AT&T Comments on ComReg Document 15/60: *Review of the Numbering Conditions of Use and Application Process*

14 August 2015

AT&T is pleased to provide the following response to ComReg's *Review of the Numbering Conditions of Use and Application Process* (the "Consultation"), as published on the ComReg website on 26 June 2015. AT&T, given its leadership in working with customers to develop mobile solutions, particularly in the machine-to-machine (M2M) and Internet of Things (IoT) space,[1] welcomes the opportunity to inform policies that will further stimulate the proliferation of diverse mobile solutions and innovation in Ireland.

AT&T welcomes ComReg's initiative to review the National Numbering Conventions, with a view toward consolidating and clarifying numbering management policies to better align with conditions of the General Authorisation and to accommodate stakeholder requirements. Indeed, policy intended to protect finite resources while enabling competition, protecting consumers and encouraging regulatory and technological innovation requires regular calibration with market dynamics and technological advances. AT&T applauds ComReg for taking this action and, in particular, for proposing to clarify the eligibility criteria for right of use for a mobile number and Mobile Network Code (MNC). We support more flexibility in the assignment of such numbering resources to accommodate the expected growth in mobile services, specifically M2M communications and the IoT.[2] We, therefore, focus our comments on two sections of the Consultation, section 3.5 (Mobile Numbers and Mobile Network Codes) and section 3.13 (Other Issues), where we discuss the concept of extra-territorial use of numbering resources. As described in our responses below, AT&T submits that ComReg, as proposed, should amend the current text of the National Numbering Conventions to clarify, and to therefore make unequivocal, that mobile network virtual operators (MVNOs), in addition to mobile network operators (MNOs), may be granted rights of use for mobile numbers and MNCs. Such an amendment will foster competition and innovation in the Irish mobile market. Furthermore, in order to facilitate new business models for M2M services and the IoT, AT&T asserts that (as more fully explained in our reply to section 3.13 below) ComReg should explicitly allow the extra-territorial use of numbering resources—that is, Ireland should allow the

[1] AT&T has a proven M2M/IoT success record, with more than 23 million connected devices, almost 2,400 approved devices and industry analyst recognition for solution deployment experience and capability. For example, in Current Analysis' latest global M2M product report on AT&T, principal analyst Kathryn Weldon again recognizes AT&T as a "leader" in the global M2M services market and writes that AT&T has "excellent traction for its M2M initiatives" and "expertise in key verticals" (Current Analysis, "*AT&T - Global M2M Services and Strategies Product Assessment*," June 2015). AT&T also collaborates with other U.S. industry leaders such as Cisco, GE, IBM, and Intel. In 2014, AT&T and these foremost M2M/IoT companies announced the Industrial Internet Consortium to help establish standards and accelerate M2M service growth.

[2] AT&T agrees with ComReg's recognition that the issue of the eligibility for mobile numbering needs to be addressed further. "To take account of future technology developments in areas such as OTT services, machine-to-machine (M2M) communications and the Internet of Things (IoT), ComReg will engage with industry in due course to consult on the eligibility criteria for Mobile Numbers and MNCs" (Consultation at para. 74, page 23).

use of Irish numbering resources outside of Ireland, as well as allowing the use of foreign numbering resources within Ireland.

I. Clarifying the eligibility criteria for right of use for a Mobile Number or Mobile Network Codes (Section 3.5 of Consultation)

AT&T supports ComReg's proposal to amend the text of the eligibility criteria to clarify that MVNOs are eligible to acquire the right to use mobile numbers and MNCs, by virtue of the fact that MVNOs have access to MNO networks through contractual agreements. AT&T notes that ComReg has granted rights to use MNCs to MVNOs in the past and the proposed change to the eligibility criteria therefore represents a welcome clarification rather than a change in policy. Enabling MVNOs to use their own SIM cards, which contain the mobile number and MNC, means that such providers may operate independently of the underlying network operator and, if necessary, change to another network operator to obtain improved service. This avoids MVNOs being "locked in" to their underlying network operator by the potential need to repopulate multiple databases with new numbers, thereby creating market conditions conducive to competition and more differentiated and innovative product offerings by new entrants.

While welcoming the proposed clarification, AT&T urges ComReg not to insist that an MVNO applicant must produce a final contractual agreement with an MNO in order to be granted the right to use an MNC. AT&T suggests that, prior to conclusion of a contractual agreement, any MNC applicant able to demonstrate evidence of commercial negotiation with an MNO, and therefore a credible intent to offer service, should be eligible to file an application for assignment.[3] This flexibility will facilitate planning and time to market. Moreover, the right to use the MNC could be granted provisionally—e.g., for a period of 1 to 3 years—and permanently thereafter upon demonstration of efficient use of the assigned International Mobile Subscriber Identity (IMSI) block, which includes the MNC. Such an approach would enable ComReg to recover unused numbers.

Finally, ComReg's proposal to clarify its mobile number and MNC eligibility criteria comes when telecommunications networks are undergoing a profound transformation. Therefore, ComReg's MNC assignment procedures should be sufficiently flexible to accommodate different business and implementation models—e.g., based on partnerships with Mobile Virtual Network Enablers (MVNEs) and technology evolution—in order to adequately meet market demands. MNC applicants may have distributed network architectures, with network elements located in different countries. Indeed, many telecom operators are now implementing or considering plans for Network Function Virtualisation[4] where current network hardware elements are evolving to virtual, software based functions inside a general purpose computing infrastructure. Additionally, while AT&T understands that an applicant for an MNC will necessarily have to make use of certain network infrastructure elements (in particular a

[3] This assumes the applicant would also have filed an appropriate notification as a provider of electronic communications networks and/or services under Ireland's General Authorisation regime.

[4] *See* http://www.att.com/Common/about_us/pdf/AT&T%20Domain%202.0%20Vision%20White%20Paper.pdf

Home Location register), an MNC applicant should not be required to own such infrastructure, nor should there be a requirement for such infrastructure elements to be located in Ireland in order to apply for an MNC. It would be helpful if, in addition to stating that an MVNO's eligibility to acquire rights to use an MNC is based on its contractual agreement with an MNO for access to the MNO's mobile networks, ComReg could also explicitly confirm that such eligibility does not depend on ownership, control or location of various network elements.[5]

II. Extra-territorial Use of Numbering Resources as "Other" Issues (Section 3.13 of Consultation)

ComReg asks for views on any issues not discussed in the document that may be appropriate to the draft Numbering Conditions.[6] AT&T, therefore, would like to present a numbering concept central to M2M communications and the IoT: the extra-territorial use of numbers. AT&T believes that in order to facilitate growth in and development of M2M services and the IoT, and also to dampen unnecessary demand for MNC resources,[7] national numbering plans should explicitly permit the extra-territorial use of numbering resources.[8]

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[5] In August 2015, the Belgian regulator, BIPT, published a summary of conclusions ("BIPT Summary") to its November 2014 consultation on the revision of the Belgian numbering plan in which it confirmed its proposal to remove the requirement to have a network or network elements as a condition for acquiring rights to use an MNC. Instead, Article 75 of the Belgian Royal Numbering Decree is to be amended so that rights to use MNCs may be assigned "to enterprises who prove that they have entered into negotiation with a mobile network operator and have a realistic intention of operating a service capable of using this numbering capacity in a useful manner" ("aux entreprises qui prouvent qu'elles ont engagé des négociations commerciales avec un opérateur de réseau mobile et ont une intention réaliste d'exploiter un service capable d'utiliser cette capacité de numérotation de manière utile"). In addition, once 70% of the MNCs allocated to Belgium by the ITU have been reserved or assigned, BIPT will adopt additional conservation criteria to avoid exhaustion of MNC reserves. *See* http://bipt.be/public/files/fr/21535/Public%20synth%20analy%20consult%20review%20KB%20N%20FR.pdf (French), section 8 at page 22.

[6] Consultation at para. 111, page 32. AT&T appreciates that ComReg plans to issue a consultation to address eligibility criteria for mobile numbers and MNCs in the context of technological developments including M2M and the IoT. Not knowing whether the intended proceeding will include an opportunity to address the extra-territorial use of national numbering resources, and given its relevance to the national, as well as global, deployment of M2M services and the IoT, we address the issue in our response to the current consultation.

[7] Looking at the future demand for MNCs, ComReg should consider that allowing service providers to utilise foreign IMSIs in an extra-territorial matter within Ireland could reduce the demand for Irish MNCs. Specifically, if extra-territorial use is not allowed, then multiple operators may apply for Irish MNCs that otherwise would have no technical need to do so.

[8] In the August 2015 BIPT Summary, the Belgian regulator confirmed its proposal to permit the extra-territorial use of both E.212 (MNC) and E.164 (mobile) numbers for M2M services. Specifically, BIPT intends that Article 8 of the Belgian Royal Numbering Decree, which prohibits the use of foreign numbers in Belgium, be amended thus: "The use on a permanent basis of Belgian numbers abroad and vice versa of foreign numbering capacity in Belgium is authorised for M2M applications." ("L'utilisation sur une base permanente de la capacité de numérotation belge à l'étranger et vice versa de la capacité de numérotation étrangére en Belgique est autorisée pour les applications M2M.") *See* http://bipt.be/public/files/fr/21535/Public%20synth%20analy%20consult%20review%20KB%20N%20FR.pdf (French), section 10 at page 35.

Fundamental to any analysis relative to M2M communications and the IoT is that the business models supporting this technology are substantially different from those of more traditional mobile communications and that significant benefits arise from the use of a single numbering solution.

AT&T wishes to note that traditional handset business models do not readily accommodate M2M/ IoT device manufacturers, and would force them to:

- Have country-specific SIMs provisioned for each M2M/IoT device to be distributed in each country, thereby requiring manufactures to establish unique platforms with dozens or even hundreds of carriers;

- Manage the entire customer logistics chain with extreme precision on a per-country basis (*i.e.*, forecast demand, distribution, activation, support, repair), negatively impacting efficiency; and

- Have the capability to interface with and navigate a unique platform for each MNO with which it contracts in every country, costing several hundred thousand euros per platform.

To achieve the necessary economies of scale, M2M/IoT device manufacturers often partner with a single MNO to maximise the MNO's commercial agreements for wireless connectivity in all, or nearly all, of the countries where the manufacturer seeks to sell its products. Having one agreement with one MNO eases expansion and provides predictability for the manufacturer. This single platform approach, predicated on the extra-territorial use of numbering resources, substantially reduces barriers to market entry for M2M/IoT device manufacturers, particularly for smaller entrants that would not otherwise have sufficient resources to compete on a global scale. In other words, the new business models enable economic viability by allowing M2M/IoT device manufacturers to "build it once and sell it everywhere."

There are distinct, well-established commercial models used between mobile operators that provide a practical basis for accommodating and facilitating the extra-territorial use of numbers on a bilateral commercial basis. Foremost among these is the international M2M roaming framework that addresses and makes transparent international roaming used explicitly for M2M services. The roaming framework, currently the most efficient manner of delivering global M2M services, which support the IoT, enables the use of the home carrier's numbers to provide services on a global basis through a single SIM architecture. Under the M2M roaming framework—endorsed through MNOs' adoption of the GSM Association's (GSMA) M2M Roaming Principles—procedures are in place to transparently identify, measure and distinguish M2M roaming traffic from traditional handset or tablet roaming traffic.[9]

[9] Among other things, the GSMA M2M Roaming Principles ensure transparency in the provision of M2M services by requiring the parties to agree to identify their M2M traffic separately from other traffic and to exclude traditional wireless services (*e.g.*, conventional 2-way dialable PSTN voice). The Principles are confined to GSMA members but were shared earlier this year with the BEREC M2M Project Team in response to a specific request from that Team.

Critically, allowing the extra-territorial use of national numbering resources does not diminish or restrict the scope of authority and interest of ComReg. National regulators retain oversight mechanisms, and can endorse a flexible numbering policy, while addressing policy interests in other areas.[10] Nor has the International Telecommunications Union (ITU) or the EU set any precedent preventing the use of global numbering resources.

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AT&T commends ComReg for engaging stakeholders to advance the conversation to inform regulatory policy that enables Ireland's numbering resources to be used to the maximum benefit.[11] AT&T would be pleased to answer any questions concerning these comments and looks forward to a further consultation on M2M communications and the IoT.

Respectfully submitted,

Mike Corkerry
Executive Director, EMEA Government Affairs
AT&T
www.attglobalpolicy.com

[10] To address any policy issues that could arise from the extra-territorial use of numbers, in its November 2014 numbering consultation, BIPT proposed as a general principle that the regulatory authority of the country where consumption takes place should be responsible for regulating that consumption, save for numbering, where the authority whose numbering plan is being used remains competent. "We could establish the following general rule: the authority of the country where consumption takes place is responsible for regulating consumption, except as regards numbering, where the country whose numbering plan is used is responsible." ("L'on pourrait établir la règle générale suivante: c'est l'autorité du pays où a lieu la consommation qui est compétente pour la réglementation de la consommation, sauf en ce qui concerne la numérotation, pour laquelle c'est le pays du plan de numérotation qui est competent.") *See* http://www.bipt.be/public/files/fr/21394/Consult_review_KB_Nummering_FR.pdf (French) at page 25. BIPT has now confirmed its plans to adopt this approach. *See* BIPT Summary section 10, number 101 at page 33.

[11] AT&T notes that ComReg was at the forefront of M2M numbering issues with its 2013 consultation on M2M, ComReg Documents 13/33 and 13/109, *Numbering for Machine-to-Machine Communications*. *See* http://www.comreg.ie/_fileupload/publications/ComReg1333.pdf and http://www.comreg.ie/_fileupload/publications/ComReg13109.pdf