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|  | 13.12.2019 |
| REVIEW OF THE NATIONAL NUMBERING PLAN | |
| Questionnaire for stakeholders | |

The ILR has commissioned Hill and Antelope Consulting to provide an assessment of the current national numbering plan. As part of the review, ILR is issuing this questionnaire, stakeholders and operators are requested to reply to it.

This questionnaire will help to gain a deeper understanding of the issues, if any, regarding the current numbering plan and help to identify ways to :

* Improve the efficiency of the administration of the numbering plan, including enforcement rules.
* Avoid shortages of numbers.
* Adequately meet growing needs for numbers.
* Encourage innovation and new uses of numbers.
* Improve protection of users against fraud and other forms of number misuse.
* Make numbers easy to use, ensuring that any meaning in the leading digits (first digits dialed) is well understood.

This questionnaire will be sent to :

* Entities that hold numbers
* Telephony providers
* Other entities

**Replies must be sent to ILR by 31 January 2020**

# Structure of this questionnaire

The questions are grouped into the following categories:

* Service Needs and differences of current situation from expectations
* Number Management
* Network Structure
* Expectations
* Any Other Comments

Some of the questions are open (that is, request a comment), others are closed (for example, “yes” or “no”). Please feel free to add any comments you might have even for the closed questions.

*Please provide an explanation for why you have answered as you did, for all questions that are not purely factual.*

*Please mark as confidential anything that you do not want to be made public. The information provided in this questionnaire will not be published in this form.*

Please indicate here the name of your organization and contact details of the co-ordinator of your response (that, is, who is responding):

|  |  |
| --- | --- |
| Company name: |  |
| Contact name: |  |
| Phone number: |  |
| Email: |  |

Upon request, meetings (physical or teleconference) can be arranged with the respondent, consultant and the ILR. Please contact the ILR under the following address for an appointment: [telecom@ilr.lu](mailto:telecom@ilr.lu).

Thank you in advance for your replies.

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# Questions for stakeholders

## Service Needs

1. Please fill in the following table for the last five years (situation at end of year) and send the data to ILR (e.g. in Excel). The counts of numbers give the statuses of the numbers that you held (in other words, that ILR had allocated to you and had not retrieved from you) at the end of each year. For clarity, the table below includes dummy values, *in italics*; these should be replaced with the real values.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Year (i.e. 2019, …, 2015) | | *2018* | | | |
|  |  | Count of numbers with the given status at the year end | | | |
| Leading digits (e.g. 04, 20, 23, …,99) | Length of number (e.g. 4, 5, 6, ..., 11) | Allocated to you by ILR | Ported to you from another provider | Ported from you to another provider | Assigned to customers by you (excluding those ported out but including those ported in) |
| *20* | *8* | *10’000* | *140* | *1’231* | *5’789* |
| *…* | *…* | *…* | *…* | *…* | *…* |
| *99* | *6* | *3’000* | *67* | *33* | *892* |

1. Please indicate below what percentage of numbers allocated to you have been assigned by you to individuals versus organizations/companies:

|  |  |
| --- | --- |
| Fixed (total 100%) | Mobile (total 100%) |
| Individuals: | Individuals: |
| Organizations: | Organizations: |

1. What is your expected quantity of numbers over the next five years for each service? Please indicate below, in absolute numbers (e.g. 100, 1’000, 100’000) the expected quantity (in other words, the count at the end of this year plus or minus any expected addition or subtraction):

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Service (leading digits) | 2020 | 2021 | 2022 | 2023 | 2024 |
| Nomadic (‘20’) |  |  |  |  |  |
| Fixed (excluding ‘20’) |  |  |  |  |  |
| Mobile (excluding ‘60’) |  |  |  |  |  |
| M2M (‘60’) |  |  |  |  |  |
| Freephone (‘800’) |  |  |  |  |  |
| Shared cost (‘801’) |  |  |  |  |  |
| Shared revenue (‘900’, ‘901’, ‘905’) |  |  |  |  |  |

1. **The following sub-questions all relate to M2M/IoT.**

4.1 At present, a specific range is allocated for M2M. Can that range also be used for IoT, or should a distinction be made between M2M and IoT? Please indicate below, with “yes” or “no”, whether the existing M2M range should also be used for IoT.

|  |  |
| --- | --- |
| yes | no |

4.2 Certain number ranges are used for M2M/IoT.

a) Please indicate below the number of customers to whom you have assigned M2M/IoT numbers:

c) Please indicate below the size of the largest M2M/IoT block that you have assigned to a customer:

d) Please indicate below how many blocks of 10’000 or more M2M/IoT numbers you have assigned to customers:

e) Please indicate below, in absolute numbers, the number of customers that you would expect to request M2M/IoT numbers in the future.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 2020 | 2021 | 2022 | 2023 | 2024 |
|  |  |  |  |  |

g) Should M2M/IoT numbers be allocated by ILR directly to companies that are not operators or service providers? Please indicate “yes” or “no” below.

|  |  |
| --- | --- |
| yes | no |

h) Please explain why you have answered as you did.

4.3 M2M/IoT numbers are used for certain types of voice calls, in particular to pre-defined call centers, but the user cannot dial other numbers, for example to call another user.

a) Should there be restrictions on the use of M2M/IoT numbers for voice calls? Please indicate “yes” or “no” below

|  |  |
| --- | --- |
| yes | no |

b) If you indicated “yes” above, then please indicate below the types of restrictions that should be imposed.

4.4 a) Should M2M/IoT numbers be portable? Please indicate “yes”, or “no”, or “sometimes” below.

|  |  |  |
| --- | --- | --- |
| yes | no | sometimes |

b) Please explain why you have answered as you did.

4.5 a) Please indicate what implementation in embedded devices you would prefer for M2M/IoT? (e.g. traditional SIM, eUICC)

b) Please explain why you have answered as you did.

4.6 What distinctions do you consider should be drawn between the regulation of M2M/IoT services and the regulation of other services, such as mobile services?

Please list below any new distinctions that should be drawn:

4.7. List below all others comments regarding M2M/IoT:

1. **SMS/MMS short codes are used to provide a variety of services, mostly value-added.**

a) Are you aware of any issues or problems with the use of such short codes? Please indicate “yes” or “no” below.

|  |  |
| --- | --- |
| yes | no |

b) If you indicated “yes” above, then please indicate the issues or problems below.

c) Should SMS/MMS short codes be subject to extra supervision or regulation? Please indicate “yes” or “no” below.

|  |  |
| --- | --- |
| yes | no |

d) If you indicated “yes” above, then please indicate below the elements that should be covered in extra supervision or regulation.

e) Should SMS/MMS short codes be allocated and/or assigned by ILR? Please indicate “yes” or “no” below.

|  |  |
| --- | --- |
| yes | no |

f) Please indicate other relevant issues regarding SMS/MMS short codes

g) For all the items above, please explain why you have answered as you did.

h) List below all others comments regarding SMS/MMS short codes:

1. There is increasing interest in using supercomputing facilities and artificial intelligence systems.

a) Should there be a dedicated numbering range for communication with such facilities/systems? Please indicate “yes” or “no” below.

|  |  |
| --- | --- |
| yes | no |

b) If you answered “yes” above, then please indicate and motivate below the requirements for such a numbering range, why it should be separate from the M2M range, and how it would be managed and used.

1. What new uses of numbers might emerge within the next five years?

Please list below any new uses that might emerge:

## Number Management

1. What improvements, if any, do you think should be made to the following processes for numbers? For instance, do the regulations state “this action should be taken within two weeks” though in practice the action usually needs three weeks or, alternatively, could be done with overall benefit to participants in one week? Please list the improvements below.

a) Allocation requests

b) Reservation requests

c) Transfer

d) Withdrawal

e) Return

f) Portability (both mobile and fixed)

g) For all the items above, please explain why you have answered as you did.

1. ILR charges initial fees and, thereafter, annual fees for allocations of numbers.

a) Is the current pricing for numbers appropriate? Please indicate “yes” or “no” below.

|  |  |
| --- | --- |
| yes | no |

b) If you answered “no” above, then please indicate and motivate below what changes you would propose to the charging structure.

1. At present, no physical address in Luxembourg is required for an operator/service provider to obtain numbering resources.

a) Should a physical address be required in Luxembourg to obtain numbering resources? Please indicate “yes” or “no” below.

|  |  |
| --- | --- |
| yes | no |

b) If you answered “yes” above, then please indicate and motivate below why this should be required.

1. Do you ever find any discrepancies between the numbering database held by ILR and your own records of how numbers are utilised? For instance, you might believe that you had been allocated the number ‘234567’ but then find that ILR has allocated it to another operator. Please indicate “yes” or “no” below.

Are there discrepancies currently? Please indicate “yes” or “no” below.

|  |  |
| --- | --- |
| yes | no |

How are any such discrepancies removed? Please explain below.

1. In 2016 ILR introduced a financial incentive for returning certain numbers.

a) Has this incentive affected what you do? Please indicate “yes” or “no” below.

|  |  |
| --- | --- |
| yes | no |

b) Is the current financial incentive effective in encouraging the return of numbers? Please indicate “yes” or “no” below.

|  |  |
| --- | --- |
| yes | no |

c) If you indicated “no” above, then please indicate below, in EUR, the amount of the financial incentive, for each individual number, that would be effective in encouraging the return of numbers:

1. Do you think that there could be shortages of fixed or mobile numbers in the next five years?

a) Please indicate “yes” or “no” below.

|  |  |
| --- | --- |
| yes | no |

b) If you indicated “yes” above, then please indicate below how shortages could be avoided (e.g. reclaiming unused numbers, allocating new ranges, etc.), and whether the shortages are more likely for fixed or for mobile numbers.

1. Numbers are currently allocated to “notified” entities (communication network or service providers), but they might be allocated to other entities (such as car or appliance manufacturers). The conditions of use of numbers would often be the same for all entities, but there might be exceptions.

a) Should allocation of numbers to other entities be allowed? Please indicate “yes” or “no” below.

|  |  |
| --- | --- |
| yes | no |

b) Should conditions (such as portability, pricing, quality of service, emergency access etc.) be the same for all entities, or should exceptions be allowed? Please indicate “yes” or “no” below.

|  |  |
| --- | --- |
| yes | no |

c) If you indicated “yes” above, please indicate below which exceptions should be allowed.

d) Should the conditions apply across the entire number ranges? Please indicate “yes” or “no” below.

|  |  |
| --- | --- |
| yes | no |

e) For all the items above, please explain why you have answered as you did.

1. Recommendation ITU-T E.190 of the International Telecommunication Union states that numbers may not be sold, licensed or traded.

a) Should the Luxembourg regulations maintain this restriction for all numbers, including national numbers? Please indicate “yes” or “no” below.

|  |  |
| --- | --- |
| yes | no |

b) If you indicated “yes” above, please indicate and motivate for which numbers ranges this should apply.

c) If you indicated “no” above, then please indicate and motivate below any restrictions that should apply to the sale, licensing, or trading of numbers. For instance, there might be no resale after the first sale (that is, no cascaded sales), no assignments of numbers to a business reselling numbers, no auctions of numbers, or no special pricing plans including specific requested numbers.

d) For all the items above, please explain why you have answered as you did.

1. At present, there is no regulation regarding the extraterritorial use of numbers, either for the use of numbers from Luxembourg in other countries or for the use of numbers from other countries in Luxembourg.

a) Please indicate below, by “yes” or “no”, whether there should be regulations regarding the extraterritorial use of numbers.

|  |  |
| --- | --- |
| yes | no |

b) If you indicated “yes” above, then please indicate below the elements that should be covered in a new regulation.

c) For all the items above, please explain why you have answered as you did.

1. Agreements between the states on extraterritorial use of numbers permit subscribers with E.212 numbers in one country to obtain E.164 numbers in another. For instance, there is such an agreement between Belgium and Luxembourg.

a) Have such agreements increased demand for numbers noticeably? Please indicate “yes” or “no” below.

|  |  |
| --- | --- |
| yes | no |

b) Are such agreements useful when there are “roam at home” tariffs in the European Union? Please indicate “yes” or “no” below.

|  |  |
| --- | --- |
| yes | no |

c) Should such agreements be allowed with countries outside the European Union? Please indicate “yes” or “no” below.

|  |  |
| --- | --- |
| yes | no |

d) For all the items above, please explain why you have answered as you did.

## Network Structure

1. What are the separate elements in your networks that route towards E.164 numbers (either by acting directly on numbers or by translating numbers to IP addresses or other numbers)? Please indicate below, with an indication of whether there is a translation, and if so, whether it is to IP addresses or to other numbers.
2. Nuisance/unwanted calls are a significant, and growing, problem in several countries.

a) Is this a problem at present in Luxembourg? Please indicate “yes” or “no” below.

|  |  |
| --- | --- |
| yes | no |

b) If you indicated “yes” above, then please indicate below what percentage of calls are considered nuisance/unwanted by users.

c) Do you expect that this could become a problem in Luxembourg in the next five years? Please indicate “yes” or “no” below.

|  |  |
| --- | --- |
| yes | no |

d) In your view should nuisance calls and messages be detected and then blocked or diverted by operators (with the consent of the subscribers)? Please indicate “yes” or “no” below.

|  |  |
| --- | --- |
| yes | no |

e) If you replied “yes” above, should the detection database use manual update, machine learning/artificial intelligence or external authentication/certification (as in STIR/SHAKEN)? Please indicate below what method should be used.

f) Could the fixed and mobile number portability systems be extended easily to facilitate this detection (particularly by providing the detection database)? Please indicate “yes” or “no” below.

|  |  |
| --- | --- |
| yes | no |

g) Should detection databases be shared amongst all operators? Please indicate “yes” or “no” below.

|  |  |
| --- | --- |
| yes | no |

h) For all the items above, please explain why you have answered as you did.

1. By “nomadic number” we mean a number that can signify different locations in different calls (by contrast with a fixed “geographic” number) but not with different locations in the same call (by contrast with a mobile number); such numbers tend to begin with the digits ‘20’ in Luxembourg.

a) How do your networks handle calls to emergency services from geographic, mobile and nomadic numbers (as appropriate)?.

b) Please indicate below how the calls from emergency services are handled for each type of number:

Fixed:

Mobile:

Nomadic:

c) How is caller location information provided to the emergency call centre (PSAP)? Please indicate below for each type of number:

Fixed:

Mobile:

Nomadic:

d) Could the fixed number portability system be extended easily to let customers insert location information and emergency call centres retrieve location information? Please indicate “yes” or “no” below.

|  |  |
| --- | --- |
| yes | no |

## Expectations

1. Are there services that you believe would be taken up readily in Luxembourg if they had their own number ranges? Please list them below.
2. What improvements, if any, do you think should be made to the current numbering plan? Please list them below.
3. How could any improvements to the current numbering plan be made with little inconvenience and cost to users? Please explain below.
4. What is the general public understanding of meaning in numbers (particularly specific non-geographic early digits, such as ‘900’, ‘901’ and ‘905’)? Please explain below.
5. Fixed ‘geographic’ numbers formerly identified areas. Some customers might still expect many useful numbers to identify places nearby. For instance, they might expect services that they need urgently (because of problems with electricity, water or locks, for example) to have fixed numbers in their own areas.

a) To what extent do fixed numbers still carry geographic meaning to the general public? Please explain below.

b) What proportions of fixed numbers inside and outside Luxembourg City still in practice identify places in their original areas, in your opinion?

1. Do users appear to find variations in number length irritating or confusing? For instance, large variations in number length might lead to frequent misdialing. Please indicate below with “yes” or “no”.

|  |  |
| --- | --- |
| yes | no |

1. At present, most people have mobile phones and store frequently used numbers in the contacts directory of their phones.

a) In that light, do short numbers still help users much? Please indicate “yes” or “no” below.

|  |  |
| --- | --- |
| yes | no |

b) Should there be short codes equivalent to some full national numbers in some ranges, for example for freephone (‘800’) and shared cost (‘801’) numbers? Please indicate “yes” or “no” below.

|  |  |
| --- | --- |
| yes | no |

c) If you indicated “yes” above, then please indicate below the specific ranges for which that should be the case, and the approximate number of short codes that should be allocated.

## Any Other Comments

1. Are there any other suggestions, concerns or comments you would like to raise that have not been covered by the above questions? If so, please indicate them below.

## Thank you very much!