THE UNITED REPUBLIC OF TANZANIA

TANZANIA COMMUNICATIONS REGULATORY AUTHORITY

ISO 9001:2015 CERTIFIED

GUIDELINES ON THE MANAGEMENT OF APPLICATIONS OF MACHINE TO MACHINE COMMUNICATION AND INTERNET OF THINGS NUMBERING RESOURCES

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1.0 INTRODUCTION

Machine to Machine (M2M) communications refers to communication between entities which can be object, devices or things that exchange information and carry out actions with minimal or no human intervention using existing or evolving communication networks. They are technologies that allow both wireless and wired systems to communicate with other devices of similar ability. In M2M, sensors attached to a machine relay information of the events that the machine experiences to an application that analyses this data and takes decisions in real time or near to real time.

M2M is a key component of Internet of Things (IoT), which has potential applications in sectors such as transport, health, education, smart cities & smart communities, among others for automatic meter reading, fleet management, car tracking, vending, monitoring and control, security and alarms, telemedicine and other applications of similar nature.

The IoT is the network of physical devices embedded with electronics, software, sensors, actuators, and connectivity which enable them to connect and exchange data, resulting in efficiency improvements, economic benefits, and reduced human exertions

Tanzania Communications Regulatory Authority (TCRA) introduced the Converged Licensing Framework (CLF) designed to encompass technology and service neutrality and crafted to match with the dynamism of the communications sector.

In view of that all licensees with appropriate license from TCRA can provide M2M connectivity within the area of their existing authorizations in accordance with respective licensing conditions. In M2M communication the Subscriber Identity Module (SIM) can be used and can be physical or an electronic card (e-SIM).

2.0 OBJECTIVE OF THE GUIDELINES

The objective of these guidelines is to provide the procedures and requirements for providing the M2M communication services where the connectivity is through mobile communication network, and where Subscriber Identity Module (SIM) and numbering resources are required. The parties to M2M communications are the M2M Service Providers (M2M SP), Network Operators and the end users. As the M2M applications are typically assigned to M2M SP by Network Operators, it is the M2M SP that is actually assignee of the numbers by the Network Operators. The end users may not aware of the

number but aware of the services produced by M2M SP and thus the M2M SP is the custodian of the numbering resource used.

3.0 ALLOCATION OF NUMBERING RESOURCES FOR M2M COMMUNICATION

Where the internet of things and M2M devices require the use of Mobile Station International Subscriber Directory Number (MSISDN), they shall be assigned number according to Electronic and Postal Communication (Numbering and Addressing) Regulations, 2018 or its amendments

a) Numbers to be assigned shall be on a 15-digit numbering range (+255 300 ZZX XXX XXX). The 15-digit range will provide enough numbers to ensure availability to meet future needs of this technology and since there will be no need to call the device, user-friendliness and recognisability of the number is not a priority.
b) The 15-digit number is in accordance with The International Public Telecommunication Numbering Plan (ITU-T E.164 Recommendation) and shall have provisions for all subscriber facilities including but not limited to number portability, Caller Line Identification (CLI) and access to emergency services especially when there will be human interaction.
c) The numbers shall be assigned in a block of ten million numbers to eligible applicant.

4.0 ELIGIBILITY AND NUMBERING RESOURCES ASSIGNMENT

a) Registered company or institution in Tanzania shall be eligible to be assigned these numbers when providing the services. They shall be required to have Application Services License as guided by the Electronic and Postal Communication (Licensing) Regulations, 2018 or its amendments.
b) M2M SP may obtain electronic numbers for M2M applications from the mobile operators of connectivity provider or opt to acquire an Application Service Licence to be eligible for assignment.
c) Relationship between the M2M SP and mobile operator shall be of bulk SIM connections nature.
d) In order to avoid lock-in for all use case scenarios (*assignees and customers to mobile operator or connectivity provider*), mobile number portability shall be allowed for these services.

5.0 SIM USAGE REQUIREMENTS

a) The SIM provisioning and usage shall be subjected to Electronic and Postal Communications (SIM Card Registration) Regulations, 2018.
b) Devices with embedded SIM (e-SIM) shall be allowed upon approval from the Authority.
c) The ownership of these M2M communications SIMs shall be with the M2M SP. Details of all customers of respective M2M services or devices i.e. location of devices with SIM, detail of the devices e.g. IMEI, ESN, corresponding physical custodian name and address and other relevant information such as IP address shall be maintained by the assignee. This requirement shall be followed when relocating, selling and transferring the device with the SIM. The assignee shall make the database available to the Authority for verification and the mobile operator providing the connectivity to the assignee.

6.0 APPLICATION OF THE GUIDELINES

a) These guidelines shall apply to M2M/IoT services where corresponding devices use numbering resources as identifiers to connect to mobile networks.
b) M2M/IoT services considered include but not limited to Automotive & transport such as car tracking, utilities such smart metering and grids, healthcare (e-health, m-health, telemedicine and assisted living), smart agriculture, smart buildings (structural health, access control and security, lighting, water, lifts, fire and smoke alarms, power and cooling systems), smart manufacturing, Security & surveillance, Environmental monitoring homes, and all other services of same nature.
c) Services mentioned in 6(b) above that have already been deployed in Tanzania before issuance of these guidelines and utilizing same MSISDN used for current mobile communication (+255 7Y XXX XXXX or +255 6Y XXX XXXX) should be migrated to this numbering plan in eight (8) months after the date of issuing these guidelines.

7.0 NUMBERING FEES

Assignees of M2M/ IoT services numbers shall pay relevant numbering fees as determined by the Authority and reviewed from time to time.