initiative to reflect developments that were not previously anticipated.

Zain

Due to the new technologies and services which have emerged lately as well as the expected demand in number capacity, we would see that a period of three years is required for the first review. However, this period can be extended for more than three years for the next review once the market and capacity demand have stabilized.

> ### *Analysis*
>
> *All of the parties agree that the review period should be extended with general support for five years. Some parties expressed a concern that at a time of change within the telecommunications market this extended period could introduce a risk that problems will occur before the next review is due. Two different approaches to address this potential risk were offered. The first was to include a provision to undertake intermediate reviews should circumstances change the second suggestion was to initially extend the period before the review to three years and then five years.*
>
> *One party choose to respond to this question with their views on the capacity required for Fixed-Line / Geographic numbers.*
>
> ### *TRC Conclusions*

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The TRC acknowledges that a five year review period could introduce a risk of numbering resource being unavailable due to unpredicted demand or unforeseen new services being introduced. Conversely it does not wish to include unnecessary reviews with the resulting burden on operators and itself. Therefore TRC will include a provision to allow intermediate reviews when the TRC identifies a need, which may be at the suggestion of an operator or other interested party.

TRC consider the Fixed-Line / Geographic comment under Question 3 below.

Question 2: What factors do you believe should constitute the National Numbering Plan General Requirements?

Orange Fixed

Orange Fixed supports the TRC in the mentioned factors. Further Orange Fixed strongly suggests adding the following factors:

a) Flexible to meet future needs.
b) Should promote the establishment of effective competition in the market.
c) Cost-effective and easy to manage.
d) Address operators and end users current and future needs.
e) Take into account the current and expected future international development.

Orange Mobile

Orange Mobile supports the TRC in the mentioned factors. Further Orange Mobile strongly suggests adding the following factors:

a) Flexible to meet future needs.
b) Should promote the establishment of effective competition in the market.
c) Cost-effective and easy to manage.
d) Address operators and end users current and future needs.
e) Take into account the current and expected future international development.

Zain

Zain agrees with the TRC that the stated factors are an essential part of NNP. In addition, we consider the following factors should also be part of the plan's general requirements:

- To plan in conformity with relevant and applicable ITU standards to the extent possible
- To meet the challenges of the changing telecom environment
- To reserve numbering capacity to meet undefined future needs
- To support effective competition by fair access to numbering resources
- To meet the population size/forecast for Jordan (probable future market size)

Another subject that needs clarification from the TRC is its intention to facilitate independent administration. The formulation, duties and responsibilities of this administration need to be specifically addressed.

Analysis

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Three parties helpfully suggested a total of ten points that should be considered as part of the General requirements. These were:

- *To plan in conformity with relevant and applicable ITU Standards to the extent possible;*
- *To meet the challenges of the changing telecom environment;*
- *To reserve numbering capacity to meet undefined future needs;*
- *Flexible to meet future needs;*
- *Take account the current and expected future international development*
- *To meet the population size/forecast for Jordan (probable future market size);*
- *Address operators and end users current and future needs*
- *To support effective competition by fair access to numbering resources;*
- *Should promote the establishment of effective competition in the market;*
- *Cost effective and easy to manage;*

It can be seen that there is duplication and similarities between a number of these points.

In addition one party suggested that the formulation, duties and responsibilities of the administration raised in the current General Requirement h) should be clearly stated.

TRC Conclusions

The TRC have concluded that the inclusion of more specific general requirements will be helpful to the understanding and purpose of the National Numbering Plan. We will therefore incorporate these suggestions into the National Numbering Plan as follows:

- ✓ *The first bullet point will be included.*
- ✓ *We believe that the second and third bullet points are related and that they are already addressed in General Requirement c).*
- ✓ *The third, fourth and fifth bullet points are similar and addressed by the current General Requirements b) and d).*
- ✓ *The sixth bullet point is already explicitly covered within General Requirement a).*
- ✓ *It is our opinion that the seventh bullet point addresses issues covered by earlier bullet points and is thus addressed by the above points.*
- ✓ *The existing General Requirement f) explicitly addresses the competition issues raised n the eighth and ninth bullet points.*
- ✓ *We will include a new general requirement to address the issue that changes should be designed and implemented in a manner that does not impose unreasonable costs or disruption on operators and end users.*

TRC agrees that the administration responsibilities etc. should be clear. This is the reason that TRC have published (and are reviewing as part if this consultation) the Regulations for Allocation and Reservation of Number Capacity. That document describes the duties and responsibilities of the various parties relating to the different procedures associated with administering the National Numbering Plan.

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TRC will take account of this general comment when we consider the specific comments made about that document later in this document.

3.2 Overall Structure

Question 3:   What do you think is the total required capacity for Fixed-line / Geographic services?

Orange Fixed

Orange Fixed believes that the current available designated capacity is sufficient for the fixed line/Geographic service.

Orange Mobile

Orange Mobile believes that the current available designated capacity is sufficient for the fixed line/Geographic service.

Umniah

Geographic numbers should be allowed to be used also nomadically and out-of-area and potentially even out-of-country (as USA and UK have done).

Paragraph 22: If we make the assumption that new entrant operators (using Fixed Broadband Wireless Access Service) provide a market stimulus, the ITU data suggests that demand is unlikely to ever exceed 30 lines per 100 inhabitants. TRC is therefore using a forecast that the peak demand for Fixed-Line service will be less than 3m.

Umniah comment:
This is potentially quite conservative, if we imagine potential new impetus from fibre to the home networks at some stage in the future, but next paragraph 23 states that there are 28m geographic numbers available which is indeed a large amount.

Zain

Zain considers the proposed capacity for fixed line/Geographic services is adequate in accordance with the projected population increase trend in Jordan.

However, the unlikely probability of this capacity not being sufficient to meet the demand can be resolved in the next review of NNP.

Analysis

There was a general consensus that the current capacity for Fixed-line / Geographic services is adequate and that there is no evidence that demand is likely to exceed the current capacity. One party also recognised that if demand exceeds current predications then future reviews of the National Numbering Plan can be used to address the issue at that time.

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One party raised the issue of using the Fixed-Line / Geographic capacity for services with a Nomadic facility.

TRC Conclusions

No further consideration needs to be given to this issue at this time. As TRC explicitly asked about the use of Fixed-Line / Geographic capacity for services with a Nomadic facility in Question 22 it will consider the point raised here with the points raised in response to Question 22.

3.2.1   Personal Numbers

> **Question 4: What number ranges do you believe should be used for User ENUM and why?**

Orange Fixed
This applies to questions 4,5,6,7.
With regards to the above mentioned points (4, 5, 6, 7) that discusses the introduction of Personal Numbers and ENUM to the market, Orange Fixed believes that such a new subject should be discussed separately hence it is a new concept to the market. Introducing the concept of Personal Numbers to individuals and/or businesses needs further analysis from operators and the TRC to study and understand the demand side of the subject matter and to be able to analyze the impacts from delivering such a service to the market. As the TRC has stated in paragraph 33 of the Consultation Paper the implementation of ENUM is very limited which leaves us with very little evidence on the likely success of such services and the demand for numbering capacity. The TRC's proposal in the Consultation Paper is vague and unclear in several aspects. On one hand the TRC is admitting of the likely success of such services and on the other hand the TRC is proposing to introduce these services in the market. Accordingly, Orange Fixed stresses that all decisions by the TRC regarding this issue should be justified legally and economically so as not to harm the market by introducing a service that does not have a sufficient demand side. We therefore are submitting our reservation on introducing Personal Numbers and the ENUM concept at this early stage and believe that further market studies and analysis is required by the TRC. Orange Fixed is more than willing to participate in any exercise that the TRC proposes to identify and analysis the impacts of introducing the proposed concept of Personal Numbers to the Jordanian market.

Orange Mobile

This applies to questions 4,5,6,7.
With regards to the above mentioned points (4, 5, 6, 7) that discuss the introduction of Personal Numbers and ENUM to the market, Orange Mobile believes that such a new subject should be discussed separately hence it is a new concept to the market. Introducing the concept of Personal Numbers to individuals and/or businesses need further analysis from operators and the TRC to study and understand the demand

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Umniah

Umniah Answer:
User ENUM has universally failed, due to lack of demand and incumbent operator resistance. There is no intrinsic reason to restrict it to 'personal numbers' or ENUM to the 7 range. Demand has failed to materialise, and services have failed, among others because in many countries it was (or was perceived to be) more expensive to call numbers in the ENUM range than geographic numbers, and because some operators did not open calling to the ENUM range. ENUM could be adopted for geographic numbers. See also Umniah's comments on TRC Question (3).

VON Europe

VON believes that User ENUM should not be linked to any particular number range. Associating it, for example, also with geographic numbers, should be possible where demand is expressed for such features (and may become increasingly important for nomadic use of geographic numbers, a use VON believes the TRC should consider and implement).

Zain

Zain Jordan agrees with the TRC's opinion that the User ENUM is a specific realization of Personal Number service and that number blocks from the range designated as Personal Numbers may be allocated, for the purpose of this revision to the NNP for such services. However, this designation should be subject to more analysis in the next NNP review.

Analysis

The responses varied significantly from support for the TRC's position, through an explanation of why User ENUM may not have gained acceptance in other countries and concern that Fixed-Line / Geographic numbers should be used within User ENUM to a major concern that the TRC is introducing a new service without due legal and economic justification. Further, during informal discussions between the TRC and some operators during the consultation period, it became clear that there remains some confusion about the distinction between User ENUM and Infrastructure ENUM.

TRC Conclusions

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To assist interested parties understand TRC thinking and the proposed approach Annex A to this Explanatory Memorandum is attached to describes the difference between User ENUM and Infrastructure ENUM as they relate to National Numbering Plan issues.

General Requirements b) and d) of the current National Numbering Plan provide a basis where the TRC seeks to designate number capacity in advance of the service being introduced within Jordan. This reduces the risk that the National Numbering Plan will require changes at short notice in reaction to the introduction of new services. It was for this reason that the current National Numbering Plan includes capacity designated for Personal Numbers even though there were no such products within Jordan when it was designed.

TRC acknowledge that User ENUM has not yet achieved commercial success, although it has not attempted to analysis the reasons for the elusive success. However, TRC is aware that commercial Service Providers continue efforts to launch services in various countries. Given this continuing interest in the service, TRC would not wish the Jordan National Numbering Plan to be a barrier to the launch of the service within the country if a Service Provider believes that it is commercially viable.

TRC would emphasis that designation of number capacity within the National Numbering Plan does not create a regulatory obligation on any operator or service provider to implement or provide the service, although 'must route' obligations within the National Numbering Plan and Regulations for Allocation and Reservation of Number Capacity do place an obligation on operators to correctly route calls to the appropriate Service Provider (or end user if on the operator's own network) made to valid allocated number capacity.

Question 5: Should business customers have access to the benefits of these services and be permitted to have 'Personal Numbers', but that they should be limited to one number per business?

Orange Fixed

See Question 4

Orange Mobile

See Question 4

Umniah

The TRC has not provided objective justification for restricting personal numbers to one per business. Surely there are legitimate uses for many businesses to have more than one such number.

VON Europe

VON Europe also considers that the TRC proposal to restrict personal numbers to one per business is inappropriate: there are plenty of legitimate reasons for businesses to have more than one number, to the benefit of consumers wishing to contact them (e.g. customer service for different brands/products, to reach different departments, etc.). VON therefore urges the TRC not to impose limitations of such nature.

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If the TRC would permit limiting one personal number per business to prevent abuse of the number range then we kindly request that the TRC define the steps it will undertake to ensure overall conformity to/compliance with this limitation.

In the light of the availability of 10 million numbers available in the 070 range compared to the expected population of Jordan (9.9m) in 2030, it is clear to us that there is a possible risk that the capacity is not going to be adequate to meet the demand. , We would like the TRC to explore the possibility of using the 090 range where the reserved capacity is larger than the 070 range and copies likely better to cope with the expected increase in the population.

Analysis

The three parties responding to this question queried the practical ability of the TRC or the operators to limit the use by business customers to a single number. Indeed there were implicit and explicit views that if businesses are able to use the service their reasonable demand will exceed our proposed limitation. One respondent suggested using the 090 range instead of the current designation to generate more capacity.

TRC Conclusions

In making the proposal to extend to businesses the telecommunications services accessed by personal numbers, the TRC was seeking to remove a theoretical barrier within the current National Numbering Plan. The barrier is theoretical as no representations have been received during this consultation exercise, or previously, that there is currently demand for such a service form business customers.

As one party noted, the proposed limit of one number per business is a response to the limited number capacity available within 070 (10m numbers) when compared to our population forecast of 9.9m inhabitants.

TRC believe that the concerns expressed are valid and that practical enforcement of the limit, without unreasonable burdens on the TRC and operators, is unlikely. Therefore, it is concluded that extending the personal numbers to businesses with a limit of one number per business should not occur.

Nonetheless, this will retain the current theoretical barrier, which may become a practical barrier if User ENUM services are introduced into Jordan, as businesses would be precluded from using the numbers and thus denied the facilities of User ENUM.

TRC is reluctant to increase the length of numbers that are in-service unless there is a clear justification for such an approach. However these number ranges are currently designated but they have not yet been allocated and thus there will not be cost or disruption resulting from a change of length. Therefore TRC concluded that

- *Personal Number ranges may be used by businesses where they are used to identify an individual or business and are translated to another valid E.164 number or IP address.*

- *TRC will rename the designation to Telecommunications Identity Numbers, to avoid future ambiguity between the name and the entitlement of customers to use these numbers once they are allocated. Service Providers will be able to use their preferred terms in any product and marketing names that they develop.*

- *TRC will study in the future the possibility to extend the length of the number to be 070 plus eight digits, creating a maximum capacity of 100m numbers.*

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In reaching this last conclusion TRC has taken account of the fact that the current 090 range of numbers contains only an additional six digits and thus has a more limited capacity than the 070 range. Further, it is already designated for Premium Rate services and to use the range for Telecommunications Identity Numbers will introduce unreasonable capacity limitations for both services.

Question 6: What block sizes should be used for the allocation of Personal Numbers?

Orange Fixed

See Question 4

Orange Mobile

See Question 4

Zain

Given the international practices in the implementation of ENUM that showed little evidence of the likely success of such service, we are in the opinion that a block size of 1,000 is enough to meet this few demand, with the understanding that this size should be revised in the next NNP review in accordance with the actual ENUM demand and usage.

Analysis

The only party to comment on the detail of this question recognised our intention to adopt small block sizes in order to manage the capacity efficiently for what is, so far, an unproven service. Indeed they suggested that a smaller block size should be adopted, recognising that this can be increased in future reviews of the National Numbering Plan if actual demand experience warrants the change.

TRC Conclusions

TRC will adopt an allocation block size of 1000 numbers.

Question 7: Should the TRC permit all valid numbers to be used within *infrastructure ENUM* (and it's equivalents within network routing functions)? If not, why not?

Orange Fixed

See Question 4

Orange Mobile

See Question 4

Umniah

Infrastructure ENUM should be possible to be used in conjunction with all numbers.

VON Europe

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VON Europe believes that the TRC should permit all valid numbers to be used within Infrastructure ENUM.

Zain

Since the market situation to date is not quite clear yet, Zain Jordan supports the TRC's intention not to designate any specific number ranges for infrastructure ENUM provided that this intention should be subject to further assessment in the next NNP review or once a need arises.

Analysis

The three parties that responded to this question supported our proposed approach, although one suggested that the decision should be explicitly reviewed once there was experience within Jordan.

TRC Conclusions

TRC will adopt the proposal and note that all aspects of the National Numbering Plan will be reviewed at routine intervals or when a need to review has been identified by the TRC, see Question 1.

3.2.2   Radio Paging and Trunking Services

Question 8: Should the TRC designate unused and unallocated numbers ranges beginning 074 as protected for future mobile services? If not please explain your reasons.

Orange Fixed

Orange Fixed supports the TRC in its proposed approach hence it is in line with international best practice that shows clearly a declining trend in markets for Radio Paging and Trunking services and taking into consideration the expected huge future demand in the mobile market. Yet our reservation on this point is concerning the Trunking services that the licensed operators are able to provide by using the already allocated numbering range for other services. Please note that when the TRC clarifies its position regarding this issue, we will be able to provide our comments on the above TRC view in this regard.

Orange Mobile

Orange Mobile supports the TRC in its proposed approach hence it is in line with international best practice that shows clearly a declining trend in markets for Radio Paging and Trunking services and taking into consideration the expected huge future demand in the mobile market. Here we would like to ask if the Mobile licensed operators are able to provide the Trunking Services by using the already allocated Cellular Mobile Radio Telephone numbering range. Please note that when the TRC clarifies its position regarding this issue, we will be able to provide our comments on the above TRC view in this regard.

Umniah

No comment

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VON Europe

No comment

Zain

We agree that the TRC should designate unused and unallocated numbers ranges beginning with 074 to be protected for future mobile services that might need more capacity than what is currently offered to mobile services.

Analysis

Three parties supported TRC's proposal to protect unused number capacity in the 074 range for future expansion of mobile services. However, two of the parties expressed concern that operators do (or are able to) provide trunking services using numbers ranges designated for other services.

TRC Conclusions

TRC will re-designate the unused capacity in the 074 range.

Paragraph 18 of the current issue of the Regulations provides TRC with the power to withdraw allocations that are not used in accordance with the allocation conditions. Paragraph 15 of the current issue of the Regulations includes the general condition on all allocations that the numbers allocated "…shall be used for the purpose specified in the application (e.g. including any classification by type or tariff as set out in the National Numbering Plan)". TRC propose to retain both of these paragraphs within the Regulations. If TRC becomes aware of any use of allocated numbers blocks that do not conform to the designations within the National Numbering Plan TRC would seek to resolve the situation in discussion with the operator(s) concerned, recognizing that the extreme solution is for TRC to withdraw the designation.

Question 9: Do you agree that allocation block sizes of 10,000 numbers will fulfil the extremely limited demand for numbers for Radio Paging and Trunking services? If not why not?

Orange Fixed

See Question 8

Orange Mobile

See Question 8

Umniah

We object to any number block allocation of below 1,000,000 to operators on the grounds that it is very cumbersome (switch resource intensive as well as complicating Interconnection billing systems) to define 10,000 or even 100,000 number blocks.

Zain

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We believe that the block sizes of 10,000 numbers are excessive for meeting the demand for numbers for Radio Paging and Trunking services. Zain Jordan believes that a block size of 1,000 numbers is more than adequate, but this too should be subject to analysis in the next NNP review.

Analysis

Two of the parties provided a general comment in response to this question as part of their response to Question 8.

The two parties that responded to the specific issue of this question provided opposite views with one arguing that blocks of 1,000,000 numbers should be used and the other that blocks of 1,000 numbers should be used.

TRC Conclusions

Whilst the TRC recognises that there are network efficiencies etc. resulting from the use of large number blocks, the National Numbering Plan already contains several number ranges that are allocated in smaller block sizes. Given our responsibility to manage the available capacity in a manner that achieves high utilisation, TRC do not consider it appropriate to use 1,000,000 number block sizes for some services. For this reason TRC will modify its proposal and adopt 1,000 number block sizes for the 074 range for Paging and Trunking services. This will allow TRC to withdraw block allocations as the services reduce and re-designate them for future mobile services and mobile service expansion at the earliest opportunity.

It should be noted that these block sizes will apply to this number range when used for Paging and Trunking services. TRC will make a decision on the appropriate block size for this number range when it used for mobile services, before the allocation the first of the blocks for these services.

3.2.3 Cellular Mobile Service

> **Question 10: What are the factors that you believe will influence demand for Mobile Services Number Capacity and what number capacity do you believe should be included in the National Numbering Plan?**

Orange Fixed

Orange Fixed strongly believes that new services such as Mobile Number Portability (MNP) and the development of NGN will be some of the major factors that influence the demand for mobile services number capacity.

Orange Mobile

Orange Mobile strongly believes that new services such as Mobile Number Portability (MNP) and the development of NGN will be some of the major factors that influence the demand for mobile services number capacity.

Umniah

Verizon's CEO stated publicly[1] that he expects 500% mobile penetration, due to an expected boom in machine-to-machine and person-to-machine applications. Umniah believes that the TRC should provide maximum flexibility going forward, and take into account possibility of a boom in usage.

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Factors that we believe will influence demand for Mobile Services Number Capacity include the emergence of new services and the fast growth in the data market including Machine-to-Machine applications (M2M). In particular, this includes the usage of SIMs for data services, which we believe is going to be subjected to higher demands in the medium to long term, which if this is indeed the case, then the current capacity of 28m numbers might be at risk of being inadequate. We therefore agree that the TRC may need to allocate numbers in the range 074 for future mobile services.

Analysis

There was a common view in the responses received that there will be new services that will create significant demand for additional mobile numbers, with an emphasise on the emerging Machine-to-Machine and Person-to-Machine services. One response suggested that the TRC view underestimated the potential demand.

TRC Conclusions

The responses confirmed the TRCs view that TRC must monitor the emergence of these services and be prepared to adjust the National Numbering Plan when there is clear evidence that additional capacity is required for mobile services. It is TRC opinion that the current capacity will permit a 400% mobile penetration (based on population prediction) and we do not anticipate a need to make any structural change the National Numbering Plan to accommodate the potential demand from these new services until towards the end of the Plans' design life (20 – 25 years). However, this is a long period, in the context of new telecommunications services, and TRC accept the need to monitor the development of these services and their impact on the capacity of the National Numbering Plan.

3.2.4 Other Services – Freephone

Question 11: What are your views on the TRC's proposals for Freephone numbers?

Orange Fixed

Orange Fixed would like to highlight the following:

1- At the current situation when a caller dials the destination, the caller is informed in advance with the duration that he/she can use according to the card balance, and he can drop the call without being charged. Accordingly, callers are aware and can abandon the call.
2- Orange Fixed supports the principle of maintaining the current situation as it is by maintaining the allocation of the range 080099 xxx for the calling card, since it is well known for customers that calls to destinations after dialing this format will be charged.
3- Orange Fixed completely rejects adding separate announcement hence it is too costly.

Orange Mobile

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Orange Mobile would like to highlight the following:

1. At the current situation when a caller dials the destination, the caller is informed in advance with the duration that he/she can use according to the card balance, and he can drop the call without being charged. Accordingly, callers are aware and can abandon the call.
2. Orange Mobile supports the principle of maintaining the current situation as it is by maintaining the allocation of the range 080099 xxx for the calling card, since it is well known for customers that calls to destinations after dialing this format will be charged.
3. Orange Mobile completely rejects adding separate announcement hence it is too costly.

Zain

Although we agree in principle that charging the calling customer should be made only after the customer is alerted with an in-call announcement, it in our opinion that the TRC needs to explain the underlying rationale for its amendment of the Free-phone Definition and the details of the customer alert procedures and their relevance to the duration of the call.

Analysis

The three responses that we received to this question supported the principle that callers should not be charged for a call to a Freephone number without being explicitly aware that a charge will be made. Two parties explained that the current arrangements achieve this objective. The third response sought greater clarification on our rationale.

TRC Conclusions

Prior to this review of the National Numbering Plan, the TRC had become concerned that customers may be mislead into being charged for calls made using Freephone numbers. TRC fully accept that the use of Freephone numbers for 'Calling Card' and other services is common in many countries and it would not wish to deny customers the benefit of such services within Jordan. However, avoiding customer misunderstanding is the prime reason for the proposed modification of the definition. TRC opinion is that the proposed approach will achieve this objective.

In modifying the definition TRC has not prescribed the form that the announcement must take, but required the customer to have clarity that a charge will be made for the call and to have the ability to abandon the call without incurring a charge. Should TRC receive complaints about the clarity of announcements then we would consider the complaint, as the consideration of all complaints, and may conclude that the form of an announcement must be modified.

3.2.5   Other Services – Access to Fixed Cost Services

Question 12: Are specific numbers still required for these Dial-up services? If so what are your views on the proposed approach by the TRC?

Orange Fixed

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Orange Fixed supports the TRC in its proposition and stresses that specific numbers are still required for Dial-up services, we support the TRC approach to maintain the current range (0810 xxxxx) and agree with the TRC to amend the name as in the Draft NNP "Access to Dial-up Internet services."

Orange Mobile

Orange Mobile supports the TRC in its proposition and stresses that specific numbers are still required for Dial-up services, we support the TRC approach to maintain the current range (0810 xxxxx) and agree with the TRC to amend the name as in the Draft NNP "Access to Dial-up Internet services."

Zain

We do believe that the specific numbers are still required for these Dial-up services. We also agree with the intention of the TRC to provide more clarity in the definition of these services in the NNP.

Analysis

All the responses received supported the TRC's proposal.

TRC Conclusions

We will implement the proposal.

3.2.6 Other Services – Shared Cost

Question 13: Do you agree that it is premature to remove the Shared Cost designation from the National Numbering Plan?

Orange Fixed

Orange Fixed supports the TRC in its approach that it is premature to remove the shared cost designation from the NNP.

Orange Mobile

Orange Mobile supports the TRC in its approach that it is premature to remove the shared cost designation from the NNP.

Zain

Based on the fact that the Shared Cost service is still unutilized in Jordan, we believe that the TRC should revise its designation of numbers for these services in the next review of the NNP and to evaluate the most likely possibility of removing it.

Analysis

All the responses that we received to this question supported the TRC's proposal to retain the Shared Cost designation within the National Numbering Plan. One response suggested that TRC should continue to review the need for such a designation during the next review of the National Numbering Plan.

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TRC Conclusions

TRC will retain the designation and further review it, along with all other aspects of the National Numbering Plan, during the next review.

3.2.7   Other Services – Fixed Cost

> **Question 14: What are your views on Operators being permitted to vary the cost of a call to a Fixed Cost number depending on either or both the calling customer's call package and the time of day that the call is made?**

Orange Fixed

Orange Fixed supports the TRC in such an approach since the market has a strong potential of developing in the future.

Orange Mobile

Orange Mobile supports the TRC in such an approach since the market has a strong potential of developing in the future.

Umniah

We oppose permitting such variation. Fixed cost numbers should have a fixed charge irrespective of call duration or of call package or time of day. This is the value of fixed cost numbers.

Zain

We support the principle that the TRC is going to adopt in regard to the Fixed Cost number i.e, to vary the cost of the call depending on either or both the calling customer's call package and the time of day that the call is made.

We disagree, however, with the TRC's intention proposed to make the cost of a call to a number of this range to be fixed irrespective of the duration of the call. The duration of the call is a factor that cannot be ignored.

Moreover, we need the TRC to kindly remove the protection of some sub-ranges within this number range to allow for the allocation of these sub-ranges. Our request for the allocation of a number block within this number range has been rejected based on the protection.

Analysis

TRC received a variety of views in response to our proposed modification to the definition of Fixed Cost calls. One response opposed any change, stating that 'fixed' must mean 'fixed' irrespective of any other consideration. The other three responses supported the proposal. One of these last three responses argued that call duration should be one of the factors used in determining the permitted 'fixed-charge'.

In addition, one party requested that all numbers within the range should be available for allocation.

TRC Conclusion*TRC concluded not to have any modifications to the current definition of the fixed cost services..*

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With regard to the protection of some sub-ranges, one of TRC tasks is to manage the available capacity in a manner that will allow future changes in the Plan structure as underlying demand changes. One of the techniques available is to protect contiguous number ranges, where there is adequate unprotected capacity to meet current and forecast demand. This provides the TRC with the opportunity to change the designation of such ranges during a review of the National Numbering Plan where there is evidence of a shortage of capacity in one area and excess capacity in others. Therefore TRC does not intend to modify the current protection status of blocks within the 087 range until underlying end user demand for these numbers justifies the removal of the protection

3.2.8 Premium Rate 09 Services

Question 15: Do you agree that the National Numbering Plan should be amended so that it is consistent with the Board Decision?

Orange Fixed

As the TRC is not addressing the points that should be amended to be consistent with the Board decision, we reserve our right to comment on this question once the TRC addresses the main points that should be amended in the NNP.

Orange Mobile

As the TRC is not addressing the points that should be amended to be consistent with the Board decision, we reserve our right to comment on this question once the TRC addresses the main points that should be amended in the NNP.

Umniah

MNO operators should not be allowed to influence the use of PRS numbers in a way to oblige PRS operators to have different access numbers from each network. The access numbers to a particular PRS service should be identical from all networks in Jordan.

Zain

To avoid any possible inconsistency with the Board Decision, we are of the view that the NNP should only refer to the respective decision (number and date of the decision as may be amended from time to time) and not duplicate the details of the decision. In this context, Zain Jordan respectfully suggests removing the two notes stated under sub articles 2.6.1 and 2.6.3 of Annex A to the consultation since they are not quite consistent with the Board Decision.

> ### Analysis
>
> *Three parties stated that the TRC's proposals are not consistent with the Board Decision, although only one helpfully explained the inconsistency. In addition, one comment specifically addressed the customer issue of having a single number to access any particular service, irrespective of the calling customers originating network.*
>
> ### TRC Conclusion

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The TRC considered a number of documents as an input to this review of the National Numbering Plan. These included the current National Numbering Plan and the Board Decision No. (1-6/2008). TRC have already included specific references to the Board Decision within the text of the proposed National Numbering Plan. Further, in the text of the Notice after this question, TRC explicitly propose some modifications to the Decision, which we consider further in the review of the comments on Question 16 below.

In the absence of specific details from two of the parties regarding areas where they believe we have failed to incorporate the Decision we are unable to respond further. Whilst TRC does not accept that the footnotes (which are in the current National Numbering Plan) contradict the Decision, TRC does agree that retaining them could lead to future ambiguity and so they will be deleted.

Question 16: What are your views on our proposals to modify the block size for Premium Rate and Premium Rate SMS numbers and to withdraw numbers that are currently unused by Content Providers?

Orange Fixed

Orange Fixed would like to draw your kind attention that there is no clear and specific definition for the terminology "content providers", hence the Board decision has defined operators and service providers only. Please note that the telecom licensed operators are applying for a PRS numbering range. Accordingly we agree with the TRC to keep allocating the block size of Premium Rate 09 services to blocks of 100 numbers but to be stated clearly "for the service provider holding a telecommunications license".

As for withdrawing the numbers that are currently unused by the content provider. Orange Fixed stresses that there is no clear definition of the content provider, we propose that a "content provider" to be a service provider that does not hold a telecommunications license yet falls under specific terms and conditions developed by the TRC, taking into consideration that changing the allocation block size for the service providers that do not hold a telecommunications license will cause an impact on the billing, reconciliation, and routing with the licensed operators, and this issue should be consulted with the industry according to the article 16 of the Instructions for Premium Rate Services (Issued according to the Board Decision No.(1-6/2008) Date(27/2/2008)).

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Orange Mobile

Orange Mobile would like to draw your kind attention that there is no clear and specific definition for the terminology "content providers", hence the Board decision has defined operators and service providers only. Please note that the telecom licensed operators are applying for a PRS numbering range as service providers. Accordingly we agree with the TRC to keep allocating the block size of Premium Rate 09 services to blocks of 100 numbers but to be stated clearly "for the service provider holding a telecommunications license".

As for withdrawing the numbers that are currently unused by the content provider. Orange Mobile stresses that there is no clear definition of the content provider, we propose that a "content provider" to be a service provider that does not hold a telecommunications license yet falls under specific terms and conditions developed by the TRC, taking into consideration that changing the allocated block size for the service providers that do not hold a telecommunications license will cause an impact on the billing, reconciliation, and routing with the licensed operators, and this issue should be consulted with the industry according to the article 16 of the Instructions for Premium Rate Services (Issued according to the Board Decision No.(1-6/2008) Date(27/2/2008)).

Zain

We do not support the TRC proposal to modify the block size of Premium Rate Services; we believe that the current size will meet the medium to long term capacity demand.

We also urge the TRC not to withdraw numbers that are currently unused and then to reallocate them again to different content providers, since this will disrupt the service provisioning for the consumer and will affect the overall consistency of the number block.

Analysis

Two parties expressed the view that the term Content Provider was not defined in either the proposed National Numbering Plan or the Decision. All three respondents to this question opposed the proposal to amend the block size from the decision and to withdraw unused numbers.

In addition one response to Question 15 is relevant at this point, concerning the customer issue of having a single number to access any particular service, irrespective of the calling customers originating network.

TRC Conclusion

The use of the term Content Provider was intended to be descriptive of a Service Provider with a Media Services License/ approval from the Audio Visual Commission (AVC) as defined in the decision. To ensure consistency TRC will adopt the terminology of the Decision.

Regarding the block size, as observed in the Notice, the current allocation policy leads to a low usage of the very limited resource for these services.. Notwithstanding the comments received by the TRC in response to this question we will proceed with the changes discussed in the Notice.

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> **Question 17: What are your views on our proposals to make available one range of Access Codes to be used for off-net directory and call centre services that are charged at a Premium rate?**

Orange Fixed

Orange Fixed believes that the TRC should provide a clear definition to the following terminologies: Call Center services, Customer care center Services, Commercial directory services. Further, Orange Fixed supports the concept of tariff transparency as stated in the Consultation Paper.

Bearing in mind that the new proposed access code with its services might lead to a contradiction with the above current defined services in the market.

Based on receiving TRC definitions, we reserve our right to comment on the above mentioned question.

Orange Mobile

Orange Mobile believes that the TRC should provide a clear definition to the following terminologies: Call Center services, Customer care center Services, Commercial directory services. Further, Orange Mobile supports the concept of tariff transparency as stated in the Consultation Paper.

Bearing in mind that the new proposed access code with its services might lead to a contradiction with the above current defined services in the market.

Based on receiving TRC definitions, we reserve our right to comment on the above mentioned question.

Umniah

Umniah Answer: Paragraph 65 says that 118 is protected for directory enquiry. This should not be defined too limitatively, as services are emerging which are closely related to directory enquiry and typically provided by the same companies. The EU has reserved 116 for services of social value (alerts on child abductions, people trafficking, etc).

Zain

It is possible to make one range of the access code (117xxx) for off-net directory and call centre services, and be charged at a Premium rate. Our concern here, however, is what will be the expected demand for this service and how the TRC will meet the possibility of an increase in such demand.

Analysis

The comments received requested clear definitions of the services that could be accessed by the code and concerns about the likely volumes of calls to the number.

One party commented at this point with respect to the 118 code and the interpretation of its definition. In addition they noted that the European Union has relatively recently reserved 116 for services of social value

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TRC Conclusion

The TRC introduced this code in the Notice in reaction to comments over a period of time from operators. Most operators had 'on-net' codes that they used for their customers to access these services relating to their own network, but they could not access the services when originating a call on another network. The issue is that when the call is made from another network the originating network has a reasonable expectation that they will receive some form of Interconnection payment for carrying the call. It is not the purpose of the National Numbering Plan to define the interconnection payments that should be made for these calls.

It is TRC opinion that the need for such a service is reasonable and that a specific code is required to facilitate the customer's understanding that they may be charged for the call, whereas it might be free if made using a different code on the network hosting the call centre etc. that they are trying to contact ('on-net' calls). In addition the use of a dedicated code range will assist the originating network route and bill for the call.

TRC will incorporate broad definitions that do not seek to constrain the market within the National Numbering Plan. In this respect we are aware of the ever increasing range o services provided under the description of 'directory enquiries' in a very limited number of countries. It is not for the TRC to comment on the interpretation of the term by the regulator in those countries, but until there is a broad international consensus on the extension of the term TRC will confine the service to the provision of telephone number information.

Regarding the potential contradiction between 117 and 118, TRC accept that this exists and we will monitor the use of 117 before the next review of the National Numbering Plan and consider the future designation of 118 at that time.

TRC is aware that a limited number of regulators are permitting extremely wide usage of the 118 code designated within the European Union for Directory Services. TRC is unaware of any European Union, ETSI or other body's endorsement of such usage of this code. Until guidance is available from an appropriate trans-national body we will continue with the traditional description of Directory Services that relates to the provision of telephone numbers in response to a valid enquiry.

TRC is grateful to be reminded of the recent European designation of the 116 code.

3.2.9 Access Codes

Type A Codes

Question 18: Please provide your comments on the TRC's proposals for Type A codes.

Orange Fixed

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In principle, Orange Fixed supports the TRC proposal for Type A codes and emphasizes that such codes should only be used for emergency purposes. The TRC should not allow any operator/entity to use such codes to convey any other kind of traffic. Further, Orange Fixed strongly believes that calls to these codes should always terminate at the relevant emergency center(s) having no technical possibility to reroute these calls to any other destination(s) outside the center(s).

Orange Fixed stresses that the holder of these codes should be legally obligated to restrict same from being abused.

Orange Mobile

In principle, Orange Mobile supports the TRC proposal for Type A codes and emphasizes that such codes should only be used for emergency purposes. The TRC should not allow any operator/entity to use such codes to convey any other kind of traffic. Further, Orange Mobile strongly believes that calls to these codes should always terminate at the relevant emergency center(s) having no technical possibility to reroute these calls to any other destination(s) outside the center(s).

Orange Mobile stresses that the holder of these codes should be legally obligated to restrict same from being abused.

Zain

Zain Jordan supports the designation of the 112 code as a common code to be used to access all emergency services through the Emergency Centre which has been established recently rather than using the 911 code. This will prevent the conflict which might occur in the geographic and mobiles numbers in the ranges 02, 03, 05, 06 and 07 and will also better utilize the usage of these number ranges.

Analysis

The comments received support the TRC's position but highlight the potential abuse of the codes by the destination service that may use the code as a general access number.

TRC Conclusion

TRC will proceed with the proposals and include emphasis that the codes are for emergency use only and not for general access. TRC recognise that the inclusion of such a statement will not prevent abuse of the codes it will permit subsequent actions to be taken.

Type B Codes

Question 19: Please provide your comments on the TRC's proposals for Type B codes.

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Orange Fixed

Orange Fixed and as mentioned earlier urges the TRC to set a clear definition to the following terminologies: Customer Care Center Service, Call Center Service, and Commercial Directory Service and to add to the new definition "and can be dialed and terminated as on-net calls as well".

Orange Fixed strongly disagrees with the TRC proposal that no call charges should be incurred when using Type B as access code to customer care center. We stress that the licensed operator should have the right to charge calls to such services in order to recover some of the cost that have been incurred whether through the interconnection between operators or by developing the customer call centers and improving the QoS. In addition, the principle of whether to charge or not to charge a certain service should be based on the service behind the used codes and not to the code type.

Orange Fixed is kindly requesting your clarification regarding the following statement mentioned in point 74 which states " The second are the Codes that a customer uses to contact the customer care center of their operator. There shall be no call charges incurred when using this service." We do not understand such a phrase hence we believe and based upon our own understanding that this statement should be under Access code C.

Orange Mobile

Orange Mobile and as mentioned earlier urges the TRC to set a clear definition to the following terminologies: Customer Care Center Service, Call Center Service, and Commercial Directory Service and to add to the new definition "and can be dialed and terminated as on-net calls as well".

Orange Mobile strongly disagrees with the TRC proposal that no call charges should be incurred when using Type B as access code to customer care center. We stress that the licensed operator should have the right to charge calls to such services in order to recover some of the cost that have been incurred whether through the interconnection between operators or by developing the customer call centers and improving the QoS. In addition, the principle of whether to charge or not to charge a certain service should be based on the service behind the used codes and not to the code type.

Orange Mobile is kindly requesting your clarification regarding the following statement mentioned in point 74 which states " The second are the Codes that a customer uses to contact the customer care center of their operator. There shall be no call charges incurred when using this service." We do not understand such a phrase hence we believe and based upon our own understanding that this statement should be under Access code C.

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Zain

We totally disagree with the TRC proposal to adopt the second service for these codes as free of charge: "………………., *there shall be no charges incurred when using this service."* But rather than to keep the definition of the services for Type B as in the current NNP

We support the TRC's intention NOT to force the changes of the existing services since the change from free phone numbers to type B will result in customer disruption.

Analysis

The three comments received objected to the inclusion within Type B of codes used for 'on-net' services which should be free of call charges. It was considered that this will introduce confusion into the definition. In addition the TRC was asked to define a number of terms within the National Numbering Plan.

TRC Conclusion

In making the proposals the TRC was seeking to address a number of comments that have been received over a period of time and their observations of the use of codes. TRC has considered further its proposals in the light of the comments received. TRC understands the issue being raised and will now designate these services as Type C for which a charge may be levied by the operator.

TRC conclusions to Question 17 accepted the need for broad definition of the terms used and they will apply to these services as well.

Type C Codes

> **Question 20: Please provide your comments on the TRC's proposals for Type C and 117 premium Rate codes.**

Orange Fixed

Orange Fixed emphasizes on the importance of removing the allocation process for these codes and to permit the licensed operators to use them as their own needs require and at the same time to inform the TRC about the using and charging of these codes. We also object on the charging principles stated in the definition of such an access code stated in the Consultation Paper 'any charge made for the call must be the same or less than the charge for on-net voice calls." Orange Fixed would

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like to draw your kind attention that charging the services provided by this access code is based on methodology adopted by TRC to define the interconnection services charges to guarantee the operator cost recovery.

As for 117 PR codes, the TRC has to set a clear definition of the services that can be provided through 117xx range; mainly TRC has to define

- Call Center services
- Customer care center Services
- Commercial directory services.

Such an issue should be consulted with the industry according to article 16 of the Instructions for Premium Rate Services (Issued according to the Board Decision No. (1-6/2008) Date (27/2/2008)).

Orange Mobile

Orange Mobile emphasizes on the importance of removing the allocation process for these codes and to permit the licensed operators to use them as their own needs require and at the same time to inform the TRC about the using and charging of these codes. We also object on the charging principles stated in the definition of such an access code stated in the Consultation Paper 'any charge made for the call must be the same or less than the charge for on-net voice calls." Orange Mobile would like to draw your kind attention that charging the services provided by this access code is based on cost methodology adopted by TRC to define the interconnection services charges to guarantee the operator cost recovery.

As for 117 PR codes, the TRC has to set a clear definition of the services that can be provided through 117xx range; mainly TRC has to define

- Call Center services
- Customer care center Services
- Commercial directory services.

Such an issue should be consulted with the industry according to article 16 of the Instructions for Premium Rate Services (Issued according to the Board Decision No. (1-6/2008) Date (27/2/2008)).

Zain

In addition to what has been stated in our response to question (17), we believe that the TRC shall keep the definition of the services for Type C as in the current NNP and we totally disagree with the TRC proposal to protect any codes from these ranges.

Analysis

The TRC received responses from three parties to this question. The comments received raised a number of different points:

- *Type C codes should be freely available for operators to use without undertaking the allocation process.*

- *No Type C codes should be protected.*

- *The proposed call price limitations will prevent operators recovering their reasonable costs through the Interconnection Agreements.*

- *The Type C definition should not be modified.*

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- *Definitions of terms should be included.*

TRC Conclusion

The points raised cover a widen range of issues and we consider them separately.

The first two issues identified above are similar. As stated in the Notice there is a significant proportion of the limited Access Code capacity designated as Type C. TRC continues to be concerned that the future demand for Type B codes, in particular, may exceed the available supply, especially as the market develops and more operators commence service, with a resulting demand for codes for 'network selection purposes. However, TRC is not yet in a position to quantify such demand and therefore cannot predict how many, if any of the currently designated but unused Type C code may be required for this purpose.

Notwithstanding this, TRC recognises that the logic of the purpose of Type C codes implies that they should be readily available for operators to use. Consequently, TRC will continue with the current allocation procedure and code protection until the estimation of the quantity of codes that may be required for 'network selection' purposes can be done. Once TRC has made the resulting adjustments to the code designations it is the intention to remove the allocation restrictions for the remaining Type C codes, subject to the circumstances at the time that we have concluded the analysis.

TRC understands the need of operators to recover their costs through Interconnection Agreements and that these may have implications for the cost of a call to the originating customer. Yet both the current National Numbering Plan definition and the proposed definition limit the use of these codes to calls that terminate on the same network as they originate. Therefore there are no interconnection costs involved with calls made using these codes, other than possible transit cost depending on the operators chosen call routing arrangements. Consequently TRC does not accept that its proposed definition is unreasonable in this respect. Given that only the code 117 may involve 'premium' call charges, the proposed enhancement of the definition adds clarity of the use of these codes.

TRC has already concluded that it should include broad definitions of the terms used in our consideration of earlier questions.

3.2.10 Future Expansion of the National Numbering Plan

Question 21: Should the TRC provide indicative information on how they might extend the capacity of the National Numbering Plan with the PLAN?

Orange Fixed

Orange Fixed believes that the TRC should provide indicative information on how it might extend the capacity of the National Numbering Plan with the PLAN with sufficient lead time to the implementation of not less than 6 months so that the operators can comply and set up their billing systems, networks, and switches according to the new changes.

Orange Mobile

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Orange Mobile believes that the TRC should provide indicative information on how it might extend the capacity of the National Numbering Plan with the PLAN with sufficient lead time to the implementation of not less than 6 months so that the operators can comply and set up their billing systems, networks, and switches according to the new changes.

Zain

Based on the TRC's statement that it will undertake an appropriate consultation on the details of future expansion of the NNP and will seek the opinion of the network operators at the right time, we agree with the TRC's provision of indicative information on how it might extend the capacity of NNP.

Analysis

Three responses were received all supporting the provision of indicative information, subject to sufficient notice of the changes before they are implemented. One party noted and supported the TRC's intention to undertaken a consultation that reflected the circumstances at that time before proceeding with the implementation.

TRC Conclusion

TRC will include the indicative information in the National Numbering Plan.

3.3 Emerging and Future Services

3.3.1 Voice over Internet Protocol Telephony

Question 22: What are your comments on our position that geographic Numbers must not be used for Nomadic Services?

Orange Fixed

Orange Fixed supports the TRC position that Geographic Numbers must not be used for Nomadic Services; this will avoid customers' confusion and dissatisfaction. Further, using ranges from fixed geographical numbers will impact the tariff transparency.

Orange Mobile

Orange Mobile supports the TRC position that Geographic Numbers must not be used for Nomadic Services; this will avoid customers' confusion and dissatisfaction. Further, using ranges from fixed geographical numbers will impact the tariff transparency.

Umniah

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Umniah believes that not permitting use of geo numbers for nomadic services is a major impediment to development, and that the TRC's reasoning to continue to prevent this is flawed.

VON Europe

In general, VON believes that no separate numbering range should be required for new innovative applications and services, including offerings that make use of VoIP.

Experience from other countries shows that consumers are reluctant to call to (or call back to) new numbers (as there is uncertainty about the retail price) or switch to new numbers. In addition, established operators are often slow in implementing new numbering ranges (and in some cases they refuse unless required to do so) and/or create difficulties in interconnect negotiations relating to termination rates to new number ranges. Such delays in a sector that changes constantly and at an increasingly rapid pace create irredeemable damages.

VON believes that it would not be appropriate to determine and impose the use of any number, number range or identifier for "VoIP services" or any services and applications that enable outbound calls, as this entails risks of forcing all providers into a particular business model and into a particular 'expectations model', with associated procedures and costs, which may prevent the emergence of innovative uses of VoIP technology. We would also add that VoIP technology can be used to develop not only 'fixed telephone service-style' usage scenarios, but also very different usage scenarios (e.g. outbound communications (not only voice) initiated by humans or machines from software applications on PCs, consoles, mobile devices, etc.) with no predetermined usage pattern or location expectation.

In summary, VON is of the opinion that the TRC's proposal is rooted in a traditional 'Plain Old Telephony Services' paradigm and is unsuitable to accommodate current and future developments that are and will be highly beneficial to the Kingdom of Jordan's citizens, public administrations and economy.

Zain

The TRC's position that the Geographic Numbers must not be used for the Nomadic Services is justified in that it prevents possible customer confusion regarding call tariffs and the subsequent customer dissatisfaction, but at the same time, we request the TRC to clarify and state the steps it will undertake in order to resolve the issue of the Geographic number ranges already allocated and used for the Nomadic Services.

Analysis

All parties provided responses to this question, with three supporting the TRC's position; one party suggested that our reasoning is flawed, without explaining what that flaw is and one party arguing at length that our proposed evolution of the National Numbering Plan would limit operators' ability to introduce innovative services.

One party suggested that there are a limited number of cases where Geographic Numbers are being used for Nomadic Services.

TRC Conclusion

TRC has reviewed its original proposals and the guidance offered by the European Regulator's Group in the light of the comments received. In undertaking this further review TRC has been conscious that the National Numbering Plan must address legacy networks and services and support service innovation. In this context it is

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important that the National Numbering Plan evolves to address service innovation. Any other approach introduces a very significant risk of customer confusion with the changes and (potentially) causes costs for existing operators that can only be justified in the expectation of future customer benefits.

Further, TRC has noted that the General Requirement e) includes the design principle:

"Significance in the first few digits of national numbers to enable callers to recognize service characteristics and call charges…".

When seeking views on the General Requirements (Question 2) TRC received a number of suggested changes, but no party suggested that TRC should modify this particular General Requirement.

TRC has concluded that it should adopt its original proposals. Once this has been adopted by the Board TRC will review with operators their current use of numbers for Nomadic Services. If TRC identifies any non conformant situations TRC will design specific migration plans to move the service to the appropriate number ranges.

Question 23: What approach do you believe the TRC should adopt for numbers to be used for Location Independent Services?

Orange Fixed

Orange Fixed supports the TRC position to continue using 087 ranges for location independent.

Orange Mobile

Orange Mobile supports the TRC position to continue using 087 ranges for location independent.

Umniah

Same as above answer to Q22.
They should be allowed to use numbers designated as "Cellular Mobile". VoIP is a technology and should be permitted to be implemented in association with any number.

VON Europe

Moreover, VON believes that it is in the interest of Jordanian citizens and the economy for the TRC to focus its attention on putting in place the building blocks of a forward looking framework for all information society services, focusing on delivering choice and innovation to consumers, rather than sticking to obsolete principles, with the ensuing compliance issues. The TRC should undertake a profound review of its Numbering Plan, to truly make it technology neutral.

VON therefore considers that the way forward is discarding location information, and that the suggested alternatives will benefit no one.

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Location information of geographic numbers is a legacy from the Plain Old Telephony Services, where habits were not what they are today. In recent years, people have become more flexible, ready to move and travel at any time. Mobile phones have long overtaken fixed phones in Jordan and calling your plumber happens more often than not on his mobile phone. Soon, your toilet will be able to call the plumber on its own initiative!

This important change in the general way of life, and the evolution of technology, have an impact on the features customers are demanding. Both business and residential customers request innovative possibilities including nomadicity. Today, the relevance of geographic numbers is fading, services are no longer linked to the location information, rather to personal information and service and application features.

This is confirmed in practice by the increasing switch to mobile phones. Mobile Internet devices will only enhance that trend. It also seems in contradiction with the fact that many consumers increasingly want to be connected all the time and everywhere, which usually implies increased mobility.

Moreover, in reality geographic numbers are increasingly not representative of the location of a called party: for example, with call forwarding, a call to a number supposedly located in a specific geographic region, could very well be forwarded to an entirely different place. This link to geographic locations disappears even more when thinking of an NGN environment, characterized by the switch to an all IP world.

Furthermore, VON believes that preserving location information in geographic numbers would keep an additional barrier for new entrants, especially those providing innovative applications and services and including use of geographic numbers, because users demand geographic numbers.

In terms of numbering, it has long been considered that the primary distinguishing feature of geographic numbering is that is has geographic significance. This was linked to the fact that a geographic number was in the past associated to a tariff range, an expected call quality and a specific location of the recipient of the call.

In an IP world, many of these features are totally irrelevant. Currently, many providers of VoIP enabled offerings, provide the possibility to call for free or at very low flat fee tariffs that are the same regardless of location. In parallel, people divert their fixed phones, or even abandon them to exclusively use mobile phones.

It is therefore becoming increasingly obvious that consumers are no longer truly concerned with location information, but rather with the cost of calling. Consequently, the reason why geographic numbers are used by residential and business customers is because of the retail price transparency.

VON therefore strongly believes that geographic numbers are most suitable to open up VoIP opportunities to the mass market, given that consumers are highly familiar with those types of numbers and end user tariffs are transparent (or at least not less transparent than other types of numbers).

Moreover, from a technical point of view, non-geographic numbers are not always reachable from all networks, and are in many cases not reachable or only reachable against higher tariffs for the calling party from another country.

Therefore, VON strongly encourages the TRC to focus its attention on ensuring the fullest possible retail price transparency, rather than creating additional obligations

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on usage of certain numbers, and to remove the link between location information and geographic numbers.

Zain

We agree with the TRC's intention to use 087 blocks for the Location Independent Services, but we would like to refer to our comment on Question 22 above in regard to the issue of previous allocation of geographic (06) block for Nomadic services.

Analysis

As with the previous question there are two distinct views on our proposals. Those parties supporting our proposal on number ranges for Location Independent Services also support our proposals to use the 087. Those parties who argued for the use of existing number ranges, including geographic numbers opposed the use 087, argued that no specific number range should be designated.

TRC Conclusion

In considering the responses to Question 22, TRC concluded that a dedicated number range should be designated for Location Independent Services. Therefore, given the support for its proposed use of 087 and the absence of suggestions of other dedicated number ranges that should be used, TRC will adopt the proposal.

Question 24: Do you agree that the termination of calls to numbers from the Jordan National Numbering Plan should be in accordance with the ITU Recommendations?

Orange Fixed

Orange Fixed agrees with the TRC proposition.

Orange Mobile

Orange Mobile agrees with the TRC proposition.

Umniah

Umniah sees this as placing restrictions for the sake of restrictions.
We do not support any restriction to be placed to oblige a certain dialling procedure in this case and view that the ITU recommendations are not obligations. So, the TRC statement: "we wish to fulfil our obligations under The ITU recommendations" is flawed.

VON Europe

VON Europe would like to come back on the fact that the TRC mentions the principle of technology neutrality in paragraph 94 of the Notice and seems to consider that its numbering plan abides by the principle of technology neutrality. The principle of technology neutrality (that regulation should not favor any particular type of technology) is a key aspect of many regulatory frameworks. Technology neutrality requires that the TRC should not take into consideration the technology used to deliver a particular service, application or solution.

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The approach to numbering should not be one of obligations vs rewards. Nor should it be one that is unable to encompass and embrace the imminent changes brought by convergence of all networks and the switch to an all-IP environment, and the increasing role of Internet applications on fixed and mobile devices. Instead of tinkering with its existing Numbering Plan, the TRC should step back and consider reviewing more fundamentally its entire approach to numbering, through a dialogue initiated with all stakeholders, including end-users. Numbers, including geographic numbers, should be eligible to be allocated to any provider or user and should be eligible to be used by end users outside of the traditional telephone zones or other boundaries, **including on a trans-national basis**.

Interpreting ITU Regulations and rules as restricting the access to and use of numbers cross-border is inaccurate, as demonstrated by the fact that countries such as the U.S., Denmark, Estonia and the UK do not implement such artificial barriers.

Zain

Whilst Zain Jordan is in agreement with the implementation of ITU Recommendations, we believe that the amendment of the conditions placed on the allocation and reservation of numbering capacity requires a thorough investigation, seeking the operators' feedback to the TRC regarding the current techniques for call routing and only then can proper procedures be imposed.

Analysis

Two parties supported the TRC's position, with one party suggesting that further analysis is required although they did not explain their specific concerns and the issues that should be addressed in such an analysis. The remaining two, parties that had argued in response to the previous questions that the TRC should introduce a new numbering paradigm, argued that the restrictions were unnecessary and restrictive with one of them suggesting that the TRC should permit calls made using Jordan E.164 to be terminated in other countries. In support of this view they cited a limited number of countries that do permit trans-national termination. One party questioned the use of the term obligations with respect to ITU Recommendations.

TRC Conclusion

The ITU recommendations relating to numbering for public telephony services are based on the concept that each country has sovereignty over its affairs, including the National Numbering Plan. It is for this reason that the international telephony numbering system is based on a series of country codes and establishes common principles for the individual countries to adopt with respect to their National Numbering Plans.

TRC accept that these are recommendations and that the TRC has no overriding international obligation to adopt them. However, the global 'telephony network' only functions efficiently because all countries adopt these Recommendations and thereby avoid the need for numerous bilateral agreements. Therefore, it is our view that these recommendations form de facto 'obligations' unless there are compelling reasons to adopt exceptional non-conformant solutions.

TRC also recognises that the global IP Network(s) is separate and distinct from (but interconnected to) the public telephony networks. However it has not yet replaced the public telephony networks.

Consequently, it is TRC view that the National Numbering Plan of Jordan can only apply to telephony terminations within the country and the tit would be infringing the rights of other sovereign states and their National Numbering Plans if it permits

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calls made using Jordanian numbers to be terminated outside of the country. TRC acknowledge that some other countries have adopted an alternative interpretation of the situation but does not see any international consensus at the ITU, or elsewhere for that approach. In reaching this conclusion TRC endorse the specific exceptions contained in ITU Recommendations as noted in the footnote to the Notice.

3.4 Administrative Amendments to the National Numbering Plan

Question 25: What are your views on the proposed administrative changes to the National Numbering Plan?

Orange Fixed

Orange Fixed strongly believes that the proposed administrative changes to the NNP will have a significant material impact on licensees as the TRC has proposed several changes on the PRS allocation numbering ranges mechanism, and the definitions of the access codes especially type B & C.

Orange Mobile

Orange Mobile strongly believes that the proposed administrative changes to the NNP will have a significant material impact on licensees as the TRC has proposed several changes on the PRS allocation numbering ranges mechanism, and the definitions of the access codes especially type B & C.

Umniah

> *Paragraph 125. Section 2.8(b): include '+' as a valid code for international calls from mobile devices.*

Umniah Answer:
prevents the +0+ or other alternative international dialling codes, which is something that a licensee may want to use. There should be no restriction on the use of special non-number prefixes such as *00 or #00 or #+ to be assigned by operator to differentiates prices for the same service with different quality.

> *Paragraph 126: Section 2.8 c): Clarification added that the caller is able to choose the form of the number that they dial to call a local number.*

Umniah Answer:
it is unclear if the text intends to restrict alternate international dialling codes such as *00 or *+ or #00 or similar which are needed to enable the network to allow selection among International service quality and price. (as Umniah envisaged in the past).

Zain

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We agree with the TRC that the changes are not material. In this context, please note the wrong reference made in the second line of section 2.4 of Annex A, where it says "as shown in the structure table in section 2.9".

Analysis

TRC received a diversity of comments in response to this question from four parties. One supported TRC view and (helpfully) highlighted an incorrect cross reference within Annex A. Two parties disagreed with TRC view and argued that the changes were substantial, however the examples that they used referred to proposal earlier in the Notice about which TRC had asked specific questions. The fourth party raised specific concerns relating to paragraphs 125 and 126 and the use of non number prefixes.

TRC Conclusion

With hindsight, TRC believes that it would have been clearer to include this question after paragraph 129, as the reference in the text to non-material changes referred to the subsequent paragraphs and not earlier proposals. In that context TRC agrees that the examples quoted by two parties are material and it explicitly sought views on its proposals for these issues earlier in the Notice. TRC noticed that neither of these parties raised any concerns regarding the detailed points in paragraphs 116 to 129 of the Notice and concludes that the proposals in these paragraphs do not concern the two parties.

TRC will correct the inaccurate cross reference in the final Decision.

The change described in paragraph 125 is to include the use of ' + ' (which is permitted in the GSM standards) an alternative to the traditional prefix '00' for International calls. This will align the National Numbering Plan with the appropriate standards and existing practice.

The change to paragraph 126 relates only to dialling within a Governate from a fixed-line handset to another fixed-line handset using Geographic Numbers. Therefore comments regarding international calls are not pertinent to this paragraph.

However the comments about the use of prefixes are important and the TRC wishes to address them. The National Number Plan already makes provision for codes that should be used for Network Selection purposes. TRC has not included any restrictions on the networks that can be selected using these codes and therefore they can be used for selecting international networks with different quality and price characteristics. TRC would point out that once such a code has been allocated it is available for all operators to use for the selection of the same network.

TRC are also aware that it is common practice for customers who dial international numbers to programme the numbers, including the international prefix, into the 'address books' in their handsets. If these numbers include unique non numeric characters any calls made by these customers when roaming in other countries will fail. Therefore, TRC does not consider it to be a customer benefit to sue these characters as part of an international prefix, especially as an alternative is available as explained above, although TRC does recognise that these network selection codes are only usable within Jordan.

*Further the use of the * and # characters are governed by GSM standards (GSM 02.90, GSM 03.90 and others). TRC has chosen not to regulate the use of these characters within the National Numbering Plan at this time. However if the use of these characters is no conformant to relevant standards TRC may opt to include their regulation within the National Numbering Plan.*

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4 Regulations for the Allocation and Reservation of Numbering Capacity

4.1 Temporary Allocations

> **Question 26: What are your views on the TRC's plans for temporary allocations of number capacity?**

Orange Fixed

Orange Fixed supports and agrees with the TRC position regarding not to limit specific ranges for temporary allocation. But Orange Fixed has a major concern and rejects what was mentioned in the draft regulation for allocation and reservation of number capacity (article 24) that the withdrawing of the temporary allocation will be automatically after 3 months of the allocation date. Orange Fixed believes that the due date to release such temporary allocations might not be met by the applicants due to reasonable justifications and accordingly the TRC should provide a more reasonable time frame for renewing the temporary allocations once reasonably justified by the applicants.

Orange Mobile

Orange Mobile supports and agrees with the TRC position regarding not to limit specific ranges for temporary allocation. But Orange Mobile has a major concern and rejects what was mentioned in the draft regulation for allocation and reservation of number capacity (article 24) that the withdrawing of the temporary allocation will be automatically after 3 months of the allocation date. Orange Mobile believes that the due date to release such temporary allocations might not be met by the applicants due to reasonable justifications and accordingly the TRC should provide a more reasonable time frame for renewing the temporary allocations once reasonably justified by the applicants.

Zain

We agree with the TRC's plans for temporary allocations of number capacity, in particular with respect for the time period proposed (3 months).

Analysis

TRC received comments from three parties on this question. These parties support the proposed approach, with one explicitly supporting our proposal to limit the allocation to three months, whilst the other two parties raised theoretical concerns that this period my be short in practice for legitimate reasons, without indicating what those reasons might be.

TRC Conclusion

As it is explained in the Notice, the TRC has limited experience of temporary allocations. Given the clear support fro a three month period from one party and only a theoretical concern about the period from the other two parties; TRC intends

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to adopt the proposals. In doing so TRC will monitor the situation and if identifies that the three month period is too limiting for legitimate use of these allocations then will modify the temporary allocation period.

4.2 Reservation Period

Question 27: What period do you think is appropriate for reservations of number capacity? Why is that the appropriate period?

Orange Fixed

Orange Fixed believes that a period of 12 months is preferred; operators will have enough time to tune their network and set up the billing systems and conduct their internal testing. Such a period will ensure efficiency and the saving of time for both the TRC and the operators.

Orange Mobile

Orange Mobile believes that a period of 12 months is preferred; operators will have enough time to tune their network and set up the billing systems and conduct their internal testing. Such a period will ensure efficiency and the saving of time for both the TRC and the operators.

Zain

The proposed period of 12 months is appropriate. Given that the reservation renewal is possible, we see that the TRC's proposal would meet the operators' needs in this regard.

Analysis

The three parties that offered there views supported the TRC's proposals.

TRC Conclusion

TRC will adopt the proposed reservation period of 12 months

4.3 Quarantine Period

Question 28: What period do you think is appropriate for a number to be in Quarantine? Why is that the appropriate period?

Orange Fixed

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Orange Fixed believes that the TRC needs to differentiate between numbers allocated by the range holder (operator) to their customers and the numbers / ranges allocated by the TRC to the operators. In the first case the quarantine period should be 30 days, while for the second case the period should be six months. Taking into consideration that the TRC should be flexible while addressing such a matter to leave room to deal with some special cases for numbers and codes to avoid negative impacts on end users or services provided to the end user where a withdrawal and an allocation of certain numbers and codes should be done simultaneously.

Orange Mobile

Orange Mobile believes that the TRC needs to differentiate between numbers allocated by the range holder (operator) to their customers and the numbers / ranges allocated by the TRC to the operators. In the first case the quarantine period should be 30 days, while for the second case the period should be six months. Taking into consideration that the TRC should be flexible while addressing such a matter to leave room to deal with some special cases for numbers and codes to avoid negative impacts on end users or services provided to the end user where a withdrawal and an allocation of certain numbers and codes should be done simultaneously.

Umniah

12 months if there is plenty of room (which is the case); 6 months minimum otherwise.

Zain

Zain Jordan believes that a period of three months for a number to be in quarantine is appropriate. It is our opinion that such period will achieve the balance between the efficient use of the number capacity and the prevention of customer inconvenience.

Analysis

Four parties provided their views to the TRC on the appropriate quarantine period. Their views varied and two parties proposed that the TRC should distinguish between numbers that had been in-service with customers and numbers that had been allocated by the TRC to operators but not brought into service with customers.

There was no consensus amongst the various parties about the appropriate period with periods ranging from 3 months to 12 months for numbers that have been in service with customers. Thirty days was suggested for numbers that have not been in service with customers.

TRC Conclusion

In proposing to adopt a specific period the TRC is primarily concerned with avoiding customer inconvenience. Therefore TRC will confine the change to the Regulations to that circumstance. Given the wide range of suggestions, with no clear consensus, TRC will adopt a period of six months. As with all aspects of the National Numbering Plan and the Regulations, this will be reconsider during the current reviews discussed in Question 1.

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4.4 Notification of Allocations

> **Question 29:** If you do not agree with the TRC's position, please explain why the TRC, and not the operator receiving the allocation, should formally notify all operators about number range activation.

Orange Fixed

Orange Fixed stresses that the TRC should be responsible of notifying all licensees of the new activations to the licensees' number(s) and should intervene to obligate the other licensees of the activation of these new ranges in their network. The TRC should supervise and ensure that once an approval for activation is granted any delaying tactics conducted by operators should not be tolerated.

Orange Mobile

Orange Mobile stresses that the TRC should be responsible of notifying all licensees of the new activations and should intervene to obligate the other licensees to activate these new ranges in their network. The TRC should supervise and ensure that once an approval for activation is granted, any delaying tactics conducted by operators should not be tolerated.

Zain

We support the position of the TRC in this regard, based on the fact that the operators have a better knowledge of the commercially agreed and/or the regulatory mandate Interconnection payments. TRC intervention might provide potentially inaccurate information that may have further implications.

Analysis

Three parties offered their views on the responsibility for the notification to all operators of number allocations to a specific operator. Two of the parties strongly argued that it should be the TRC that makes the notification as they believe that this will avoid delaying tactics by other operators.

The third party recognised that the operator allocated the number block is able to provide the most accurate information within the notification to other operators and that they are therefore in the best position to provide the notification.

TRC Conclusion

All operators have an obligation to route calls to allocated number blocks once they have been activated. The TRC accepts that it have a regulatory duty to take appropriate action if operators fail in this obligation. However, TRC is not persuaded that the source of the notification (operator or TRC) of the activation of an allocated number block will overcome unreasonable delaying tactics (if they exist). If an operator that receives a notification has concerns about the validity of the allocation, he can always refer to the TRC's web site, or the TRC's number management team if the web site is unavailable, to seek clarification of the allocation status.

Therefore TRC will adopt the change.

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4.5 Efficient use of the Number Capacity

> **Question 30:** What are your views on the proposed Utilisation formula and thresholds?

Orange Fixed

Orange Fixed strongly suggests that for mobile other factors need to be included in the Utilization formula such as (used for roaming, for internal purposes, ported in, available for service, programmed into SIMs but not in service) as the number of factors included in the figure 4 are not considered by the formula proposed by the TRC.

Orange Mobile

Orange Mobile strongly suggests that for mobile other factors need to be included in the Utilization formula such as (used for roaming, for internal purposes, ported in, available for service, programmed into SIMs but not in service) as the number of factors included in the figure 4 are not considered by the formula proposed by the TRC.

Umniah

Umniah is not convinced that there is a need for a formula. Example: The case of an operator seeing a service have massive take-up, or signing up a reseller/MVNO using their numbers, leading to sudden explosion of needs. In this case, the operator could ask TRC for a less strict treatment, justified by explicit facts.

Zain

Zain Jordan welcomes the intention of the TRC to monitor the efficient use (utilization) of the numbering capacity. However, and as the TRC has mentioned in the consultation, there is no ITU or other standards bodies guidance in this respect, Zain Jordan believes that the TRC should start with a cautious threshold and review this as time goes by. In this regard, Zain Jordan proposes to adopt a utilization of 60-65%, except for individual numbers, where Zain Jordan agrees with the TRC that it should be a 100%. On the other hand, Zain Jordan believes that more clarification is required as to what is meant by "Quantity of Numbers in service".

Analysis

There was a complete absence of a consensus amongst the four parties responding to this question. One party argued that the adoption of a formula could limit market growth in certain circumstances; one party welcoming the approach but suggestion a cautious approach is necessary, building on experience as it is gained; and the other two parties arguing for comprehensive formula that explicitly encompasses all factors.

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TRC Conclusion

The TRC recognises that, in the absence of international standards or publication of extensive international experience on the use of utilisation factors, an overly aggressive approach could cause unreasonable difficulties to operators. TRC noted that the suggestions that it should adopt a comprehensive formula, but without the benefit of clear international experience of the impact of the various factors, TRC is concerned that it could create unnecessary restrictions on operators that will be at different stages of developing their market.

Conversely, TRC does not believe that it can manage the available number capacity in a fair manner and is neutral in a competitive market without the adoption of a transparent approach to utilisation thresholds that provides 'regulatory certainty' for all operators.

TRC therefore welcomes the suggestion that it should adopt the straightforward formula but initially set the thresholds in a cautious manner so that the TRC and the operators can gain experience of the approach within Jordan.

Consequently, TRC will adopt the proposed formula, but reduce the values of the initially proposed thresholds to 70% for all services, except those where the number capacity is allocated as individual numbers. TRC anticipates that experience will demonstrate that different values should be used for Geographic and other services, so it will retain this distinction in the Regulations, although it will use the same threshold value for both at this time.

In reaching this conclusion, TRC would encourage operators that have clear, specific, detailed evidence that the threshold values (once implemented) are creating operational problems to share this with the TRC so that it can monitor the effectiveness of the approach.

TRC also noted the request for clarification of the term 'Quantities of Numbers in Service' and accepts that operators can expect some certainty in this area. In seeking to provide clarity to operators TRC again refers to the absence of both standards guidance and definitions within the National Numbering Plans of other countries, as it is observed in the Notice. Therefore TRC proposes to adopt a pragmatic approach to 'in service'. If the number is dialled and ring-tone; engaged; voicemail or equivalent is received by the caller then the number will be deemed to be in-service. If number unobtainable tone or equivalent is received then the number will be deemed to not be is service. TRC emphasise that this is an initial pragmatic approach and that it could be open to abuse by operators, but it would rather adopt this method of working than, as noted earlier, adopt an aggressive approach and inadvertently cause problems for operators.

4.6 Administrative Amendments to the Regulations

Question 31: Do you agree that the TRC should make the identified administrative changes to the Regulations?

Orange Fixed

Orange Fixed believes that the sequential allocation should be for the same operator in order limit the analysis depth in call routing. The TRC should also address the issue with golden numbers.

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Orange Mobile

Orange Mobile believes that the sequential allocation should be for the same operator in order to limit the analysis depth in call routing.

Zain

We believe that any administrative changes to the Regulations should be carried out after a thorough consultation and by seeking opinions from related parties. Although the TRC does not believe that any of the administrative changes are material and consequently did not ask views on the individual changes, we see that some of these changes might have implications and impact, in particular the issue of direct transfer of numbers between allocated parties and the imposing of sequential allocation of blocks.

Analysis

Three of the five parties responded to this question and thereby implied or stated that they believed that the proposed changes were material. All the responses mentioned the proposal for sequential allocation of the number blocks and one raised the issue of transfer of numbers between parties. It was also suggested that this consultation was insufficient for these changes.

TRC Conclusion

The TRC clearly identified the three proposed changes within the Notice. TRC recognises that it did not ask individual questions regarding each of the proposed changes but only included a single question. Nonetheless, with only three questions covered by Question 31 interested parties were able to fully explain their concerns about the proposed changes and thus we have conducted an appropriate consultation. TRC has formed this view taking account of the initiation to provide comments contained in paragraph 8:

> _"The TRC invites interested parties to submit written comments on any issue that they deem to be relevant with respect to the National Numbering Plan and the related Regulations... Where an interested party has a different view to that of the TRC, they should explain the reasons for their view. Interested parties are encouraged to submit comments regarding these proposals to the TRC..."_

The National Numbering Plan explicitly avoids designating number capacity for individual operators as we believe that this is potentially anti-competitive and does not provide the TRC with the necessary flexibility to allocate number capacity as the market share of individual operators varies with time. It also ensures that new operators can be allocated appropriate number capacity without a need to change the National Numbering Plan. This aligns with the General Requirement f):

> _"A neutral position in the allocation of numbering capacity, to support fair competition where multiple operators are competing to provide service to existing and new customers"_

If TRC accepted the suggestion that sequential allocation should be for the same operator, it would create a de facto designation of specific capacity for individual operators. Therefore TRC does not accept the suggestion.

It is unclear how the clarification to the transfer of ported numbers will create difficulties for operators. The introduction of Number Portability is an entirely separate exercise from this review of the National Numbering Plan, and the objective is to ensure that the National Numbering Plan reflects the wider regulatory environment within Jordan. Therefore TRC will adopt the proposed change.

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5   Comments on Annexures

One party accepted the TRC's invitation in paragraph 8 of the Notice to provide comments on any aspects of the Notice and helpfully included detailed comments on specific points within the Annexures.

ANNEX A

> *Paragraph 2.4.1 Personal Number Services*
>
> *Numbers in the range 0700 AB xxxx to 0709 AB xxxx have been designated for Personal Number Services, where A and B are in the range 0-9. Allocations of numbering capacity in this range will be made in blocks of 10,000 numbers.*
> *Note: A Personal Number does not have a permanent association with any network termination point. When a call is made to a personal number, it is used to interrogate a database and obtain a translation from the Personal Number to the number of a network termination point or IP Address to which calls are to be routed. The call routing number can be changed in some way by the customer and may change depending on the time of day, the day of the week or some other criteria. The service provider(s) offering the Personal Number Services shall maintain the routing database and provide the call routing information to the call originating network on demand, either in real time as the call is initiated or by data downloads depending on the preference of the call originating network operators. The provision of this routing information may be through the call being initially routed to the Personal Number service provider who then undertakes the number translation and forwards the call to the correct terminating network.*
> *The calling customer shall be charged for the call in a manner that is independent of the actual call routing of an individual call.*
> *Business customers2 may be assigned one Personal Number by their Operator / Service Provider3.*
> *User ENUM is a particular realisation of this database interrogation call routing and so Personal Numbers will be used within Jordan to indicate the identity of a customer when performing a number / address look-up in User ENUM.*

Umniah comment:
0700 personal numbers have failed to take off everywhere; it's therefore difficult to defend reserving such a large proportion of the numbering resources for this sole purpose. Footnote 2 further restricts use unnecessarily.

More generally, having mobile and personal with the same '7' digit may cause issues with fixed and mobile terminating rates going forward.

Analysis

Paragraph 2.4.1: The party noted that Personal numbers have not received widespread usage and questions the need to dedicate this amount of capacity within the National Numbering Plan. They also raised concerns that using digit '7' for mobile and personal numbers may cause issues going forward.

TRC Conclusions

TRC acknowledges that a significant proportion of capacity is dedicated for this service. In response to its question regarding the capacity for Shared Cost services TRC received support for its position that the current available capacity within the National Numbering Plan permitted the continuation of the designation for the time being. Given TRC proposed

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inclusion of ENUM within this designation we believe that it would be premature to reduce the capacity.

TRC is aware of a number of National Numbering Plans where there are mixed services utilising the same initial digit. Indeed some National Numbering Plans require analysis to the third or fourth dialled digit to identify the underlying service or call tariff rate. In the absence of clear evidence or specific concerns, TRC does not propose to alter its proposals on the basis of speculation about a possible problem.

> *Paragraph 2.5 Numbering Capacity for Special Services, 08*
>
> *The code 08 has been designated for special telecommunications services. This code is to be followed by a standard-length SN of seven digits. For allocation and record purposes the first digits of the SN are labelled 'A' and 'B' respectively.*
> *Allocations of special services numbering capacity will be made in blocks of one thousand numbers, using AB digits selected from those designated, followed by C and D digits in the format 08 ABCD xxx. Unless stated otherwise in the sections below, numbers will be allocated in blocks of 1000 numbers.*
> *Designations of number ranges for Special Services are given below in numerical order.*

Umniah comment:
We object to number block allocation of below 1,000,000 on the grounds that it is very cumbersome (switch resource intensive as well as billing system complicating) to define 1,000 or 10,000 or even 100,000 number blocks.

Analysis

Paragraph 2.5: The party is concerned that allocation block sizes vary depending on the type of service.

TRC Conclusions

The current National Numbering Plan has included varying block sizes since its introduction in 2003 without causing fundamental problems for operators. TRC acknowledges that large block sizes should be used for popular services experiencing large demand, but the ability to vary the block size depending on the service is a critical tool in a regulator's ability to manage the available capacity in an efficient manner.

> *Paragraph 2.9 (f)*
>
> *The Network Termination Point of geographic numbers shall be determined from the National Destination Code and Subscriber Number. The location shall be determined by reference to a Numbering Map which shall be maintained by Orange Fixed4 and made available to all other operators.*

Umniah comment:
This paragraph restricts the possibility to use geographic numbers nomadically, and impedes features demanded by businesses and administrations (free seating in any office and being reachable on geographic number) and teleworking.

Orange Fixed already treats all of Jordan as one region and this will become all the more evident with the introduction of NGN/all-IP technology.

Moreover, there is no need for geographic number ranges because all Jordan is handled as one region by Orange Fixed especially that NGN enables central soft switch.

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Analysis

Paragraph 2.9.f): The party raised the issue that the TRC is intending to prevent the use of Geographic Numbers for Nomadic services. They also explained that from a network perspective the fixed-line network is structured to treat the whole of Jordan as one region.

TRC Conclusions

TRC considered the use of Geographic Numbers for Nomadic services in Question 22.

In addition to addressing operators call routing needs, TRC is concerned that it provides a measure of tariff transparency within the National Numbering Plan. TRC is aware that there are now some Fixed-line calling plans that treat the whole of Jordan as one charge area, but many retain the concept of local and long distance tariffs. Until this distinction is removed TRC will retain the current approach within the National Numbering Plan.

Paragraph 2.12.2

Number Portability Prefix Codes (for possible future reference)
In the event of Number Portability being introduced, TRC will designate the necessary prefixes to be used for number portability.

Umniah comment:
Is there a plan to use routing numbers to support MNP; since this is now happening, it should be clear how this will work.

Analysis

Paragraph 2.12.2: The current initiative to implement Number Portability is identified and a request made to expand on this paragraph.

TRC Conclusions

TRC believes that this is a reasonable request, however it does not accept that all the issues have been resolved to allow it to incorporate the requested detailed information.

Paragraph 2.12.4 Carrier Pre-Selection Codes

In addition to the Type B codes dialled by callers to override default Carrier Pre-Selection options, Carrier Pre- Selection Codes (CPS Codes) may be needed by operators to prefix to the dialed number within the network so that correct call routing will result. These codes cannot be dialled by customers. The codes will be hexadecimal codes beginning with alphabetic characters and their format will be defined once the operators have identified the need for such codes and the quantity required. These codes will be allocated by the TRC to operators solely in connection with Carrier Pre-Selection, a service that allows end users the choice of routing specific types of calls via a selected Jordanian telecommunications operator without the need to dial a prefix before making the call.
CPS Codes will have a 'Protected' status. CPS Codes will be allocated for use in response to requests from operators deemed to have rights and obligations to interconnect pursuant to the Interconnection Guidelines.

Umniah comment:
TRC should mention Carrier Selection with Independent Billing which is a Call-by-Call carrier select.

Analysis

Paragraph 2.12.4: Call-by-Call Carrier Selection is not mentioned.

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TRC Conclusions

TRC accepts the comment and will correct the wording.

> *Page 19 reference to*
> *ERG (07) 56rev2 (ERG common position on VoIP)*

Umniah comment:
The ERG Common Position on VoIP strongly advocates the use of geographic numbers for VoIP including nomadic VoIP.

Analysis

Page 19 Reference to ERG (07) 56: The party reminds us that this document advocates the use of Geographic numbers for Nomadic services.

TRC Conclusions

TRC acknowledged the EGR position in the Notice and addressed it in its conclusion regarding the comments submitted in response to Question 22.

ANNEX B

> *Paragraph (6)*
> *The TRC will take into account the following criteria when assessing applications: • Consistency with the National Numbering Plan;*
> *• The availability of numbering capacity in the applied-for range;*
> *• Suitability for use over all networks providing connection with the service;*
> *• Relevant national and international standards;*
> *• Possible anti-competitive effects;*
> *• The efficiency (utilisation) the applicant has achieved with number capacity already allocated for the same or similar services;*
> *• Alternatives offering cost benefits and/or convenience for users and network operators, including the use of Type C codes already in use by other operators;*
> **• The views of the applicant and other concerned parties (through consultation where appropriate);**
> **• Other matters that are perceived by TRC as relevant subject to consultation with the applicant and others where appropriate.**

Umniah comment:
In the last two bullet points, consulting 'other concerned parties' for number applications seems to entail risks of anticompetitive behaviour/gaming to disrupt innovative offers. Consultation would be more appropriate if it concerns an application that involves a need to change numbering plan or numbering rules. There also is a risk of the TRC acting arbitrarily s.

Analysis

Paragraph 6 last two bullet points: The party is concerned that the TRC's right to take account of the views of other parties may lead to anticompetitive behaviour / gaming. In addition, they are concerned that the TRC's ability to identify and take account of matters perceived by the TRC as relevant introduces scope for the TRC to act in an arbitrary manner.

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TRC Conclusions

Whilst the TRC can understand the party's views, it believes that the concern is unfounded. These words have been brought forward from the current version of the Regulations and we believe that we have demonstrated a neutral approach to all operators during that period. Further TRC believes that it must have the ability to consider facts that may not have been evident at the time that the Regulations are introduced, provided the recognition that the danger of acting in an arbitrary manner. TRC would note that many National Numbering Plans contain similar provisions.

> *Paragraph (7)*
> *When assessing the utilisation of existing allocations of numbers the TRC shall use the formula:*
> *Utilisation(%) = Quantity of Numbers in service + Quantity in quarantine * 100 Quantity of numbers allocated*

Umniah comment:
As discussed in our comments on the main body (Q30), we are not convinced such a formula is needed.

Analysis

Paragraph 7: Comments are made that repeat the comments submitted against Question 30.

TRC Conclusions

TRC addressed the issues in its conclusions regarding Question 30.

> *Paragraph (9)*
> *Applications for allocation or reservation of number blocks and/or codes may be refused by the TRC on the following grounds:*
> *a) The requested number blocks or codes are not available for allocation or reservation;*
> *b) The applicant is not a holder nor about to be a holder of an appropriate licence for such an allocation/reservation;*
> *c) The planned activation date is too far ahead;*
> *d) The planned services are not considered by the TRC to be appropriate for implementation on the requested number blocks or codes;*
> *e) The applicant has used existing allocated numbering resources inefficiently;*
> *f) A previous allocation remains significantly under utilised visà- vis the applicant's stated plans;*
> *g) A previous related reservation has not yet been opened for use in accordance with the applicant's stated plans;*
> **h) A previous allocation has been used for services or purposes other than those specified or permitted in the terms of allocation or reservation;**
> **i) The TRC considers that allocation/reservation would not be in the national interest;**
> **j) It is considered that the reservation/allocation would unfairly impede competition.**

Umniah comment:
For last thee bullet points: This seems to entail a risk of the TRC acting arbitrarily.

Analysis

Paragraph 9 last three bullet points; Paragraph 12; and Paragraph 21 bullet point g): They are concerned that these points introduce a risk that the TRC may act in an arbitrary manner.

TRC Conclusions

TRC believes that it has demonstrated a neutral approach to all operators during that period that the current regulations have been in force. Further TRC believes that it must have the ability to consider facts that may not have been evident at the time that the

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Regulations are introduced, provided the recognition that the danger of acting in an arbitrary manner. TRC would note that many National Numbering Plans and their associated regulations contain similar provisions.

> *Paragraph (12)*
> *Exceptions to this period may be:*
> *• where additional information is required from the applicant;*
> *• where a period of consultation is required to be initiated by the TRC;*
> *• where, in the opinion of the TRC, there are significant issues relating to the application that cannot be reasonably handled within that period;*
> *• where the TRC is of the opinion that an alternative period of time is justified. In this case the TRC shall inform the applicant in writing of the reasons for the exception and of the revised period.*

Umniah comment:
This seems to entail a risk of the TRC acting arbitrarily.

Analysis

See Paragraph 9 above.

TRC Conclusions

See Paragraph 9 above.

> *Paragraph (13)*
> *A reservation may be made in anticipation of an application being made for numbering capacity in accordance with a **three year** rolling forecast provided by those who are eligible to apply for an allocation and/or reservation.*

Umniah comment:
Three year rolling forecast seems quite far-reaching, and difficult to provide in case of innovative services for which take-up is unknown If this is introduced, there should be a possibility to revise the forecast.

Analysis

Paragraph 13: There is a concern that three year rolling forecasts is an onerous burden, when considering new services which can move from inception to launch in less than three years

TRC Conclusions

TRC accepts the point and will modify the paragraph to include services conceived since the preparation of the last three year rolling forecast. In making this change TRC recognizes that there is potential for operators to abuse the concession. In the unlikely event that we become aware of such abuse we will revert to the current position.

> *Paragraph (15) Reservations will be time-limited & the limit for reservations will normally be six months. Reservations will be granted on a firstcome, first-served basis.*

Umniah comment:
One year is more appropriate.

Analysis

Paragraph 15: A repeat of the issue covered by Question 27.

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TRC Conclusions

See our conclusions to Question 27.

Paragraph (18)

In addition to any specific conditions that may apply, the following conditions for allocations apply to all allocations made by the TRC.
These same conditions hereunder shall be applicable to reservation, as appropriate.
• The allocation shall be used for the purpose specified in the application (e.g. including any classification by type or tariff as set out in the National Numbering Plan);
• Operators shall make all allocations of geographic numbers to subscribers in accordance with the Numbering Map. Delivery of calls to a geographic Network Termination Point (NTP)2 is determined by the Network Destination Code (NDC)3 and Subscriber Number (SN)4;
• Operators shall not use numbering allocations or reservations in an anti-competitive way, so as to prevent other operators from requesting allocations or reservations of numbers;
• Operators shall route and connect all calls made in accordance with the Dialling Plan to numbers allocated by the TRC, unless the called number is designated 'on-net' within this National Numbering Plan and it is connected to a network other than the one to which the caller is connected;
• Operators shall terminate calls to all numbers from the Jordan National Numbering Plan within the geographical of the Jordan unless the number is designated within the National Numbering Plan or ITU recommendations permit such calls to be terminated outside of the country;
• Operators shall not terminate calls to numbers from another countries' National Numbering Plan within the geographical borders of Jordan unless the number is desription within the ITU recommendations permit such calls to be terminated within Jordan's borders and bi-lateral agreements exist (e.g. international GSM roaming services);
• The holder of an allocation shall maintain an up to date record of the percentages of numbers in use and reserved;
• The holder of an allocation shall maintain a record of numbers that have been ported (i.e. at end users' request) to other operators, once a number portability facility becomes available;
• Numbers, number blocks or codes shall not be traded;
• Allocated numbers, number blocks or codes shall not be directly transferred between allocated parties, unless the number is being ported, without the specific approval of the TRC; such transfer can normally only occur by withdrawal and re-allocation;
• TRC may apply additional specific conditions of use to an allocation if TRC considers that it is in the national interest to impose such conditions including any classifications by type or maximum tariff, which will be consistent with National Numbering Plan;
• Allocated numbers and/or blocks of numbers must be activated within the time period specified by the TRC. Otherwise the allocation may be reclaimed;
• An Operator shall not use numbers, number blocks or codes other than those allocated by the TRC.

1 Numbering Map: It is the map referred to in paragraph 2.10f, of the National Numbering Plan, maintained by Orange and made available to all other operators in order that all Operators can determine a Network Termination Point (NTP) of a Geographic (fixed) line number.
2 Network Termination Point (NTP) – the edge of a network at which the network is connected to other networks or to terminal apparatus, e.g. a telephone.
3 National Destination Code (NDC): A nationally optional code field, within the international public telecommunications Numbering Plan as set out in the ITU-T Recommendation E.164, which, combined with the Subscriber Number, will constitute the National Significant Number. In Jordan, this corresponds to the Regional code, used before the called subscribers number, where the calling and called subscribers are in different numbering areas. In Jordan, the NDC is a single digit (after the 0). In the Non-Geographic ranges, 07, 08 and 09 this corresponds to the service.
4 Subscriber Number (SN): The number identifying a subscriber in a network or numbering area. In Jordan, the Subscriber Number is eight digits for Mobile services and seven digits for all other ranges.

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For bullet points 6, a word (area?) is missing; typo 'desription'.
This seems to be restriction for the sake of restricting. Example: If you have a US eFax number; which is a useful free service, Skype and others offer out of country numbers from the countries which permit out of country use. Many uses of such numbers are legitimate.
For last bullet point, this probably prevents the +0+ or other alternative international dialing codes, which is something that a licensee may want to use. Accordingly, we request that non- number prefixes (* , #, +) are explicitly allowed to be used by operators as they see fit for service selection and other internal signalling needs.
For footnote 2 defining *Network Termination Point (NTP)*; the definition is quite loose and does not tie it to a physical location.
We insist that alternative international dialling codes are important to have and necessary.

Analysis

Paragraph 18: A number of discrete points are raised against this paragraph. The first identifies two editorial mistakes.

The point of trans-national numbers is raised as is the use of non numeric characters for international prefixes.

Finally the definition of Network Terminating Point is questioned as being quite loose

TRC Conclusions

TRC accepts and will address the editorial mistakes.

TRC considered the trans-national numbers in its conclusions to Question 24 and the issue of international prefixes in Question 25.

Whilst TRC thinks that the question of the definition of Network Terminating Point may have some merit, it has not created any issues within Jordan since its introduction in the original regulations and TRC is reluctant to change it at this time.

Paragraph (21)
The following shall, without limitation, be considered grounds for withdrawal by TRC of number allocations or reservations:
a) Failure of the allocated party or parties to meet one or more of the conditions placed on allocations;
b) Insufficient usage of an allocated or reserved number range as determined by the TRC.
c) The need for additional numbering capacity elsewhere mandates such withdrawal;
d) All numbers of an allocated range have become deactivated;
e) Withdrawal is necessary to ensure that fair and open competition is maintained;
f) International harmonisation mandates such withdrawal;
g) Withdrawal is deemed to be in the overall national interest;
h) It is necessary as part of a change to the National Numbering Plan.

For bullet point (g), this entails a risk of the TRC acting arbitrarily.

Analysis

See Paragraph 9 above.

TRC Conclusions

See Paragraph 9 above.

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> *Paragraph (24)*
> *Temporary Allocations of numbering capacity will be automatically withdrawn three months after the allocation date, and without the consultation and notice period described in the previous paragraph.*

<u>Umniah comment:</u>

Probably better to extend to 6 months or more.

Analysis

Paragraph 24: A repeat of the points raised against Question 26.

TRC Conclusions

See Question 26.

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Annex A

Comparison of User ENUM and Infrastructure ENUM

This Annex explains the distinction between User ENUM and Infrastructure ENUM. A simplified approach is taken to the working of ENUM to ensure that the focus is on the differences and the Annex should not be used as a formal description of the products. Nor should any party treat this description as an indication of TRC's preferred implementation within Jordan.

The differences are explained by separately describing the call set-up sequence using the two different variations of ENUM.

User ENUM

This is the version that was originally conceived and specified by the Internet Engineering Task Force (IETF) RCF 3761: *The E.164 to Uniform Resource Identifiers (URI) Dynamic Delegation Discovery System (DDDS) Application (ENUM).* The originating end user initiates a call or session by submitting to an ENUM Service Provider an E.164 number that uniquely identifies the destination end user. The number submitted does not refer to the terminal device, location or service of the destination end user. The E.164 number input to the ENUM Service Provider is not used for call or session routing

The ENUM database is completely independent of any telephony network, although an IP based network will be used to access the database, which is an Internet DNS. The ENUM Service Provider may or may not be a network provider; this depends on the legal and regulatory arrangements within a specific country. Indeed trials have been held in some countries where there is more than one ENUM Service Provider and they compete with each other to offer the directory service.

The ENUM Service Provider returns to the originating end users' device all the valid E.164 numbers and IP addresses that relate to the location, devices and services that the destination end user has registered with the database, see Figure 1. This use of the ENUM Service Provider may be apparent or it may be transparent to the originating end user.

A key feature of User ENUM is that the translation database is 'public' and can be accessed via the Internet. Indeed, User ENUM is an inherent part of the Internet DNS structure and uses the ".arpa" Top Level Domain (TLD) name. The submitted E.164 number is translated into an ".e164.arpa" Unique Resource Identifier (URI) before ENUM is queried.
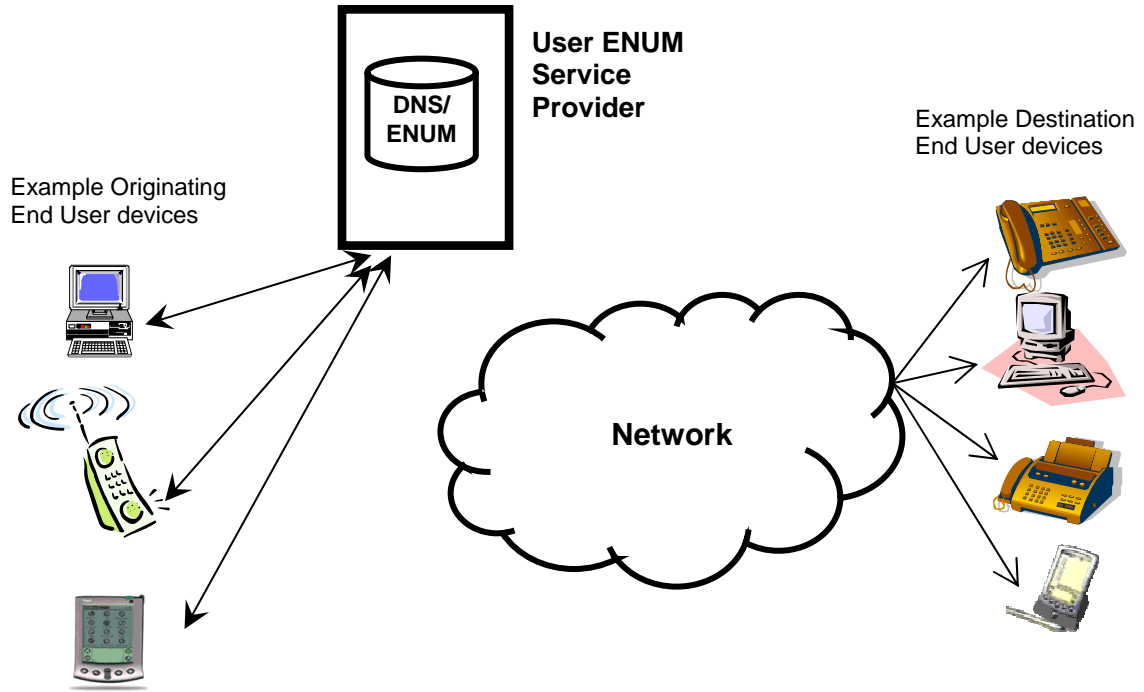
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Figure 1: Step 1 in the use of User ENUM

The originating user's device selects the appropriate E.164 number or IP address for the Destination End User's location, device or service that it is seeking to communicate with and initiates a call or session via a telephony or IP network, as appropriate, See Figure 2.
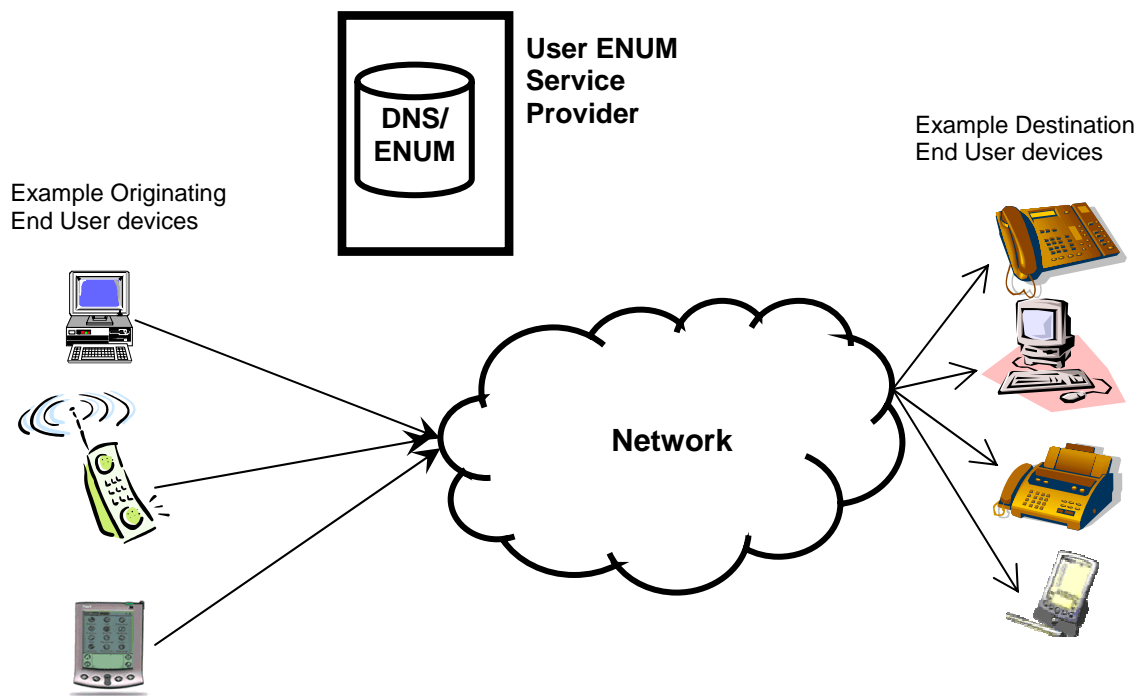

Figure 2: Step 2 in the use of User ENUM

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Infrastructure ENUM

When originating end users initiate a call (or session) using E.164 numbers that identify the specific terminal device, location or service of the destination end user on a network that utilizes IP routing there is a need for the network translate the entered E.164 number to an IP address before the call or session is routed. ENUM like techniques are one solution to this requirement.

In this situation the ENUM translation is completely transparent to the End User and the related routing database is an inherent component of the network, see Figure 3. The critical difference, in National Numbering Plan terms, is that with Infrastructure ENUM the originating end user uses the E.164 number that defines the destination location, device or service, whilst with User ENUM the E.164 number used by the originating end user is a 'key' for a directory look-up that returns the number or address that defines the destination location, device or service.

In the case of Infrastructure ENUM the database is not part on the Internet nor is it part of the Internet DNS structure and ".arpa" is not used. Indeed, network security considerations dictate that the database cannot be accessed from external sources.

There is one variation on this approach. This occurs when two or more operators decide to share a routing database to reduce their network costs, or for some other reason. This is known as Federation ENUM. However, for network security reasons the database is 'private' to the operators concerned and cannot be accessed via the Internet.
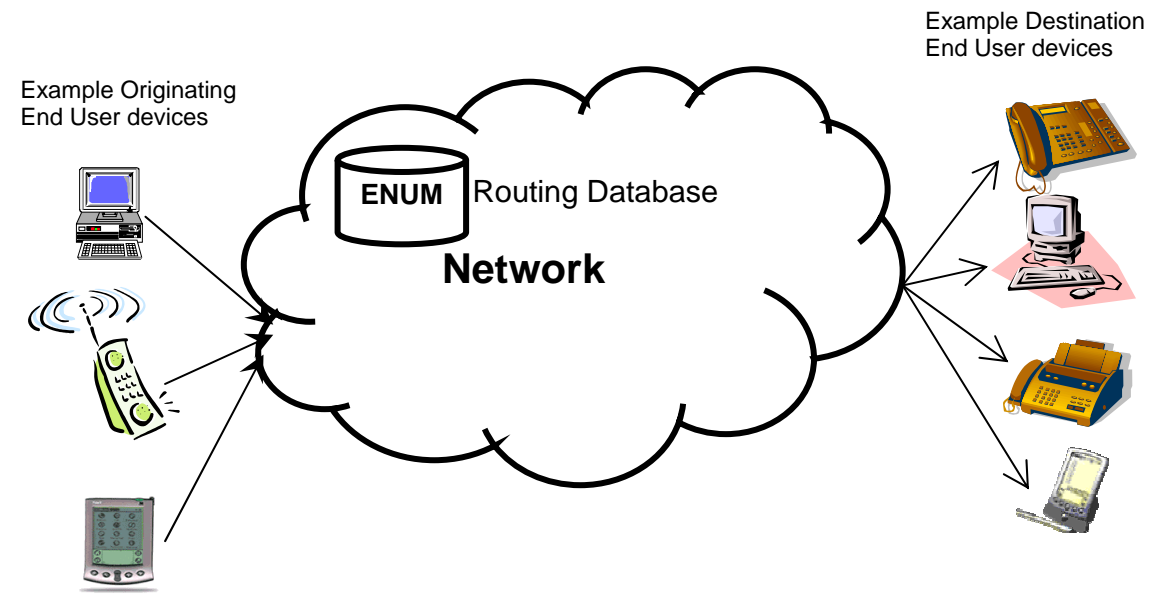

Figure 3: Use of Infrastructure ENUM

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