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TELECOM REGULATORY AUTHORITY OF INDIA

NOTIFICATION

New Delhi, the 17th April, 2012

No. 305-27/2011-QoS - In exercise of the powers conferred by section 36 read with sub-clauses (i) and (v) of clause (b) of sub-section (1) of section 11 of the Telecom Regulatory Authority of India Act, 1997 (24 of 1997), the Telecom Regulatory Authority of India hereby makes the following regulations, namely:-

**THE MOBILE BANKING (QUALITY OF SERVICE) REGULATIONS, 2012
(8 OF 2012)**

CHAPTER I

PRELIMINARY

1. **Short title and commencement.** – (1) These regulations may be called the Mobile Banking (Quality of Service) Regulations, 2012.

(2) They shall come into force from the date of their publication in the Official Gazette.

2. **Definitions.**– In these regulations, unless the context otherwise requires,-

(a) "Access Providers" includes the Basic Telephone Service Provider, Cellular Mobile Telephone Service Provider and Unified Access Service Provider;

(b) "Act" means the Telecom Regulatory Authority of India Act, 1997 (24 of 1997);

(c) "Authority" means the Telecom Regulatory Authority of India established under sub section (1) of section 3 of the Act;

(d) "banking services" means the services provided by the bank to its customer;

(e) "Cellular Mobile Telephone Service",--

(i) means telecommunication service provided by means of a telecommunication system for the conveyance of messages through the agency of wireless telegraphy where every message that is conveyed thereby has been, or is to be, conveyed by means of a telecommunication system which is designed or adapted to be capable of being used while in motion;

(ii) refers to transmission of voice or non-voice messages over Licensee's Network in real time only but service does not cover broadcasting of any messages, voice or non-voice, however, Cell Broadcast is permitted only to the subscribers of the service;

<p>(iii) in respect of which the subscriber (all types, pre-paid as well as post-paid) has to be registered and authenticated at the network point of registration and approved numbering plan shall be applicable;</p> <p>(iv) includes both Global System for Mobile Communications (GSM) and Code Division Multiple Access (CDMA) Technology;</p>
<p>(f) "Cellular Mobile Telephone Service Provider" means a licensee authorized to provide Cellular Mobile Telephone Service under a licence granted under section 4 of the Indian Telegraph Act, 1885 (13 of 1885), in a specified service area;</p>
<p>(g) "customer" means a customer of a service provider to whom these regulations apply and includes its consumer and subscriber;</p>
<p>(h) "IVR" or "Interactive Voice Response" means a technology that allows a computer to interact with a person through the use of voice and Dual Tone Multi Frequency keypad inputs;</p>
<p>(i) "mobile banking" or "m-banking" means delivery of banking services through mobile phones;</p>
<p>(j) "message" shall have the meaning assigned to it in clause (3) of section 3 of the Indian Telegraph Act, 1885 (13 of 1885);</p>
<p>(k) "regulations" means the Mobile Banking (Quality of Service) Regulations, 2012;</p>
<p>(l) "SMS" means a message which is sent through short message service and includes a Multimedia Message which is sent through Multimedia Message Service (MMS);</p>
<p>(m) "STK" or "SIM Application Tool Kit" means a standard of GSM system which enables SIM to initiate actions which can be used for various value-added services;</p>
<p>(n) "subscriber" means a person or legal entity who subscribes to telecom service provided by an Access Provider;</p>
<p>(o) "Unified Access Services", --</p> <p>(i) means telecommunication service provided by means of a telecommunication system for the conveyance of messages through the agency of wired or wireless telegraphy;</p> <p>(ii) refers to transmission of voice or non-voice messages over licensee's network in real time only but service does not cover broadcasting of any messages, voice or non-voice, however, Cell Broadcast is permitted only to the subscribers of the service;</p> <p>(iii) in respect of which the subscriber (all types, pre-paid as well as post-paid) has to be registered and authenticated at the network point of registration and approved numbering plan shall be applicable;</p>
<p>(p) "Unified Access Service Provider" means a licensee authorised to provide Unified Access Services under a licence granted under section 4 of the Indian Telegraph Act, 1885(13 of 1885), in a specified service area;</p>
<p>(q) "USSD" or "Unstructured Supplementary Service Data" means a real-time</p>

or instant session-based messaging service;
(r) "WAP" or "Wireless Application Protocol" means an open protocol for wireless multimedia messaging;
(s) all other words and expressions used in these regulations but not defined, and defined in the Indian Telegraph Act, 1885 (13 of 1885) and the Telecom Regulatory Authority of India Act 1997 (24 of 1997) and the rules and other regulations made thereunder, shall have the meanings respectively assigned to them in those Acts or the rules or such other regulations, as the case may be.
CHAPTER II MODE OF DELIVERY OF MOBILE BANKING MESSAGES AND ITS QUALITY OF SERVICE STANDARDS
3. Mode and Time frame for delivery of message for mobile banking. —
(1) Every Access Provider, acting as bearer, shall facilitate the banks to use SMS, USSD and IVR to provide banking services to its customers and deliver the message generated by the bank or the customer within the time frame specified in sub-regulation (5).
(2) Every Access provider shall ensure that in case SMS is used for mobile banking transaction, a report confirming the delivery of the message is sent to the customer or the bank, as the case may be: <i>Provided</i> that every service provider shall, establish, if network permits, through mutual agreement with the bank, a system to ensure that if SMS sent by the bank is not delivered to the customer, the system shall trigger USSD communication to the customer confirming the completion of the transaction.
(3) An Access Provider may allow the bank to use WAP or STK to provide banking services to its customers and shall comply with the time frame for delivery of the messages generated by the customer or the bank specified in sub-regulation (5): <i>Provided</i> that the Authority may, from time to time, specify any other means of communication and its quality of service parameter for delivery of message.
(4) Every Access provider shall ensure that for availing the banking services such as cash deposit, cash withdrawal, money transfer and balance enquiry, the customer is able to complete the transaction in not more than two stage transmission of message in the case of SMS or not more than two stage entry of options in the case of USSD and IVR.

(5) Every Access Provider shall meet the following time frame for delivery of the messages generated by the customer or the bank relating to banking services provided to the customers, namely:-

Sl.No.	Means of communication	Time Frame
1.	SMS	Response time <= 10 seconds
2.	USSD	Response time <= 2 seconds
3.	IVR	Response time <= 10 seconds
4.	WAP	Response time <= 10 seconds
5.	STK	Response time <= 10 seconds

Provided that the expiry time for SMS shall be seventy two hours;

Provided further that in the case of an USSD communication triggered by the system referred to in sub-regulation (2), the time frame shall start from the time USSD is triggered by the system.

(6) Every Access Provider shall ensure that if SMS is used for mobile transaction the SMS, sent by the bank, shall be sent as transactional messages through separate telecom resources, as provided in the Telecom Commercial Communications Customer Preference Regulations, 2010 (6 of 2010) dated 1st December, 2010.

(7) The measurement methodology in respect of the means of communication provided in sub-regulation (5) is specified in the Schedule-I.

(8) Every Access Provider shall ensure that the equipments installed in its network are capable of delivering messages within the time frame fixed under sub-regulation (5).

4. Quality of service parameters for m-banking communication. – (1) The Network Service Quality Parameters for Cellular Mobile Telephone Services as specified in the Standards of Quality of Service of Basic Telephone Service (Wireline) and Cellular Mobile Telephone Service Regulations, 2009 (7 of 2009) shall apply to all m-banking messages.

(2) Every Access Provider shall meet the following customer centric quality of service parameters, namely:-

Sl.No.	Name of Parameter	Benchmark
1.	Time taken to deliver error and success confirmation message	99.5 % within 2 minutes.
2.	Transaction update on the system	100 %
3.	Success of delivery of financial transaction messages	99.5 %

(3) Every Access Provider shall measure its quality of service in respect of each parameter against their benchmark in accordance with the measurement methodology specified in the Schedule-II.

5. Security requirements for m-banking communication. – (1) Every Access Provider shall protect privacy and security of m-banking communication and ensure the confidentiality of end-to-end encryption, integrity, authentication and non-repudiation of such communication.

(2) The end-to-end encryption, integrity, authentication and non-repudiation of m-banking communication in the network of the Access Provider shall be in accordance with the standards certified by International Telecommunication Union (ITU) or European Telecommunications Standards Institute (ETSI) or Telecommunication Engineering Centre (TEC) or International standardization bodies such as Third Generation Partnership Project (3GPP) or Third Generation Partnership Project 2 (3GPP2) or Internet Engineering Task Force (IETF) or American National Standards Institute (ANSI) or Telecommunications Industry Association (TIA) or Interim Standard (IS) or any other international standard as may be approved by the Central Government.

CHAPTER III MISCELLANEOUS

6. Reporting. –Every Access provider shall submit to the Authority its compliance reports of benchmarks in respect of each Quality of Service parameter specified under sub regulation (5) of regulation 3 and sub regulation (2) of regulation 4 in such manner and such format, at such intervals and within such time limit, as may be specified by the Authority by an order or direction.

7. Obligation of the Access Providers. – (1) Every Access Provider shall maintain record of mobile banking messages for six months for audit purposes.

(2) In case the message generated by the customer or the bank, in the process of m-banking transaction is not delivered due to any reason, the Access Provider shall immediately send an error message intimating the non-completion of the process to the customer or the bank, as the case may be.

(3) Every Access Provider shall maintain records of every m-banking communication in compliance of time frame for delivery of the messages specified in regulation 3 and benchmark of each of the quality of service parameters specified in regulation 4, in such manner and in such format, as may be specified by direction, by the Authority, from time to time.

(4) The Authority may, if it considers expedient so to do, and to ensure compliance of the provisions of these regulations, at any time, direct any of its officers or employee or any agency appointed by the Authority in this behalf, to inspect the records maintained under sub-regulations (1), (2) and (3).

(5) Every Access Provider shall maintain complete and accurate record of the consumers, using banking service through mobile phones.

8. Interpretation. — In case of any doubt regarding interpretation of any of the provisions of these regulations, the clarifications issued by the Authority in this regard, shall be final and binding.

(Rajeev Agrawal)
Secretary

Note---- The Explanatory Memorandum explains the objects and reasons of the Mobile Banking (Quality of Service) Regulations, 2012.

SCHEDULE-I
(See regulation 3)

Measurement methodology for the time frame for delivery of messages generated by the customer or the bank relating to banking services

(1) SMS:

Measurement:

- a. End to end delivery time =[Time of SMS for response received –Time of SMS send or triggered]
- b. SMS for the basic financial services is to be stored for seventy two hours in case the customer mobile instrument is in “switch off” or “out of coverage area” or in such condition that customer’s mobile instrument is not able to receive the SMS.

(2) USSD:

Measurement:

Response time = Time at which USSD message received – Time at which USSD message triggered

(3) IVR:

Measurement:

Response Time = Time at which response received – Time at which button pressed during IVR

(4) WAP:

Measurement:

Response time = Time at which response received on WAP – Time at which message or communication triggered on WAP

(5) STK:

Measurement:

Response time = Time at which response received on STK – Time at which message or communication triggered on STK

SCHEDULE-II
(See regulation 5)

Measurement methodology for Quality of service parameters for m-banking communication

(1) Time taken to deliver error and success conformation message:

(i) This parameter signifies the efficiency in the delivery of error and success conformation messages.

(ii) The formula for measuring performance with regard to this parameter shall be –

<p>Time taken to deliver error and success conformation message = $100 * \frac{\text{Total number of error and success conformation message delivered within 2 minutes in a month}}{\text{Total number of error and success conformation message generated in a month}}$</p>

(2) Transaction update on the system:

(i) Any message triggered by a consumer for m-banking services shall be updated in the system for any transaction on a real time basis.

(ii) The formula for measuring performance with regard to this parameter shall be –

<p>Transaction update on the system = $100 * \frac{\text{Total number of message triggered by consumers updated in the system for any real time transaction in a month}}{\text{Total number of message triggered by consumers for mobile banking services in a month}}$</p>
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(3) Success of delivery of financial transaction messages:

(i) This parameter signifies the efficiency in the delivery of financial transaction message.

(ii) The formula for measuring performance with regard to this parameter shall be –

<p>Success of delivery of financial transaction messages = $100 * \frac{\text{Total number of financial transaction message delivered in a month}}{\text{Total number of financial transaction message generated in a month}}$</p>

Explanatory Memorandum

1. Penetration of banking services in rural areas has been a major area of concern to the Government. The Government has been considering leveraging the growth of mobile service in rural areas to provide basic financial services to unbanked citizens of the country by riding on mobile infrastructure. An Inter Ministerial Group (IMG) was constituted on 19.11.2009 by the Cabinet Secretariat to workout relevant norms and modalities for introduction of a mobile based delivery model for delivery of basic financial services and to enable finalization of a framework to allow financial transactions using mobile phones. The report and recommendations of the IMG were examined by a Committee of Secretaries and accepted by the Government. The proposed system envisages sharing of the following elements:

- A simplified common template for the KYC requirements for the Mobile linked No-Frills Accounts which is acceptable to all service providers.
- Cash-in / cash-out operations at the front end involving deposits and withdrawals into Mobile linked No-Frills Accounts.
- An Account Mapper that provides linkages between Unique Identification Number, mobile number and the mobile linked no-frills account details. Real-Time Micro Transactions (REMIT) connects to the Account Mapper to obtain details pertaining to a specific customer after he has been authenticated.
- An interoperable central payments switch, called REMIT Switch, that will facilitate real time transaction routing across Banking Correspondents (BCs), Banks (or associated Financial Institutions and outsourcing partners of Banks), Unique Identification Authority of India, Account Mapper and mobile service providers. INFAST (Interoperable Infrastructure for Accounting Small Transactions) can be created as an additional infrastructure for

creating and managing mobile linked no-frills accounts.

- The IMG framework based on mobile phones and biometric-based authentication will form the core micro-payment platform for transfer of benefits under various government schemes, micro-payment services and financial inclusion for the target groups of social sector programmes.
2. The IMG has, inter-alia recommended that TRAI may also draw up guidelines to ensure high availability of associated communication services. Mobile banking consists of banking transactions and the use of mobile networks for communicating through mobile phones by the customer for such transactions. The entire transaction depends on the capability of the mobile network to deliver a fast, reliable and cost effective method of communication with inbuilt audit trails and desired levels of security for transmission. These aspects were addressed through a consultation process by TRAI by issuing a Consultation Paper on 28th October 2010 seeking the views of stakeholders by 15th December 2010 to identify QoS parameters to meet such requirements. An Open House Discussion was held at Mumbai on 23rd March, 2011 and based on the stakeholders comments and study of the system, the Quality of Service for various parameters forming part of the mobile communication has been prescribed in these regulations.
 3. **The modes for delivery of messages for mobile banking:** During consultation process, most of the stakeholders opined that SMS (Short Messaging Service), IVR (Interactive Voice Response), WAP (Wireless Access Protocol) platform can be used across both CDMA and GSM and methods like JAVA/ BREW applications and STK may also be preferred. It is seen that various modes of communication that can be used for mobile financial transactions offer different functionality and has its own merits. Some of the methods of communication may not be suitable for low-end handsets. The Authority felt that, considering

the ease of use and availability across all the mobile handsets, SMS, USSD and IVR need to be mandated. The Authority also felt that WAP and STK could be optionally allowed for such communications. Accordingly, provisions have been made in the regulations. The Authority may also prescribe, from time to time, any other methods of communications.

4. Being a financial transaction the consumer would like to receive confirmation of the outcome of the transaction at the earliest. In the case of SMS, there could be a possibility that the SMS is not delivered due to customer related issues or network related issues. To address this issue it has also been mandated that in such cases an USSD communication is also sent to the customer confirming the completion of transaction. Wherever the network permits, the service provider, through mutual agreement with the bank, should implement such a system where the confirmation message shall be sent with a request for delivery report confirmation to Access Provider's SMSC. Access Provider's SMSC will try to deliver such messages immediately within the time limit prescribed in these regulations and inform back the delivery status with proper error code towards application hosted at the backend. In case the SMS delivery fails, the error code received from the SMSC can be used by the system in the backend to trigger an USSD towards the customer. Considering the fact that USSD messages cannot be stored, it has also been provided in the regulations that the expiry time for SMS will be a minimum of seventy two hours.
5. **The time frame for delivery of messages for mobile banking:** Most of the stakeholders had suggested different time frames for different methods of communication. After considering various suggestions in this regard, the Authority decided the time frame for delivery of the messages for mobile banking transaction. Measurement methodology for the time frame for delivery of the messages generated by the customer or the bank relating to banking services provided to the

customers are prescribed in Schedule-I. These time frames are for the first delivery attempt.

6. **QOS parameters:** During consultation process most of the stakeholders agreed with the present quality of service parameter for the network which are already prescribed by the TRAI in accordance with Standards Of Quality Of Service Of Basic Service(Wireline) and Cellular Mobile Telephone Services, Regulation, 2009. The Authority considered the matter and felt that the quality of service standards already laid down by the Authority would be sufficient to address network related quality of service parameters. However, for protecting the interest of consumers the Authority has prescribed the following three Customer Centric parameters:

(a) Time taken to deliver error and success confirmation message:

This parameter signifies the efficiency in the delivery of error and success confirmation messages. As per this parameter the error messages and successful confirmation messages sent by the banking system based on customer action shall be delivered to the customer within 2 minutes. The regulations further provide that in case a message generated by the customer or the bank cannot be delivered due to any reason the access provider shall immediately send an error message intimating the non-completion of the process to the customer or the bank, as the case may be.

(b) Transaction update on the system:

Any message triggered through a consumer action for mobile banking services shall be updated in the system for any transaction on a real time basis.

(c) Success of delivery of financial transaction messages:

This parameter signifies the efficiency in the successful delivery of financial transaction message.

7. **Periodical reporting system:** The regulations provide for periodical reporting of performance of service providers against the quality of

service benchmarks prescribed in these regulations in such format and at such interval as may be prescribed by the Authority.

8. **Security requirements:** During consultation process, all the stakeholders opined that security is a critical issue. The most important security components are stated to be Authenticity and authorization, Integrity, Non-repudiation, and Confidentiality. The GSM/CDMA system architecture takes care of End to End Encryption, Authentication, Authorization, Integrity and Non-repudiation, which are governed by international standard bodies.

9. Accordingly, the Authority has prescribed in these regulations that the confidentiality of end to end encryption, integrity, authentication and non-repudiation of communication shall be in accordance with the standards certified by ITU/ETSI/TEC/ International standardization bodies such as 3GPP/3GPP2/IETF/ANSI/TIA/IS or any other international standard as may be approved by the Central Government.