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| ITU Logo | INTERNATIONAL TELECOMMUNICATION UNION**TELECOMMUNICATIONSTANDARDIZATION SECTOR**STUDY PERIOD 2017-2020 | SG3-C196 |
| **STUDY GROUP 3** |
| **Original: English** |
| **Question(s):** | 7/3 | Geneva, 9 - 18 April 2018 |
| **CONTRIBUTION** |
| **Source:** | United States of America |
| **Title:** | Views on proposed work under D.M2MRoaming |
| **Purpose:** | Discussion |
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| **Keywords:** | D.M2MRoaming; D.IoTRoaming; D.IoTpolicy |
| **Abstract:** | The United States does not support a new draft Recommendation on M2M roaming. Not only is such a draft Recommendation unwarranted, for a number of reasons, but it is particularly premature for ITU-T Study Group 3 to suggest any course of action before a planned Rapporteur Group e-meeting for Q7/3 has taken place. |

**Introduction**

Under the work item *D.M2MRoaming*, some Member States have proposed (*e.g.*, C147, C148, and C165) that ITU-T Study Group 3 develop global accounting and charging principles and other regulatory guidelines for M2M. In particular, C147 and C165 propose a new draft ITU-T Recommendation, “Guidelines on Permanent Roaming for M2M Devices.” The matter of M2M, including roaming, is a matter of commercial negotiations between providers. As such, a new draft Recommendation is unnecessary and should not go forward. The April 2017 Report of Working Party 4/3 (Section 3.2.1) notes plans to consolidate nine previous contributions on international mobile roaming into a single document, to be used as input for a Rapporteur Group e-meeting for Q7/3; however, these steps never took place. The United States suggests that Working Party 4/3 continue discussions on this matter, before suggesting any course of action.

Moreover, the United States disagrees with the presupposition in C147 and C165 that “developing uniform M2M guidelines, including for charging, accounting and settlement mechanisms is timely and vital.” In fact, even for traditional telecommunications services, operators have largely abandoned charging and accounting rate principles and instead rely on market-based commercial arrangements.[[1]](#footnote-1) Likewise, M2M providers use innovative commercial models predicated on mutually beneficial bilateral agreements to expand connectivity without the need for accounting regulations.

With the expectation that commercial models will continue to evolve commensurate with the exponential growth of the M2M ecosystem, the market is best placed to develop new practices, as opposed to governments imposing traditional accounting and charging principles. It is premature for ITU-T Study Group 3 to suggest any course of action on the issue of M2M charging frameworks, particularly when there has not been any identification of specific market challenges related to M2M roaming, and where business models are still changing and evolving rapidly. In short, the United States believes the application of accounting and charging principles, and other regulatory actions proposed in the work item *D.M2MRoaming* is unwarranted, likely to stifle rather than promote the growth of M2M.[[2]](#footnote-2)

Additionally, in an effort to avoid duplication of efforts between Sectors, the United States notes the considerable work under ITU-D Study Group 2, Question 1/2 (Creating the smart society: Social and economic development through ICT applications) during the 2015-2017 study cycle. The final report of Question 1/2 contains a range of best practices to support Smart City and IoT growth more broadly, none of which identified the need for the development of global charging and accounting frameworks or other prescriptive regulations. The 2017 ITU World Telecommunication Development Conference (WTDC-17) approved the continuation of Question 1/2, providing a continued path for interested parties to participate in this important dialogue. Any domestic “guidelines” for M2M are more appropriately considered in ITU-D, not as an ITU-T Recommendation.

**The M2M Ecosystem**

The global nature of the M2M ecosystem, coupled with increasing consumer mobility, its exponential growth trajectory and the general technological transformation in networking, all depend on worldwide delivery. As a result, the new business models that facilitate the innovative and seamless deployment of M2M warrant a light-touch regulatory approach. These new business models vary from more traditional business models both in terms of the nature of the wireless connectivity provided to the end user and the economics of providing that connectivity (*e.g.*, short duration communication, limited or no voice capability). For M2M devices, mobile network operators (MNOs) do not provide a communications service directly to individual end users.  Rather, MNOs provide wireless connectivity to manufacturers (normally not communications providers), who distribute wirelessly-enabled products to end users.

As a result, M2M wireless connectivity is only an ancillary component of the actual end product. M2M providers typically do not charge the end user separately for the connectivity because data transport is not the principal feature of the overall product (*e.g.*, kitchen equipment, fleet management) delivered to the end user. Indeed, end users may be unaware of the M2M capability.

To elaborate, M2M does not provide open-ended two-way communications. Specifically, M2M providers generally do not allow for data, SMS or voice communications between humans with the ability to communicate with all or substantially all endpoints on a network like the PSTN (public switched telephone network) or the Internet. For instance, an M2M-enabled smart meter fundamentally measures electricity usage; the M2M enhancement allows the near real-time delivery of that usage information to the electric utility company.  Each lowers the cost of doing business, and the rates charged to consumers. Therefore, supportive M2M policies should recognize that new M2M business models differ greatly from the traditional business models that supported the legacy telecommunications systems of the past, such as those on which accounting and charging principles were based. The absence of such open-ended communications capability is one key differentiator between M2M and traditional, regulated telecommunications services. Moreover, as noted above, most operators long ago ceased using charging and accounting rate principles even for traditional two-way communications services and instead rely on market-based commercial arrangements.

Further, in the M2M environment, economies of scale are in the best interest of the consumer:

* Compared to mobile phones and tablets, M2M devices typically have low data consumption and very low average revenue per user (ARPU) (*e.g.*, a smart meter sending a few hundred bytes of data per day vs. a smartphone or tablet consuming multiple megabytes or gigabytes).
* Because their products and solutions usually have very low ARPU, manufacturers are extremely sensitive to development and deployment input costs, including costs imposed by regulation.
* To efficiently amortize their costs, M2M providers tend to develop standardized products with long useful lives that can be sold in significant volumes at lower prices across many countries.

As noted above, the business models for M2M have unique challenges, which are already effectively being addressed by M2M providers, device manufacturers, and the wireless industry through various commercial solutions, such as the use of so-called permanent roaming. This is but one example of how industry-driven commercial solutions are promoting the innovation in and deployment of M2M devices throughout the globe, *affordably* expanding connectivity and adoption.

**Over-the-Air (OTA) Provisioning**

Over-the-air (OTA) provisioning is already successfully being used in certain sectors (*e.g.*, automotive). In the U.S. view, to the extent available, OTA should be offered but not prescribed. Industry has made significant progress in developing and promoting OTA capability since the first release of the GSMA embedded SIM specification. The later versions of the specification, now at version 3.2,[[3]](#footnote-3) allow for changes to profiles of different MNOs over the life span of the product, preventing lock-in to the original MNO and offering increased options to end users and providers without the need for regulatory intervention. It also should be noted that incorporating an OTA capability inevitably adds costs to an M2M solution. While this may be justified for higher value products such as cars that will be in use for many years, it may be uneconomic for a lower value, more disposable M2M device that might only be used for a short time. The United States, therefore, cautions against any possible adoption of a “one-size-fits-all” regulatory policy approach towards OTA switching, which would reduce operating flexibility, inhibit innovation, and increase costs in new offerings and business models.

**Registration of M2M Providers**

In the U.S. view, the imposition of new registration regulation and compliance requirements on M2M providers is not warranted. If adopted, such measures would stifle the emerging M2M market by increasing operational costs or foreclosing market entry, thereby harming consumers by limiting innovation and competitive offerings. In many cases, the M2M provider is an MNO or a Mobile Virtual Network Operator (MVNO) or receives its underlying connectivity from an MNO or MVNO. Thus, the provision of connectivity (*i.e.*, the telecommunications service) is already regulated through the licensing of the MNO or MVNO; notably, quality of service, law enforcement requirements, and other regulatory measures are also already addressed through the MNO network license.

**Conclusion**

The United States does not support a draft new Recommendation on M2M roaming. The M2M ecosystem is already operating without unnecessary regulatory intervention, and M2M, already an integral part of today’s global traffic flows, are providing significant benefits to consumers and industry throughout the world. With the accelerating growth of M2M under existing and rapidly evolving commercial business models, any new draft Recommendation on this subject would be unproductive. Imposition of a top-down, legacy-era regulatory framework would adversely affect global deployment and would do nothing to bring the expected benefits to consumers. On the contrary, it would greatly damage the potentially significant benefits M2M could provide.

The United States requests that this contribution be made available publicly without restriction.

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1. According to the Federal Communications Commission (FCC), in 2012 (the latest year for which data is available), only 0.5% of international telecommunications traffic between the United States and foreign points was settled under traditional accounting rate arrangements, compared to 86% of such traffic in 1998 – this is despite the fact that during the same time period, total billed minutes for international calls in the United States increased from 24.2 billion to 77.9 billion, a compound annual growth rate of 9.4%.

 [↑](#footnote-ref-1)
2. The United States also has similar concerns with the related – and potentially duplicative – work items *D.IoTRoaming* and *D.IoTpolicy*. Moving forward, the United States encourages SG3 to carefully consider and explain when and how it uses the terms “M2M” vs. “IoT.” [↑](#footnote-ref-2)
3. GSMA’s Remote Provisioning Architecture for Embedded UICC Technical Specification, V 3.2 (June 2017). *See*

<https://www.gsma.com/newsroom/wp-content/uploads//SGP.02_v3.2_updated.pdf>. [↑](#footnote-ref-3)