Commission for
Communications Regulation

Information Notice

Numbering for Machine-to-Machine Communications : Publication of responses to ComReg Consultation Document 13/33

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A.1 Publication of non-confidential responses to Consultation Document 13/33.

1. H3GI response (received 9 May 2013)
2. Telefónica response (received 9 May 2013)
3. BT response (received 9 May 2013)
4. ALTO response (received 9 May 2013)
5. Eircom group response (received 9 May 2013)
6. Silver Spring Networks response (received 9 May 2013)
7. Magnet Networks response (received 9 May 2013)

A.1 Publication of non-confidential responses to Consultation Document 13/33.

1. H3GI response (received 9 May 2013)

Hutchison 3G Ireland Limited ("Three") response to Numbering for Machine-to-Machine Communications

Consultation Reference: ComReg 13/33

Three.ie

Three is a leading provider of mobile communications services in Ireland and the leading provider of mobile broadband in Ireland. Three forms part of the 3 Group, a group of companies with a presence in the UK, Sweden, Denmark, Austria and Italy and the international telecoms division of Hutchison Whampoa Limited. Three launched in 2005 and is Ireland's fastest growing mobile network. Three's network is the only network in Ireland purpose built for 3G.

Three welcomes the opportunity to feed into ComReg's consultation regarding numbering and Machine to Machine ('M2M'). Please note the following detailed responses to ComReg's Consultation Document No. 13/33 ('Consultation'):

Q. 1 Do you agree with ComReg that a new number range for M2M should be introduced as soon as possible?

Three agrees with ComReg that a new number range for M2M be introduced as soon as possible in order to limit the implications of using current number ranges for M2M and reduce potential future migration requirements. Three agrees with ComReg in that *"there is a real risk that existing numbering ranges will be unable to provide sufficient numbering capacity for M2M applications while also meeting traditional numbering demands."* A new number range with no capacity issues, designed specifically for M2M should be introduced to satisfy the demand for numbers arising from the emerging M2M services.

Q. 2 Do you agree with ComReg's preliminary view that an overall single M2M range will adequately meet the needs of all M2M providers whether fixed or mobile, and with the use of lead digits to distinguish between fixed and mobile (at least until this may be found unnecessary)?

Three agrees with ComReg's preliminary view that an overall single M2M range will adequately meet the needs of all M2M providers whether fixed or mobile, and with the use of lead digits to distinguish between fixed and mobile (at least until this may be found unnecessary).

Q. 3 Do you agree with ComReg's proposal to introduce a number range in the format 077-123 456 7890, thereby providing ten billion numbers for M2M applications?

Three agrees with ComReg's proposal to introduce a number range in the format 077-123 456 7890, thereby providing ten billion numbers for M2M applications. Three believe it is prudent to target the largest possible pool of numbers immediately.

Q. 4 Do you agree with ComReg's preliminary view that the standard block size for M2M numbers should initially be 100,000 for qualifying mobile applicants and 10,000 for qualifying fixed-line applicants?

Three agree with the proposal that the standard block size for M2M numbers should initially be 100,000 for qualifying mobile applicants and 10,000 for qualifying fixed-line applicants.

However, consideration should be given to providing blocks of 10,000 numbers for smaller qualifying mobile applicants in order to limit artificial number exhaustion (e.g. in the case where a Service Provider has a need for 8,000 numbers then 92,000 numbers would be unused).

Q. 5 Do you agree with ComReg's view that any emerging M2M premium rate services should be accommodated using the proposed 077-9Y range? Please provide reasons for your views.

Three agree with ComReg's view that any emerging M2M premium rate services should be accommodated using the proposed 077-9Y range.

Q. 6 Do you agree with ComReg that if new PRS M2M number ranges are to be assigned, only a limited number of these is needed (e.g. 3 per-minute and 3 per-call number ranges)?

Three agree with ComReg that PRS M2M number ranges should be assigned to a limited number of ranges to ensure clarity and simplicity for the service providers availing of them.

Q. 7 Do you think there is a need to provide for number portability for the M2M communications market?

Three do not agree that there is a need to provide for number portability for the M2M communications market in the same manner as the current MNP process. Switching service providers for M2M is fundamentally very different to switching service providers where the number is key to the customer. M2M numbers are not key to the user, the user is not dependent on the number while for MNP the number is key to the user where it is a part of the persons identity, M2M numbers will be used in systems and devices of which the user will not be reliant upon, the number does not give an association to a certain provider, it provides access to a service only.

Additionally, Three believe that individual M2M ports would place a considerable strain on the Network and IT systems of all Network Operators and Service Providers. The National Porting Database ("NPD") would not be able to accommodate the porting of billions of numbers. If required, this would place significant and unreasonable demand on the NPD system which ultimately may cause failure of the MNP systems altogether. The NPD works efficiently well for the porting of numbers for voice service only where the numbers are required by the user, to implement number porting for M2M would need to be justified and an impact assessment would need to be carried out. Furthermore, ComReg's proposal regarding the use of shared MCC as described in section 3.6.1 of ComReg's consultation provides for a more seamless and suitable switching process for M2M.

Do you consider that the block re-allocation process described above (and covered by Numbering Convention 10.5-4) is adequate to meet the needs of M2M SPs who wish to move all of their services from one network operator to another?

Three believe that the block re-allocation process is adequate and appropriate to meet the needs of M2M SP's who wish to move all of their services from one network operator to another.

Three believe that consideration should be given to the process for "block re-allocation" and the granularity of these. It is likely that if a Service Provider wished to move a large block (say 1,000,000 numbers) this would be achieved in several tranches. This would need to be negotiated and agreed by ComReg, the Donor / Recipient Operators and subsequently notified to the other Operators in a timely manner.

Q. 8 Is this process more appropriate for M2M than number portability or are both needed?

Three believe that the "block re-allocation" process is more appropriate for M2M than individual number ports.

Q. 9 Do you agree that the National Numbering Convention 10.5-4 should be amended by rewording it to support number block re-allocation for all large number blocks, regardless of technology (i.e. principally by removing the reference to "fixed-line" in the Convention)?

Three agree that the National Numbering Convention 10.5-4 should be amended by rewording it to support number block re-allocation for all large number blocks, regardless of technology.

Q. 10 Do you agree that a Shared MCC+MNC provides an acceptable and practical solution to the problem of operator tie-in while also meeting the need for economies of scale in the manufacture and distribution of M2M devices?

Three agree in principle that a Shared MCC+MNC provides an acceptable and practical solution to the problem of operator tie-in while also meeting the need for economies of scale in the manufacture and distribution of M2M devices. As with the introduction of any new MNC and now possibly shared MCC+MNC, operators would need to assess the potential impacts on the Network and IT systems which use the MCC+MNC for example HLR, Customer Care systems, mediation for billing purposes and routing. Once the ITU consultation is complete, Three request that as part of ComReg's consideration regarding making MNC directly available to M2M, it takes into account the possible impacts on the industry and gives industry sufficient time to ensure operators can accommodate the use of shared MCC+MNC.

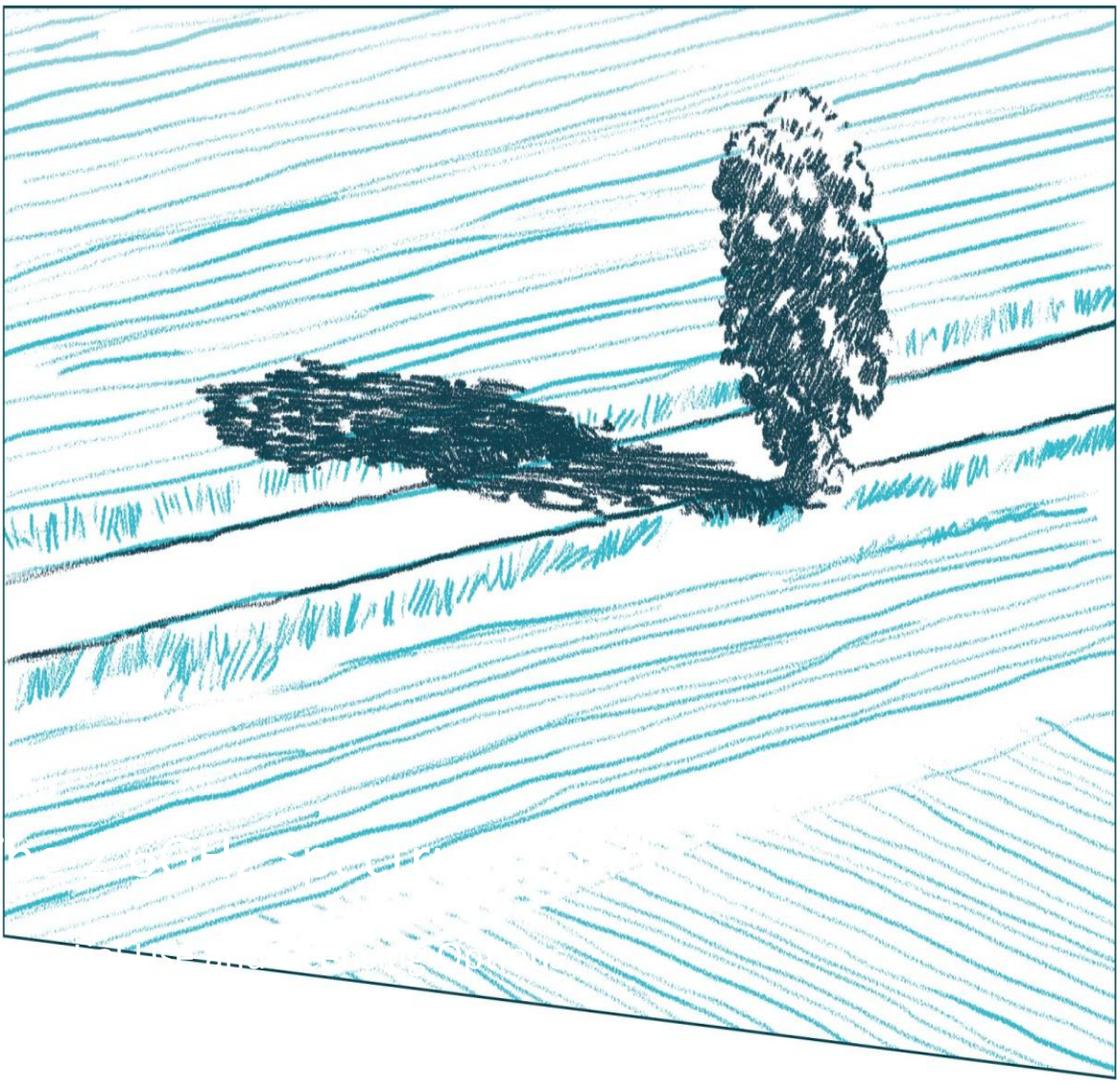
Q. 11 If the ITU decide to permit M2M SPs access to MNCs, do you believe that ComReg should directly allocate MNCs and M2M numbers to very large M2M SPs? What is a minimum threshold (i.e. number of M2M applications) that ComReg could require an SP to utilise to justify access to such a MNC? Please provide reasons for your answer

Three believe that if the ITU decide to permit M2M SP's access to MNC's then ComReg should directly allocate MNC's and M2M numbers to very large M2M SP's.

As each MNC allocation would require configuration on both the Host and other Operators this should be limited to allocations associated with Number Blocks of 1,000,000 or greater.

Allocating MNC's to SP's based on fewer numbers would be onerous to administer for the Operators and wasteful of the available MNC's.

2. Telefónica response (received 9 May 2013)



Numbering for Machine to Machine Communications

Response to Document 13/33

9th May 2013

Telefonica

General Comments

This is the response of Telefonica Ireland Ltd (O2) to ComReg's proposal and consultation on Numbering for Machine to Machine Communications. ComReg is right to begin planning now so as to ensure that it can properly meet future demand for numbering for machine to machine (M2M) applications. Overall, O2 supports the proposals put forward by ComReg in document 13/33, and agree with ComReg's general approach in this document.

The primary requirement on ComReg is to make sure there are sufficient numbers to meet demand, and to minimise cost & disruption from changes. While products and services can be developed and brought to market in a period of months, the process needed to make changes to the numbering scheme is necessarily much slower. A numbering scheme change can take years to plan and implement, and in addition can cause significant cost to both consumers and network operators.

While the forecasts vary somewhat, all agree that there will be rapid growth in demand for M2M applications in the period to 2020. While there are natural factors that limit demand for numbering for human use, the same limiting factors don't exist for M2M. It is possible that there could be up to 30m active devices in Ireland before 2020. O2 believes that ultimately public telephone numbers (E.164) will not be needed for all of these applications, and IPv6 addressing might be a better long term solution; however at present, the configuration of networks means they will need E.164 numbers in order to serve M2M terminals.

In many European countries, including Ireland, there is a real risk that existing numbering ranges will be unable to provide sufficient numbering capacity for M2M applications while also meeting traditional demand for numbering in the mid-term. The characteristics that make a numbering range "friendly" for human use (short, capable of being memorised, portable, etc.) are not necessarily relevant for machine use. For these reasons, ComReg is right to begin planning now for M2M numbering, while demand is still nascent. This may avoid costly number exhaustion or number change in the mid-term.

O2 does not believe M2M numbers need to be portable in the same way that general use E.164 numbers do. No identity is associated with these numbers, they are not promoted or advertised, and are not memorised. Requiring these numbers to be portable would bring no benefit, however could require a complete re-design and re-build of existing porting processes and systems. This would bring significant cost for no apparent benefit.

The requirement to quarantine numbers after use (avoiding mistaken calls to old numbers) is also different for M2M applications. O2 believes it should be be possible to have a significantly shorter quarantine period which will lead to faster recycling. In some cases, it might be possible to avoid quarantine altogether.

ComReg needs to consider and clarify the obligations that will apply in relation to M2M applications. It is not apparent that the same obligation to provide emergency access as exists for traditional services should also apply in M2M applications. Further, it is unclear that existing arrangements (e.g. transfer of location information) could accommodate M2M devices with a 15-digit NSN.

Response to Specific Questions

Q. 1 Do you agree with ComReg that a new number range for M2M should be introduced as soon as possible?

Yes, O2 agrees that ComReg should proceed to introduce a new number range for M2M. The forecast demand growth, and the implications of exhausting existing number ranges, mean that ComReg should take action now. M2M applications have different requirements to the services that use existing number ranges (porting, ease of use, etc.) so it makes sense to separate them.

O2 does not believe that numbers from the E.164 numbering resource should be allocated for use by M2M applications where communication is provided by short range radio devices only. They do not need E.164 numbers as they do not communicate across the public electronic communications network, and their inclusion would create unnecessary capacity demand. Where they connect to a hub that is part of the public network, then the hub could be allocated an E.164 number.

Q. 2 Do you agree with ComReg's preliminary view that an overall single M2M range will adequately meet the needs of all M2M providers whether fixed or mobile, and with the use of lead digits to distinguish between fixed and mobile (at least until this may be found unnecessary)?

O2 agrees that a single new National Destination Code (NDC) should be sufficient to meet demand, at least in the short to medium term. It is not entirely clear that the distinction between fixed and mobile as a means of access will remain, however it is sensible for ComReg to begin making allocations in this way, and it is a decision that can be reviewed when services are more established.

Q. 3 Do you agree with ComReg's proposal to introduce a number range in the format 077-123 456 7890, thereby providing ten billion numbers for M2M applications?

Yes, O2 agrees that ComReg should use the maximum National Significant Number (NSN) length of 15 digits. This might mean notifying international operators that Ireland has increased its maximum number length. Using the maximum NSN length should not introduce any post-dialling delay on fixed networks, as international networks already route 10 digits to provide access to mobile mailboxes, which is longer than all other number ranges. Local operators will be expected to programme switches to differentiate between the number length for 077 (or whichever code is chosen) and other access codes. As an alternative ComReg could establish an initial 8-digit scheme with a migration path to 10 digits, however we do not support this.

O2 agrees with the proposal to use 77 as the NDC. 07X seems suitable as there are only two levels in this range that have geographic allocations. Alternatives might be 078, 079, 054, 055, however 077 seems preferable to any of the others.

Q. 4 Do you agree with ComReg's preliminary view that the standard block size for M2M numbers should initially be 100,000 for qualifying mobile applicants and 10,000 for qualifying fixed-line applicants?

O2 agrees with the proposal to allocate numbers in blocks of 100,000, with a caution. ComReg needs to be cognisant that if block transfer is to be facilitated, then clean blocks will be required (one customer per block). This could lead to significant inefficiency with a block size of 100,000. Reducing the block size to 10,000 would require analysis of the first 8 digits of the NSN, which might be a problem for some networks.

We are not sure that there will be a distinction between fixed and mobile M2M. It might be possible that an operator will mix fixed and mobile together. ComReg's proposal would seem to prohibit this, and if this is the intention, then it must be clear in the Numbering Conventions and in the conditions attached to an allocation.

Q. 5 Do you agree with ComReg's view that any emerging M2M premium rate services should be accommodated using the proposed 077-9Y range? Please provide reasons for your views.

O2 agrees that ComReg should reserve this range for now, but should not begin allocations until this has been considered further by ComReg and/or the NAP. No business model has been brought forward that would require individual premium rate numbers per machine. As an alternative, it would be possible to carry-out transactions using a single Premium Rate number that serves thousands of terminals served by standard M2M numbers. This needs further consideration.

Q. 6 Do you agree with ComReg that if new PRS M2M number ranges are to be assigned, only a limited number of these is needed (e.g. 3 per-minute and 3 per-call number ranges)?

Yes, subject to the caution expressed in response to Q. 5 above, O2 agrees.

Q. 7 Do you think there is a need to provide for number portability for the M2M communications market?

No; E.164 number transfer is not a barrier to the transfer of service or switching between service providers in this case. For M2M there is no build-up of the number in address books, no habitual dialling, etc. Instead the problem becomes one of changing IMSI without needing to visit every individual device. This is more likely to become possible with over-the-air reprogramming. In this way, new E.164 numbers would be assigned to a device on transfer. The old numbers could be recycled and re-assigned as quickly as the transfer is confirmed as complete since there is no need to quarantine M2M numbers.

The existing porting processes for fixed and mobile numbers were not designed to accommodate M2M numbers. To introduce them into existing processes would likely require a re-design and re-

build of these processes, at considerable cost. O2 does not believe it is feasible to either include M2M porting in existing processes, or to build a separate process.

Q. 8 Do you consider that the block re-allocation process described above (and covered by Numbering Convention 10.5-4) is adequate to meet the needs of M2M SPs who wish to move all of their services from one network operator to another?

Yes, it should be adequate. Again, fragmented blocks cannot be transferred, so there is a trade-off between block size and efficiency of use. Smaller blocks require more digit analysis in routing networks.

Q. 8 Is this process more appropriate for M2M than number portability or are both needed?

Yes. This can only work for clean blocks.

Q. 9 Do you agree that the National Numbering Convention 10.5-4 should be amended by rewording it to support number block re-allocation for all large number blocks, regardless of technology (i.e. principally by removing the reference to "fixed-line" in the Convention)?

Yes, O2 agrees with this amendment.

Q. 10 Do you agree that a Shared MCC+MNC provides an acceptable and practical solution to the problem of operator tie-in while also meeting the need for economies of scale in the manufacture and distribution of M2M devices?

This seems to address the problem.

Q. 11 If the ITU decide to permit M2M SPs access to MNCs, do you believe that ComReg should directly allocate MNCs and M2M numbers to very large M2M SPs? What is a minimum threshold (i.e. number of M2M applications) that ComReg could require an SP to utilise to justify access to such a MNC? Please provide reasons for your answer.

For MNC 272 there are only 100 MNCs in total available, so they could very quickly become exhausted. ComReg needs to exercise some caution before making allocations to non-mobile operators. It is not clear that the number of M2M applications is the correct criterion on which to make this decision. This point needs further consideration, perhaps the criteria used for allocation of a short-code could be adapted for MNCs.

3. BT response (received 9 May 2013)

BT Communications Ireland Ltd ["BT"] Response to:

ComReg's Consultation on

Machine-to-Machine Communications

Issue 1 – 9th May 2013

Non-Confidential Version

1.0 Introduction

We agree with ComReg that this is an important growth area and it is prudent to prepare the communications sector in a timely and considered way. We welcome the opportunity to add our comments to this debate and we focus on achieving a workable and efficient solution for the whole sector.

2.0 Key Comments

We would like to offer the following key comments which we consider both important and significant.

1. **Increasing the dialling number length –** Whilst E.164 numbers may support longer number lengths than currently existing in the national numbering plan, we are concerned that the existing switch infrastructure will not be able to support the introduction of a longer dialling numbers. Previous experience suggests that changing the number length is not a trivial upgrade on current generation switches. We would therefore need to conduct a detailed feasibility into the consequences, the costs and whether the change is economically viable before accepting this proposal. Other costs to change the industry process etc. would also need to be evaluated.

2. **The 077 proposal for M2M services –** The UK mobile networks use the access code 07 (and 077 is included in this range) and there is a considerable risk of interference between the two ranges around the border areas. Recent experience with the 028 range which are the lead digits for Northern Ireland and the STD code for Skibbereen has highlighted this issue. For example local advertising in the border region (such as on vans etc.) can lead to incorrect dialling. We understand that this consultation will address M2M services, but even in such an environment there is nothing to say the services won't be advertised and M2M

service will exist for residential and portable devices. We consider ComReg should attempt to find a non-overlapping number range and discuss this with Ofcom.

3. **Policy that a customer should know the type of service they are calling –** The ComReg policy to date has been that customers should be able to appreciate the nature of the service they are calling to help manage their costs. For example today the various service types are easily identified as geographic, mobile and premium rate etc. Whilst we understand the logic of the proposal to add premium rate numbers into the M2M range, this does not align with current policy and should be reviewed or the conventions updated. The failure to address this properly could lead to customers' being misled (when purchasing M2M services) and there is an increased risk of scams.

4. **Mixing numbering methodologies –** ComReg's approach to meeting the requirements of M2M needs to be consistent, and based upon clear and transparent principles. We note the consultation considers three types of numbering methodology in E.164 numbers, E.212 Identifiers and IPv6 addresses but does not clearly set its policy going forward other than to suggest using E.164 numbers. Such policies are important so that investment can be correctly directed and this should be provided before further allocation of numbering resources.

3.0 Response to the Detailed Questions

Q. 1 Do you agree with ComReg that a new number range for M2M should be introduced as soon as possible?

A.1. We agree in principle that a new number range for M2M should be introduced as such will remove the risk of M2M applications exhausting the existing number ranges, and will bring M2M common applications under managed number ranges and help customers easily identify the service type. Whilst we agree in principle to introducing a new number range, there are outstanding issues, some of which ComReg has identified in this consultation, that require resolution before any numbering should be allocated for M2M communication. We have reservations about how this will be achieved in practice and whether the current numbering plan has the required flexibility. We will address these issues in our response to the questions

Q. 2 Do you agree with ComReg's preliminary view that an overall single M2M range will adequately meet the needs of all M2M providers whether fixed or mobile, and with the use of lead digits to distinguish between fixed and mobile (at least until this may be found unnecessary)?

A.2 Whilst there is a clear distinction between fixed and mobile services today we would observe that the distinction is blurring as mobile operators increasingly enter the fixed market and as fixed operators increasingly adopt wireless solutions in public places (e.g. stations, coffee shops, shopping centres etc.) and significantly in the home. Our view is that a single M2M number range (with expansion capability as outlined) could meet demand however the choice of any such range should be consistent with the current

approach in the national numbering scheme in order that consumers understand the meaning of the numbers that they encounter and general price ranges.

Q. 3 Do you agree with ComReg's proposal to introduce a number range in the format 077-123 456 7890, thereby providing ten billion numbers for M2M applications?

A.3 We have concerns about the proposed 077 range as follows:

a) The ComReg proposal suggests a dialling number that is longer than is currently used by current generation PSTN switches in Ireland. Previous experience with increasing the number length of PSTN switches around the Millennium suggests this proposal could be non-trivial to implement. Prior to any acceptance of this ComReg proposal we would need to conduct a detailed feasibility study to determine the cost of such a change and potentially whether it is economically viable on current generation platform.

b) Mobile numbers in the UK start with 07 (and include 077) and we would expect calls in the border regions to cause cross country interference. We note the problems some customers experienced in Skibbereen whose numbers started with 028 which is the same as the dialling code for Northern Ireland. We would look to ComReg discussing their proposal with Ofcom and if possible adopt a solution where number ranges do not overlap.

c) The proposed mixing of the 077 range to reflect mobile fixed and premium rate is a cause for concern and we would suggest ComReg revisit the suggested allocation or revise the conventions. We are concerned that customers could be misled in the prices they would be expected to pay and the increased risk of premium rate type scams.

Q. 4 Do you agree with ComReg's preliminary view that the standard block size for M2M numbers should initially be 100,000 for qualifying mobile applicants and 10,000 for qualifying fixed-line applicants?.

A.4 We consider ComReg should simply continue its long term approach of efficiently allocating numbers following reasonable and justified requests rather than making a technology distinction at this time.

Q. 5 Do you agree with ComReg's view that any emerging M2M premium rate services should be accommodated using the proposed 077-9Y range? Please provide reasons for your views.

A.5. Please see our response in A.3c.

Q. 6 Do you agree with ComReg that if new PRS M2M number ranges are to be assigned, only a limited number of these is needed (e.g. 3 per-minute and 3 per-call number ranges)?

A.6 We consider it premature to limit the potential of a new market and suggest an approach capable of growth.

Q. 7 Do you think there is a need to provide for number portability for the M2M communications market?
Do you consider that the block re-allocation process described above (and covered by Numbering Convention 10.5-4) is adequate to meet the needs of M2M SPs who wish to move all of their services from one network operator to another?

A.7. We consider further thought is needed in this area to address the following scenarios:

- Customers' have rights under the USO and Users Rights Directive to change provider and we anticipate this fundamental user's right will apply to M2M services. Given this customer right we envisage it will be impossible for service providers to maintain ownership of small allocations such as to residential customers and number portability will continue to be required.

- For larger customers where a significant block has been allocated it may be possible to change the allocation, but where this is done there would still need to be a formal process to inform other operators so that they change their routing appropriately, otherwise unintentional transit via the losing provider will increase routing costs and take up unnecessary interconnect capacity.

Q. 8 Is this process more appropriate for M2M than number portability or are both needed?

A.8 As indicated in our response to question 7 both number portability and moving allocations will both be required in any future M2M solution.

Q. 9 Do you agree that the National Numbering Convention 10.5-4 should be amended by rewording it to support number block re-allocation for all large number blocks, regardless of technology (i.e. principally by removing the reference to "fixed-line" in the Convention)?

A.9 We propose a short delay to making this proposed decision to change the National Numbering Convention 10.5.4 for the reasons below.

- ComReg highlight in footnote 28 of the consultation that the implications of this change are wider than the M2M consultation and our concern is that the wider consequences of such an important change have not been evaluated in this consultation.
- ComReg indicate a review of the numbering conventions is due in 2013 which implies it is imminent and this proposal can be evaluated in the correct context.
- It will take time for any M2M number allocation to be deployed hence a slight delay to this outcome won't impact M2M.

Given the potential wider implications and the importance of ensuring the stability of the National Numbering Plan we suggest a short delay to this work until it is addressed in its full context in the review of the Numbering Conventions.

Q. 10 Do you agree that a Shared MCC+MNC provides an acceptable and practical solution to the problem of operator tie-in while also meeting the need for economies of scale in the manufacture and distribution of M2M devices?

A.10 The requirement for a shared MCC+MNC being allocated to M2M will require the allocation to be set aside by the ITU, with the development of associated rules encapsulated in Recommendations. This will take some time, and would possibly be a barrier to the national deployment of M2M. The alternative is to consider the utilisation of a shared MNC behind Ireland's MCC,

The current rules of the ITU-T Recommendation allow for allocation of these resources to "fixed line operators" and we see no hindrance in this being the case with the use of these resources for M2M.

Q. 11 If the ITU decide to permit M2M SPs access to MNCs, do you believe that ComReg should directly allocate MNCs and M2M numbers to very largeM2M SPs? What is a minimum threshold (i.e. number of M2M applications) that ComReg could require an SP to utilise to justify access to such a MNC? Please provide reasons for your answer,

A. 11. If the ITU-T decides to develop a Recommendation that supports the use of a shared MCC+MNC, then there would need to be rules developed to govern the assignment. Where similar rules have been developed and are applied to current global resources, such as Network codes allocated directly to Service Providers, then national regulators have no significant role. Assuming this route is followed for the national deployment of E.212 resources there should then be a specific exclusion of national E.212 resources in the national numbering plan. However such an approach does not remove the manner of the relationship between any national E.164 number (in whatever range) and such globally assigned resources from the ITU.

Documentation Control
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If you have enquiries about this document please send them to john.odwyer@bt.com thanks.

4. ALTO response (received 9 May 2013)

alto

alternative operators in the communications market

Response to Consultation – Numbering for Machine-to-Machine Communications Ref: 13/33

Submission By ALTO

Date: May 9th 2013

ALTO is pleased to respond to Consultation – Numbering for Machine-to-Machine Communications Ref: 13/33

Preliminary Comments

ALTO welcomes this general tenor of this consultation though considers that some of the issues therein are not properly considered and set out by ComReg.

ALTO notes the policy objectives contained there:

• Promotion of competition;
• Contribution to the development of the internal market;
• Promotion of the interests of end-users within the Community; and
• Ensuring the efficient management and use of the radio spectrum and numbers from the national numbering scheme in the State.

ALTO commends ComReg for bringing forward this consultation, and notes the various other European Member States who have implemented, and are in the process of bringing forward similar solutions.

Inter-machine Number Lengths – An Issue from the Past

ALTO strongly urges ComReg to revisit an issue that dogged the development of Geographic – GNP, and Non-Geographic Number Portability – NGNP, in the years 1999 and 2000.

Some officials formerly of the Market Framework Division at ComReg, will recall an interworking issue that emerged that delayed Ireland's compliance with its regulatory framework obligations at the time. The specific issue was that of numbering lengths being conveyed over various voice switching platforms.

ALTO recalls various issues, including but not limited to significant platform vendor development budget, that was required and sought to facilitate various temporary workarounds to deal with the issue of numbering lengths, billing, etc.

In ALTO's view, any Machine-to-Machine numbering solutions must be efficient and cost effective to undertakings currently providing both fixed and wireless switching capacity on and over the national network.

ALTO reminds ComReg of the myriad of costly issues that arose, during the time period referred to above. These included:

1. Reference Interconnect Offering – RIO, changes;
2. Post Dial Delay – PDD;
3. Signalling Standards Interworking (in particular, sending of stop digits on certain switching platforms and integration with VoIP);
4. Interconnection billing;
5. End-User billing;
6. Steering digit selection and approval;
7. Modifications to the National Numbering Conventions;
8. Cost to the market – Network, Testing and Billing.

Interoperability and Testing

It would be remiss of ALTO not to suggest that any proposals decided upon, on foot of responses received to this particular consultation, should be fully interoperability tested (billing, switching, routing, porting, vendor test, etc.) and preferably in a laboratory environment. ALTO submits that its own members have a strong preference for such an approach.

ALTO notes with interest that certain aspects of Current Generation Access – CGA, services might be susceptible to issues arising to such a proposal and these seem to be missing from ComReg's Consultation.

ALTO requests that ComReg re-visit the issues of:

1. Geo/Non-Geo and Mobile Portability;
2. Porting Interoperability with Local Loop Unbundling – LLU;
3. Porting Interoperability with Wholesale Line Rental – Single Billing, - WLR-SB;
4. Next Generation Network & Access – NGN & NGA;
5. Cross-Border Interoperability and Billing – Specific reference must be made to the selection of 77 as the range in focus for this consultation. It is fairly obvious that this range is similar to the UK mobile network numbering ranges.

All of the issues listed above should be strictly limited to the subject matter of this particular consultation.

National Numbering Conventions

ALTO considers that ComReg should consider consulting upon and revising the National Numbering Conventions again generally.

ALTO members are aware of a number of issues within the national number plan that continually cause issues both billing and routing issues for certain operators.

ALTO is always reluctant to call for consultation given the ongoing ComReg and operator workloads, though we note that the subsuming of RegTel into ComReg in recent years has left certain matters unresolved, and being handled in a different

manner to the mode of operation used to resolve numbering issues in the PSTN numbering spectrum. Some of these issues include: Wholesale costing of 118XX; 185X; 189X; 17XX; 076-VOIP; 0818; mobile short code ranges and Premium Rate Services – PRS.

Response to Consultation Questions:

ALTO does not propose to address each consultation question, as set out at pages 38 and 39 of the consultation paper.

ALTO requests that ComReg consider its preliminary comments as a response to this consultation, in circumstances where switching technologies and individual ALTO members' positions on this subject are divergent.

Chairperson

ALTO

9th May 2013

5. Eircom group response (received 9 May 2013)

eircom Group

Response to ComReg Consultation:

Numbering for Machine-to-Machine Communications

ComReg Document 13/33

9 May 2013

Introduction

eircom welcomes this opportunity to participate in this important consultation on the future for Machine to Machine (M2M) numbering. We responded to the questionnaire issued by the Number Advisory Panel (NAP) in 2012 highlighting the need to avoid the exhaustion of the fixed and mobile number supply. The key concern at that time was the avoidance of costly number changes that would arise with the expectation that M2M demand may necessitate an expansion of fixed and/or mobile designations. eircom was therefore supportive of the introduction of specific ranges for M2M connectivity in order to avoid number exhaustion.

However, data provided in this consultation suggests that demand for M2M connections while sizeable, may translate into significantly less demand for E164 numbers. This is due to the fact that approximately 70% of demand for M2M connectivity is forecast to be served by proprietary systems that will not require numbers form the national numbering resource. The consultation document refers to a forecast of demand for 25m M2M connections by 2020 however with approximately 30% of these expected to require E164 numbers, actual demand for numbers would grow to 7.5m numbers by 2020. The use of E164 numbers is recognised as a stop-gap measure while migration from IPV4 continues. Ultimately M2M applications are expected to be served by IPV6.

This calls for a review of the options that are available both with respect to the means by which demand for numbers is met and the timing of any decision to introduce a dedicated M2M number range, if such a range is ultimately deemed necessary.

ComReg has proposed the maximum (ITU-T) permissible number length of 15 digits in the range 077[1]. While this delivers the maximum possible quantity of numbers, it appears to be grossly disproportionate as the resulting supply of 10 billion numbers would be 130 times the forecast demand for E164 numbers for M2M connectivity. The introduction of any new range carries with it significant costs as a myriad of systems would be impacted including switches, IN, billing, number portability and customer management systems. The cost burden would be further compounded in the case of a longer number length, particularly if operators were required to extend the number length supported form the current 12 digits maximum (for customer provisioning) to 15 digits.

ComReg also proposes an alternative means of switching provider through M2M number block movements (a process that would be entirely new in to mobile operators) and the direct allocation of Mobile Network Codes (MNC) and M2M numbers to very large M2M SPs. These would likely necessitate significant development costs for operators.

Given the potential cost burden arising out of each of the proposals put forward in this consultation, a Regulatory Impact Assessment (RIA) is required and eircom does not accept ComReg's rationale for not carrying out a RIA.

Failure to Carry Out a Regulatory Impact Assessment

ComReg has concluded that a RIA is "not necessary or appropriate". The stated rationale is that this consultation is a direct response to its obligations to ensure that adequate numbers are provided and that ComReg is "not imposing a discretionary regulatory obligation but is acting under a statutory obligation imposed on it by legislation". ComReg could apply the same argument in support of any proposal put forward in furtherance of its statutory obligations. However such logic cannot prevail where ComReg is exercising a degree of discretion in its decision making and particularly where significant costs to industry hang in the balance.

[1] In the format 353 77 12 3456 7890 – with the Irish country code 353 and prefix 77 making up 5 of the 15 digits.

With respect to costs, taking the recent experience of a relatively minor numbering development involving mobile number portability service establishment for a new entrant, we estimated the cost to industry to have been in excess of €1m. Introducing a longer number range would have significantly more impact, resulting in multiples of this cost that would impact both fixed and mobile operators. Furthermore it is proposed that there would be a demarcation between traditional and M2M usage whereby M2M numbers should not be used for traditional phone services. This implementation of such demarcation on customer provisioning systems could give rise to significant additional costs.

Alternatives need to be considered, including the potential for encouraging the migration to IPV6, exploiting work-around solutions in IPV4 and considering the current supply of existing E164 numbers. While all stakeholders have concerns about the long term use of E164 numbers, if a migration path can be put in place for the medium term, the use of E164 numbers may prove to be the most cost effective solution up to 2020.

In section 4 of the consultation which considers whether a Regulatory Impact Assessment is needed, ComReg partially quotes paragraph 1.6 of its own Guidelines on ComReg's Approach to Regulatory Impact Assessment[2], stating:

"Where ComReg is merely charged with implementing a statutory obligation it will assess each case individually and determine whether a RIA is necessary and justified",

Whereas this sentence in its Guidelines reads in full as follows:

"*Where ComReg is merely charged with implementing a statutory obligation it will assess each case individually and determine whether a RIA is necessary and justified, having regard to its degree of discretion it may exercise, and the principles of reasonableness and proportionality*. (emphasis added)

In this instance, ComReg is presented with a number of options with respect to the form and the timing of any solution for M2M numbering. While the ECC recommendation suggests a 15 digit number length, ComReg is not mandated to introduce a longer number length or indeed any new number range. We consider the key areas of ComReg discretion on this matter to be as follows:

- Whether a new range should be introduced at all and
- If a new M2M range can be justified:
    - At what point in time or at what level of demand should this be introduced
    - The optimal number length
    - Whether traditional porting should be supported for any new number range
    - Whether an alternative means of switching provider through number block movements should be supported.
    - Whether ComReg should directly allocate Mobile Network Codes (MNC) and M2M numbers to very large M2M SPs

As outlined in the response to the consultation questions, these proposals may give rise to significant costs to industry. ComReg has discretion on each of these and so in accordance with its own guidelines, ComReg must have due regard for the principles of reasonableness and proportionality. ComReg has failed to do this and therefore has not met the necessary standard for a proper and comprehensive consultation, which should include a RIA on the options available and its proposed course of action.

[2] http://www.comreg.ie/_fileupload/publications/ComReg1333.pdf

Responses to Consultation Questions

Q. 1 Do you agree with ComReg that a new number range for M2M should be introduced as soon as possible?

eircom recommends that a new number range for M2M should only be introduced, in response to evidence of demand for numbers for M2M that presents a risk of exhaustion of existing number ranges.

ComReg should set a threshold for M2M usage which would trigger the introduction of M2M number ranges bearing in mind that demand for E164 numbers for M2M connections has been forecast to be 7.5m by 2020 and the fact that there is an ample supply of E164 numbers to meet this demand. For instance the five mobile ranges that are currently in use constitute a number supply of 50 million numbers and currently serve just under 5.46m subscribers.

Q. 2 Do you agree with ComReg's preliminary view that an overall single M2M range will adequately meet the needs of all M2M providers whether fixed or mobile, and with the use of lead digits to distinguish between fixed and mobile (at least until this may be found unnecessary)?

As set out in the introduction and in response to question 1, eircom does not agree with the proposal to introduce a specific range for M2M numbers on foot of this consultation and in the absence of more detailed assessment of demand and a regulatory impact.

Notwithstanding the above reservations and for the purpose of informing any further consultation, eircom agrees that that an overall single M2M range would adequately meet the needs of all M2M providers whether fixed or mobile. We would support the use of lead digits to distinguish between fixed and mobile while this remains necessary.

Q. 3 Do you agree with ComReg's proposal to introduce a number range in the format 077-123 456 7890, thereby providing ten billion numbers for M2M applications?

As outlined above, eircom does not agree with the introduction of a new M2M number range at this point and if a new range were justified in the future we do not believe that it would be necessary to exceed existing fixed and mobile number lengths of 12 digits.

ETSI has highlighted the importance of both short-range or proprietary radio links and mobile networks. It states that while many M2M deployments will make use of short-range or proprietary radio links, mobile cellular-based M2M solutions will be preferred where mobility is required, or where high data volumes or data transfer rates are involved[3]. In the consultation document ComReg quotes Machina projections which also highlight the importance of Short Range connections. These indicate that 75% of M2M communications are currently Short Range, with projections that this will fall back to 70% in 2016 before gradually increasing to just 71% in 2020. Given that these are typically hosted on proprietary networks, operating to their own addressing schemes, these should not encroach on the national numbering resource.

This has important implications for the quantity of numbers ultimately required for M2M applications. Machina projects for significant annual growth of up to 42% over the next five years dropping back to 19% in 2020. Assuming that 75% of applications involve proprietary solutions, of the 25 million connections projected for 2020, approximately 70% (17.5 million) are expected to involve proprietary solutions. This suggests that the demand for M2M numbers would be 7.5 million in 2020. Therefore demand for M2M numbers could be met within the existing supply of E164 numbers as suggested in response to question 1.

[3] http://www.etsi.org/technologies-clusters/technologies/m2m

It is also important to bear in mind the fact that the ECC Recommendation (11) 03 set out that "a long term solution is IPv6 or numbers/addresses other than E.164 numbers should preferably be used for M2M applications" suggesting that in the interest of efficiency the E164 numbering supply for M2M applications should not exceed expected demand prior to the launch of IPV6. This supports the argument for utilising existing E164 capacity and avoiding the encumbrance of new number range in order to serve a relatively short term demand based on forecasts provided in this consultation.

Q. 4 Do you agree with ComReg's preliminary view that the standard block size for M2M numbers should initially be 100,000 for qualifying mobile applicants and 10,000 for qualifying fixed-line applicants?

Given the lack of certainty in respect of current and future patterns of demand for M2M numbers we would recommend that number blocks should be tailored to demand. This is typically how secondary allocations operate today. Based on our proposal to operate within existing E164 ranges for the time being, M2M allocations should continue on this secondary allocation basis (i.e. ComReg allocates blocks to operators who in turn allocate numbers to end users). For the avoidance of doubt we propose that this would not alter the block sizes for primary allocations with 1000 per block for geographic and non-geographic numbers and 100,000 for mobile numbers.

Q. 5 Do you agree with ComReg's view that any emerging M2M premium rate services should be accommodated using the proposed 077-9Y range? Please provide reasons for your views.

Notwithstanding the concerns raised above, in principle eircom disagrees with the proposal to attempt to accommodate premium rate services in a M2M environment.

Having considered the cost implications of introducing a range with a number length of 13 or more digits and the need to conserve the numbering resource, particularly in the case of 12 digit numbers, eircom calls into question the merit of providing equivalents to today's non-geographic ranges in the M2M world. Non-geographic numbers primarily serve end user price transparency requirements which do not arise in the M2M environment. Our expectation is that any pricing requirements that arise can be addressed through the business to business relationships under which M2M applications will operate. Taking the example of premium rate numbering, if a vending machine sensor were to prompt a maintenance call, it is likely that the maintenance call would be a high value service the value of which could not reasonably be covered by inter-operator and retail billing by the communications provider. To do so would require premium charges to the value of tens or hundreds of Euro. Therefore we would recommend that any spare numbering capacity should be reserved primarily for traditional fixed and mobile services and for M2M application as supply permits.

Q. 6 Do you agree with ComReg that if new PRS M2M number ranges are to be assigned, only a limited number of these is needed (e.g. 3 per-minute and 3 per-call number ranges)?

Notwithstanding the objections to designating premium ranges raised in response to question 5, should demand arise in the future we offer the following observation which may inform any future consultation on the matter. Based on data that was to hand for 2011 relating to mobile usage, [redacted]% of minutes were to just 3 of the per-minute sub ranges and [redacted]% of calls were to the top 3 per-call sub ranges. These represented the low mid and high price points of each. This suggests that if demand were to emerge for relatively low value M2M applications, three ranges would suffice, representing a low, mid and high price point. For the time being however eircom does not consider the introduction of premium ranges for M2M applications to be warranted due to the fact that the values involves are likely to far exceed current premium price levels thereby rendering the operation of premium M2M impractical, as set out in response to question 5.

Q. 7 Do you think there is a need to provide for number portability for the M2M communications market?

Do you consider that the block re-allocation process described above (and covered by Numbering Convention 10.5-4) is adequate to meet the needs of M2M SPs who wish to move all of their services from one network operator to another?

eircom agrees that there is currently and will remain a need to provide for number portability. The consultation refers to block re-allocation in the fixed environment and proposes changes to the number conventions to cater for this in a mobile environment. However the consultation fails to consider the costs of developing such a process in the mobile environment and integrating this into the mobile number portability framework. Nor does it consider the implications of block re-allocation in the fixed environment in the case of the new M2M application. eircom is concerned that the introduction of a block re-allocation process for M2M would not only carry costs in its own right but would also add to the costs of operating traditional number portability should it ultimately be found that key elements of number portability cannot be sidestepped. These concerns must be addressed through a comprehensive RIA.

Q. 8 Is this process more appropriate for M2M than number portability or are both needed?

As outlined in response to question 7, we don't believe that existing fixed/mobile porting and fixed block movement solutions should be supplemented at this stage. Existing porting solutions have been able to cater for large corporate moves between providers and to date we have not been presented with a M2M move of equivalent size or of any magnitude that has been identified as a M2M block port. While eircom appreciates that demand is likely to grow, there is no evidence to show that such demand could not be reasonably met through existing porting capacity. We therefore recommend that any decision on specific porting provisions for M2M should be deferred until such demand can be accurately forecasted.

Q. 9 Do you agree that the National Numbering Convention 10.5-4 should be amended by rewording it to support number block re-allocation for all large number blocks, regardless of technology (i.e. principally by removing the reference to "fixed-line" in the Convention)?

Further to the objections raised in response to questions 7 and 8 and indeed the concerns raised throughout this response we do not agree that the numbering conventions should be amended at this stage.

Q. 10 Do you agree that a Shared MCC+MNC provides an acceptable and practical solution to the problem of operator tie-in while also meeting the need for economies of scale in the manufacture and distribution of M2M devices?

eircom does not agree that a shared MCC+MNC provides an acceptable or practical alternative. It is not clear to eircom how the proposal would serve to reduce the alleged operator tie-in or indeed how a manual process for porting numbers could improve on the fully automated mobile number portability solution that is currently in place.

Q. 11 If the ITU decide to permit M2M SPs access to MNCs, do you believe that ComReg should directly allocate MNCs and M2M numbers to very large M2M SPs? What is a minimum threshold (i.e. number of M2M applications) that ComReg could require an SP to utilise to justify access to such a MNC? Please provide reasons for your answer,

Allegations of market failure have been put forward in the consultation document, suggesting that large M2M providers will suffer from insufficient choice and sub-optimal market power. No evidence has been provided to support these claims yet a remedy of direct number allocations

has been proposed in the absence of any consideration of the implications to existing systems. For instance the mobile number portability (MNP) solution relies heavily on the identification of the native block holder for each number block allocation. Under this proposal there would be direct implications for the MNP solution each time such an allocation would be made. This calls for further consideration of the cost versus any actual as opposed to perceived benefits that might arise.

Notwithstanding eircom recommendation that the numbering conventions should remain unchanged at this stage we question the proposed change to convention 10.7.11., which suggests that M2M service providers would be at liberty to use their Mobile Network Code (MNC) services outsider Ireland while network operators would be limited to the use of their MNC within Ireland. This would appear to discriminate against mobile operators in Ireland.

Proposed change to convention 10.7.11. (extract)
Mobile network codes (MNCs) are issued to network operators and to very large Machine-to-Machine (M2M) service providers from the range 01-99, to be used in accordance with ITU-T Recommendation E.212, only in conjunction with their mobile telecommunications service in Ireland or their M2M offerings, as appropriate.

6. Silver Spring Networks response (received 9 May 2013)

Response to ComReg consultation 'Numbering for Machine to machine communications' (ref ComReg 13/33)

Q. 1 Do you agree with ComReg that a new number range for M2M should be introduced as soon as possible?

SILVER SPRING NETWORKS believes that making provisions for M2M communications is neither appropriate nor desirable. The global market for M2M devices over the next decade is variously estimated to be hundreds of millions to several billion devices, depending on analyst. The technical solution for the connection of all of these devices is not yet clear, and is likely to comprise a variety of technologies depending on the exact application. The only way in which such a variety of device types can be managed is to use the proven layer 3 protocol, IP, in particular IPv6. The use of such a scheme will allow the disparate underlying technologies to be bound together into a coherent network that stands some chance of being managed and being future proofed.

Encouraging operators to use E164 numbers is inappropriate and will lead the industry in the wrong direction. It will freeze in an architecture that is appropriate for today's generation of telecoms service providers and lead Ireland towards a future fraught with difficulties in managing this legacy structure.

ComReg should take this opportunity to force ISPs to introduce IPv6 capabilities in their networks, thereby making them capable of connecting the vast number of devices. The Internet is perfectly well able to cope with the demand from these devices, many of which will generate very little data compared with average current end points on the Internet.

SILVER SPRING NETWORKS believes that the ECC report 153 (Numbering and addressing in Machine-to-machine (M2M) communications) is ill-conceived, especially the comments that, 'A complete harmonised approach on possible M2M numbering solutions is not needed in Europe'. The harmonised approach should be IPv6, which is a harmonised ***global*** approach.

Operators should be encouraged to introduce IPv6 as soon as possible, else 'make-do' solutions will become embedded. These solutions will be technically and economically expensive and ever more expensive to migrate to the 'long-term' solution.

Q. 2 Do you agree with ComReg's preliminary view that an overall single M2M range will adequately meet the needs of all M2M providers whether fixed or mobile, and with the use of lead digits to distinguish between fixed and mobile (at least until this may be found unnecessary)?

SILVER SPRING NETWORKS disagrees with ComReg's preliminary view, because the idea that 'fixed' and 'mobile' M2M ranges should be introduced is not technology neutral and risks locking in an inappropriate architecture.

Q. 3 Do you agree with ComReg's proposal to introduce a number range in the format 077-123 456 7890, thereby providing ten billion numbers for M2M applications?

No (see above). Using telecoms infrastructure to 'route' data between M2M devices is inappropriate and likely to be – relatively – very expensive.

Q. 4 Do you agree with ComReg's preliminary view that the standard block size for M2M numbers should initially be 100,000 for qualifying mobile applicants and 10,000 for qualifying fixed-line applicants?

No (see above)

The Machina research appears to consider only (human!) access to M2M services. By definition, M2M connections in Ireland will be dominated by tens or hundreds of millions of connections between devices. IPv6 is the obvious way forward. Access to this network will be via traditional gateways coupled with appropriate URLs. A proliferation of new telecoms access numbers is unnecessary.

Q. 5 Do you agree with ComReg's view that any emerging M2M premium rate services should be accommodated using the proposed 077-9Y range? Please provide reasons for your views.

If fixed and mobile operators want to charge their customers for accessing services via their network, then they can use existing ranges and mechanisms. The core of the IoT – the way in which future M2M applications should be combined – should be as an IPv6 extension to the Internet. Any other way risks 'stove pipe' development of applications with a risk that operators could abuse a dominant position to force others to use proprietary solutions.

Q. 6 Do you agree with ComReg that if new PRS M2M number ranges are to be assigned, only a limited number of these is needed (e.g. 3 per-minute and 3 per-call number ranges)?

Yes

Q. 7 Do you think there is a need to provide for number portability for the M2M communications market?

Number portability should apply for all numbers, and if operators chose to use numbers to allow their customers to access M2M-type services then all well and good, but no numbers should be given special status associated with M2M for the reasons given above.

Do you consider that the block re-allocation process described above (and covered by Numbering Convention 10.5-4) is adequate to meet the needs of M2M SPs who wish to move all of their services from one network operator to another?

Porting of numbers supporting M2M is just the first example of complications introduced by using such an inappropriate technical solution and shows how such an approach should be discouraged.

Q. 8 Is this process more appropriate for M2M than number portability or are both needed?

No comment

Q. 9 Do you agree that the National Numbering Convention 10.5-4 should be amended by rewording it to support number block re-allocation for all large number blocks, regardless of technology (i.e. principally by removing the reference to "fixed-line" in the Convention)?

No comment

Q. 10 Do you agree that a Shared MCC+MNC provides an acceptable and practical solution to the problem of operator tie-in while also meeting the need for economies of scale in the manufacture and distribution of M2M devices?

No. IPv6 and its management offer a perfectible viable way of managing the transfer of devices between SPs

Q. 11 If the ITU decide to permit M2M SPs access to MNCs, do you believe that ComReg should directly allocate MNCs and M2M numbers to very large M2M SPs? What is a minimum threshold (i.e. number of M2M applications) that ComReg could require an SP to utilise to justify access to such a MNC? Please provide reasons for your answer.

No comment

Dr Simon Dunkley
Director, Regulation in Europe
Silver Spring Networks (UK) Ltd

9th May 2013

7. Magnet Networks response (received 9 May 2013)

Magnet Networks welcomes the consultation on Numbering for Machine to Machine Communications. This is timely especially in light of the CER's smart metering project and the explosion of machine to machine communications in smart TV's, alarms etc.

Magnet will give an overall view rather than answer each question specifically. Magnet has a few reservations in allocating a 077 number range. One of the issues is the close proximity in number ranges from 076 and 077. Magnet's experience to date is that government agencies are adopting 076 numbers as their number range for calls. Another concern is any cost implications that it may have on operators. This cost implication has not been borne out in this consultation, and would be welcomed by a small operator liked Magnet. The last, and may be most pertinent concern is the failure to fully address a need to move to IP based communication rather than relying on number ranges. Irrespective of the deployment of IPv6, Magnet feel that it is better to move fully to an IP based service, rather than investing in 077 ranges now only to have to move within 3 years and thus, causing the need to reinvest. IPv4, Magnet believe would have the sufficient capacity to deal with the current demand as we envisage a move to IPv6 within the next 2 years. It would be more cost efficient to implement IP now especially in light of how both mobile and fixed backhaul their communications and the proliferation and move by fixed operators to VoIP services.

As outlined above Magnet welcomes this consultation as it's a debate that will become more relevant with the roll out of smart metering and that infiltration of modern lives with communication machines. However, Magnet urges ComReg to take a longer term view and implement an IP methodology now and prevent short sighted investment.