AT&T Comments on BIPT's Consultation Regarding the Revision of the Policy for the Management of the Numbering Plan

31 March 2015

AT&T is pleased to provide the following comments on BIPT's *Consultation at the request of the BIPT Council of 25 November 2014 regarding the revision of the policy for the management of the numbering plan* ("the Consultation"), as published on the BIPT website on 10 December 2014. AT&T, given its leadership in working with customers to develop mobile solutions, particularly in the machine-to-machine (M2M) space,[1] welcomes the opportunity to inform policies that will further promote the proliferation of mobile services and innovation in Belgium.

AT&T applauds BIPT's initiative to review the policy for the management of the Belgian national numbering plan. We believe BIPT has issued well-reasoned and forward-thinking proposals for the liberalisation of Belgium's numbering resources and commend the regulator for taking concrete steps toward more flexible numbering policies to accommodate the expected growth in mobile services, specifically machine-to-machine (M2M) communications. We, therefore, focus our comments on two sections of the Consultation, section 4.1 (on introducing more flexibility in assignment of E.212 Mobile Network Codes (MNCs) and section 4.3 (on extra-territorial use of numbering resources). As described in our answers below to the questions in these sections, AT&T submits that the current rules should be amended to allow market players other than operators having network elements to apply for and be assigned MNCs. We believe that such a change in assignment policy will promote competition and innovation in the Belgian mobile market. Furthermore, in order to facilitate new business models for M2M services, AT&T asserts that (as described more fully in our answer to section 4.3 below) Belgian authorities should explicitly allow the extra-territorial use of numbering resources—that is, authorities should allow the use of Belgian numbering resources outside of Belgium, as well as allowing the use of foreign numbering resources within Belgium. AT&T supports BIPT's proposals to revise the current Belgian Numbering Decree[2] to achieve these objectives.

I. **Introducing more flexibility in assignment of E.212 MNCs (Section 4.1 of Consultation)**

AT&T supports BIPT's proposal to remove the current restriction in Article 75, para. 2 of the Belgian Numbering Decree that limits MNC allocation to operators with a network or network elements. AT&T

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[1] AT&T has a proven M2M success record, with 1,800 certified connected devices, more than 17 million endpoints in active service and industry analyst recognition for solution deployment experience and capability. For example, in a recent iteration of Current Analysis' Global M2M Service provider rankings, principal analyst Katherine Weldon identifies AT&T as a "leader" in global M2M services and strategies and writes that AT&T has "excellent traction for its M2M initiatives" *(Current Analysis, "AT&T - Global M2M Services and Strategies Vendor Profile," October 2014).* AT&T also has contractual agreements with other U.S. industry leaders such as Cisco, GE, IBM, and Intel.

[2] *Arrêté royal relatif à la gestion de l'espace de numérotation national et à l'attribution et au retrait des droits d'utilisation de numéros,* 27.4.2007 (Royal Decree on the administration of the national numbering space and the grant and withdrawal of rights to use numbers - "the Belgian Numbering Decree")

agrees with BIPT that "the requirement to have one's own network elements is unjustifiably limiting the market and hindering innovation".[3] AT&T believes that allowing MNCs to be assigned directly to more Mobile Virtual Network Operators (MVNOs), M2M service providers and providers of other mobile services would promote competition in the Belgian mobile market and would encourage additional differentiated and innovative product offerings by, for example, MVNO market entrants. Notably, BIPT acknowledges that the mobile ecosystem is undergoing dramatic changes.[4] Therefore, to fully exploit the potential of this trajectory, more operational flexibility for MVNOs and others is warranted.

Moreover, by enabling more MVNOs to issue their own SIM cards, such providers may operate independently of the underling network operator and, if necessary, change to another underlying network operator to obtain improved service. This will avoid MVNOs being "locked in" to their underling network operator by the potential need to repopulate multiple databases with new numbers, thereby increasing competition.

AT&T suggests that 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. Any applicant would also need to have filed an appropriate notification as a provider of electronic communications networks and/or services under the general notification regime. 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 numbering resource. This would give BIPT the ability to recover unused MNCs.

While AT&T is of the view that an applicant for an MNC will necessarily have to make use of certain network infrastructure elements (in particular a Home Location register), an MNC applicant should neither be required to own such infrastructure nor should there be a requirement for such infrastructure elements to be located in Belgium in order to apply for an MNC. Instead, MNC assignment rules and procedures should be sufficiently flexible to accommodate different business and implementation models; e.g., based on contractual agreements with Mobile Virtual Network Enablers (MVNEs), as well as 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[5] where current network hardware elements are evolving to virtual, software-based functions inside a general purpose computing infrastructure.

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[3] "Ces exemples illustrent bien que la nécessité de dispose d'éléments de réseau propres freine le marché et complique l'innovation, sans que cela ne se justifie." Consultation at 4.1.a. at p. 14

[4] "La chaîne de valeur mobile est en pleine évolution: elle diminue de plus en plus avec différentes spécialisations (par ex. M2M enabler)." ("The mobile value chain is undergoing dramatic change: it is reducing more and more with different specialisations (e.g. M2M enablers).") Consultation, 4.1.a. at p. 14

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

Finally, AT&T agrees with BIPT's conclusion that relaxation of the eligibility criteria will not lead to a shortage of MNCs. Some key European countries already have a more liberal MNC assignment policy. We are not aware of any issues of exhaustion of MNCs arising as a result. In fact, even countries such as Sweden and the Netherlands,[6] which have gone much further in liberalising International Mobile Subscriber Identity (IMSI) assignment policies, do not appear to have been overwhelmed by demand. In considering the future demand for MNCs, BIPT should take into account that allowing service providers to utilise foreign IMSIs in an extra-territorial matter within Belgium could reduce the demand for Belgian MNCs. Specifically, if extra-territorial use is not allowed, then multiple operators may apply for Belgian MNCs that otherwise would have no technical need to do so.

II.   Extra-territorial Use of Numbering Resources (Section 4.3 of Consultation)

Extra-territorial Use of Numbers for M2M

AT&T believes that in order to facilitate the growth and development of M2M services, and also to dampen unnecessary demand for MNC resources, national numbering plans should explicitly allow the extra-territorial use of numbering resources. AT&T therefore welcomes BIPT's proposal[7] to create a clearer framework for the permanent extra-territorial use of both E.212 and E.164 numbers for M2M-type applications, and to expressly allow such usage in both directions; i.e., permanent use of Belgian numbering resources outside of Belgium, as well as permanent use of foreign numbering resources within Belgium. As BIPT notes, this clarification would include the elimination of the current blanket prohibition, other than in roaming or nomadic situations, on use of foreign numbers in Belgium contained in Article 8 of the Belgian Numbering Decree. AT&T commends BIPT for its recognition that business models for M2M are substantially different from those of more traditional mobile communications and that significant benefits arise from the use of a single numbering solution: "Operators can optimise billing and operational systems if they can serve different countries with a single series of numbers. This is especially important for specialised services, like M2M."[8]

AT&T wishes to highlight the following features of M2M services which support BIPT's proposed course of action:

- M2M business models typically have significantly lower Average Revenue Per Unit (ARPU) and higher input cost sensitivities than more traditional models. Given these realities, M2M device manufacturers would face an almost insurmountable obstacle when seeking to deploy M2M products and services on a global scale if they followed traditional handset or tablet business models. To obtain wireless connectivity under traditional business models, a manufacturer

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[6] According to ECC Report 212 at A.1.16, 30 MNCs have been assigned in the Netherlands, less than a third of the available 2-digit MNC resources, with three-quarters of this total having been allocated to private radio networks.
[7] Consultation at 4.3.c.
[8] "Les opérateurs peuvent optimaliser leur facturation et leurs systèmes opérationnels s'ils ne doivent supporter qu'une seule série de numéros pour différents pays. C'est surtout important pour certains services spécialisés comme les services M2M." Consultation, 4.3.b.ii. at p. 28

would need to contract with at least one MNO in each country into which it sells its goods, which could mean incurring transaction costs for negotiating and then implementing dozens or hundreds of individual agreements. Moreover, for each country, the manufacturer would need a SIM card with a country-specific IMSI code embedded in each M2M device to be distributed in that particular country. This would mean maintaining country-specific inventory at each place of manufacture, leading to greatly increased inventory management costs. In cases where the M2M devices use E.164 numbers, the manufacturer would also need country-specific E.164 numbers in each country where it seeks to distribute its products, further increasing its costs and increasing pressure on limited numbering resources.

- M2M business models require delivery of services on a globally consistent manner, including being able to operationalise centralised manufacturing and plant resources, and establishing common management systems for consistent policy controls (*e.g.*, ordering, provisioning, customer care, cyber security, billing and reporting). A fragmented distribution model, involving a separate SIM/IMSI per country and integration with each national MNO "platform," would require the manufacturer to use multiple platforms that would not be integrated and therefore would not work together. Requiring numbers for each country where a product is used would prohibitively raise costs and stifle M2M innovation and deployment in most markets (*e.g.*, automotive companies may not know the final destination of each vehicle at the time of manufacture, nor would a typical manufacturer of connected watches, soil moisture detectors). Even across the 28 EU markets, if a nationally fragmented approach for SIM/IMSI use were to occur, there is a high risk that many markets could miss out on new innovations. This is also true for Belgian device manufacturers intending to export around the world but finding their distribution model constrained by a precedent that requires a separate IMSI platform for each export market.

- The new business models for M2M services necessitate innovative numbering solutions to accommodate the requirements of M2M customers and their product manufacturers. While a number of possible solutions to address the potential concerns relative to the needs of these stakeholders exist,[9] AT&T believes that the most effective solution for global M2M services is to explicitly allow the extra-territorial use of E.212 and E.164 numbering resources. Such extra-territorial use of numbering resources for M2M services should not be confined to traditional roaming scenarios and should work in both directions—that is, national regulators should allow

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[9] International Telecommunications Union (ITU) allocated numbering resources (from the E.212 901 and/or E.164 +882/+883 ranges) are sometimes referenced as potential numbering solutions for M2M services that are to be deployed in multiple countries. However, a global, single SIM approach using roaming can be more efficiently implemented with the extra-territorial use of national numbering resources. While ITU allocated numbering resources may be a potential long-term solution, a global SIM approach based on national numbers is preferable, because implementation of ITU resources code could involve considerable cost and time, up to 2 years, to get the necessary support structures and agreements in place.

use of their numbers outside their national territories, as well as allowing the use of foreign numbering within their national territories.

- There are existing, well-defined and 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, 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.[10] This bilateral framework has enabled large and small manufacturers alike to develop and export devices around the world, and to scale their business without the upfront entry barrier of establishing a distinct platform for each country before selling a single device. Thus, global numbering use promotes robust competition and ensures vibrant telecommunications markets because MNOs will continue to compete with each other to provide an international roaming platform for M2M service providers. Meanwhile, visited network MNOs benefit from the roaming traffic on their network.

Extra-territorial Use of Numbers for Purposes Other than M2M

AT&T notes that for permanent extra-territorial use of E.164 numbers for purposes other than M2M, BIPT proposes to consider requests on a case-by-case basis, and to decide whether to authorise such extra-territorial use of numbers on the basis of a comparative assessment of the advantages and disadvantages. AT&T understands that, if BIPT's proposed changes to the Belgian Numbering Decree are implemented, notably the amendment of Article 8, future decisions on such extra-territorial use of numbers would be at BIPT's discretion rather than requiring approval of the Minister. This alone would represent a significant and welcome simplification of the current process.

If BIPT decides that permanent extra-territorial use of E.164 numbers for purposes other than M2M must be subject to prior approval on a case-by-case basis, AT&T would encourage BIPT to issue guidelines and streamlined procedures to enable market players to obtain prompt consideration of their market plans. In addition, BIPT should publish anonymized generic descriptions of the types of

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[10] 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 confidential to GSMA members but were recently shared with the BEREC M2M Project Team in response to a specific request from that Team.

applications that have been approved for permanent extra-territorial use of numbers to further accelerate the process. Finally, AT&T urges that the same approach and principles should apply equally to the consideration of permanent extra-territorial use of E.212 numbers for applications other than M2M.

BIPT's Proposed Principle for Addressing Policy Issues Arising from Extra-territorial Use of Numbers

BIPT's Consultation provides a helpful analysis[11] of the implications of extra-territorial use of numbers in a variety of contexts, including interconnection, number portability, data retention, and law enforcement assistance. BIPT's analysis does not appear to identify any insurmountable obstacles to such extra-territorial use and identifies several benefits. AT&T agrees with this finding and, in particular, supports BIPT's proposed general principle[12] for addressing policy issues arising from extra-territorial use of numbers, namely that the regulatory authority of the country where consumption takes place should be responsible for regulating that consumption, except as regards numbering, where the authority whose numbering plan is being used remains competent. This would mean, as BIPT suggests, that the authorities in the country where the user consumes a service are competent to address any consumer complaints, unless they relate directly to numbering. AT&T believes that distinguishing between regulation of numbering and regulation of other consumer protection matters in this manner is a commendable pragmatic policy approach. AT&T encourages BIPT to enlist the support of BEREC and the European Commission in having this principle adopted at European level. In AT&T's view, as a general principle, numbering policy should not be used to achieve policy goals in other areas, especially when other mechanisms are available to address any concerns.

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AT&T commends BIPT for proposing the liberalisation of Belgium's national numbering plan to support the trajectory and promise of mobile communications, in particular M2M services. Such forward-thinking, market-driven solutions maintain Belgium's leadership in the field of telecommunications, as reflected in areas such as the country's rate of IPv6 adoption[13] and number of broadband subscribers on

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[11] Consultation at 4.3.b.ii.

[12] Id. at p. 25, "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 compétent, comme indiqué ci-dessus." ("The following general rule could therefore be established: 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.")

[13] According to Akamai, as of 8 March 2015, Belgium had the world's highest IPv6 adoption rate at 35 percent, more than double that of second-place Germany. *See* http://www.stateoftheinternet.com/trends-visualizations-ipv6-adoption-ipv4-exhaustion-global-heat-map-network-country-growth-data.html#countries (last accessed 30 March 2015).

next-generation access networks.[14] AT&T looks forward to the publication of draft legislation later this year. AT&T would be pleased to answer any questions concerning these comments.

       Respectfully submitted,

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[14] According to February 2015 report from the European Commission, next-generation access networks were used by 77 percent of Belgian broadband subscribers in July 2014, compared to 27 percent of broadband subscribers across the EU. *See* http://telecomist.com/2015/02/belgium-leads-nga-broadband-take-up-in-eu/