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Section One: Background

1 Introduction

- 1.1 The Bank of Tanzania (BOT) maintains the responsibility of protecting and ensuring the development of sound and well-managed banking and financial institutions. As part of that responsibility, the BOT implicitly oversees the continued development and modernisation of an effective National Payment System (NPS).
- 1.2 An effective payment system consists of efficient and secure payment instruments, among other components. Such instruments should be designed, developed and deployed in such a way as to ensure that minimal, or no risks, are introduced to the national payment system, paying particular attention to the area of systemic risk.
- 1.3 Such payment instruments include electronic money (e-money) products. E-money can effect payments directly either in hardware or software form at Points of Sale (POS) and between two devices – particularly computerised devices or over open computer networks¹.
- 1.4 E-money products and schemes are considered emerging payment mechanisms aimed at utilising computer networks and electronics acting as a substitute for cash (physical notes and coins), cheques, credit cards and electronic funds transfer at POS. **This document focus on the developing hardware based products and services with particular emphasis on “Payment Cards”.**

¹ See definition of e-money in Appendix – II.

- 1.5 For the purpose of these guidelines, e-money does not include smart or magnetic stripe credit cards or debit cards, payment over the internet using credit or debit cards, home banking products, existing electronic funds transfers, single application cards such as telephone cards and others of that nature.
- 1.6 In consideration of the policy issues and risks associated with e-money products and services, the BOT recommends that all e-money products and payment schemes should be of an auditable nature as opposed to non-auditable².
- 1.7 These guidelines have therefore been developed specifically for auditable e-money schemes in Tanzania. These guidelines shall be revised from time to time, as required, by business needs, future technological developments and emerging new means of effecting payments.
- 1.8 It should also be noted that these Guidelines have been developed in line with the Tanzanian Vision and Strategic Framework document - Version 1.

2 Payment cards technology: Magnetic Stripe versus Integrated Chip

- 2.1 Payment cards have been in use for over thirty years in developed countries. Predominantly, such payment instruments have been developed using “magnetic stripe” technology to store and allow for the capture of essential cardholder information and security details. The magnetic stripe also serves to allow on-line authentication and authorisation of the cardholder when conducting a transaction at the POS.
- 2.2 As technology has advanced, particularly the advent of the “microprocessor chip”, payment cards have developed to a much greater extent by the inclusion of a microchip within the body of a plastic card. And there is a positive shift

² See the difference between auditable and non-auditable e-money schemes in Appendix -II.

developing towards the adoption of “chip cards”, more commonly known as smart cards.

- 2.3 There are a number of reasons for this shift, among them are, that the chip card has the capability of holding significantly greater amounts of information together with offering additional sophisticated security features. They may also contain “on board” information about the remaining authorised value associated with the card at any point in time.
- 2.4 Acceptance of the chip card has been mixed, as this technology is still considered relatively expensive, particularly capital expenditure to introduce a scheme based on chip technology. However the security measures that are available with chip cards are considered more advanced and the operational costs are far less than the traditional magnetic stripe card.
- 2.5 The potential for payment card transactions of all types is significant and the deployment of payment cards in Tanzania depends on clear guidelines for their introduction. Such developments should allow consumers to benefit from the ability to use payment methods that are inexpensive, rapid, secure, convenient, accessible and reliable together with an acceptable level of risk.

3 Types of payment card functionality

- 3.1 Payment cards fall into distinct categories and are either of Credit, Debit or Electronic purse (e-purse) functionality. A brief description is provided below:

(i) Credit Functionality

A credit card indicates that the holder has been granted a line of credit enabling the cardholder to make purchases and/or draw cash up to a prearranged amount. Interest is charged on the amount of the unpaid credit balance and cardholders are often charged an annual user fee.

(ii) Debit Functionality

Debit cards enable the holder to make purchases and to charge those purchases directly to a current account at the bank issuing the payment card.

(iii) Electronic Purse functionality

A stored value card containing an application that stores a record of funds available, which is updated as transactions are made.

- 3.2 As the market has developed there has been a trend for the use of “loyalty” cards that are aligned to the major issuer’s and commonly supported by a banking institution or commercial credit enterprises as a means of developing customer loyalty and providing additional consumer benefits to those card holders.
- 3.3 In the case of debit cards, these are typically issued by banks and provide the facility to withdraw cash and obtain account information at unattended cash points. In addition, some institutions also issue “cheque guarantee cards” which serve to guarantee the payment of a cheque up to a specified limit.
- 3.4 At this time, the major growth area internationally, for plastic card usage is in the debit card sector, as the debit card effectively serves as an electronic cheque with the transaction amount being automatically withdrawn from the users account.
- 3.5 As indicated previously, the dominant payment card types that are in use at this time in developed banking environments are those employing the use of “magnetic stripe” technology. Part of the reason for this is that the points of sale terminals are readily available at relatively low cost. The production costs of the stripe card are also low. Additionally, administrative support requirements are well developed.
- 3.6 However, smart cards are making significant inroads in some countries where, in addition to, regulated pilots being undertaken some significant schemes are already in place. Major international payment card issuers are also planning to

migrate to chip technology in order to replace traditional magnetic stripe debit and credit cards.

3.7 Therefore, an alternative to “magnetic stripe” technology is “chip technology” utilised by smart cards. The potential uses of chip technology are briefly illustrated below:

- (i) Payments – as a pay later (credit) card, as a pay now (debit) card, prepayment (electronic purse);
- (ii) Identity – as a national/ proprietary identity card, in health sector, driving license, loyalty programs etc; and
- (iii) Access – access control to secure buildings, systems and international access facilities, such as the Internet, pay TV, etc

4 Purpose of this document

4.1 The purpose of this document is to address what are considered to be the key strategic and operational issues essential for any institution that is considering providing e-money schemes based on payment card products in Tanzania.

4.2 The purpose of these guidelines is to provide a:

- (i) Common understanding and standardised approach to the establishment of payment card products and services in the country;
- (ii) Coherent framework that will be required in order that any institution embarking upon the provision of payment card products and services may follow in order that continuity will be achieved across participants both in the short and long term;
- (iii) Clear description of what the Bank of Tanzania, as a regulator and supervisor of the financial sector, would expect out of such schemes; and
- (iv) Description of minimum and basic roles, responsibilities, rights and obligations, which all participants of such schemes should be aware of.

5 Objectives of introducing payment card schemes in Tanzania

- 5.1 The introduction of payment card products and services must have consideration for, but not limited to, the following significant general objectives, which are of interest to the nation and are in line with the NPS Vision:
- 5.2 Reduction on the reliance of cash when making small value, face-to-face payments at retail point of sale outlets by: *[Critical Success Factors 3 (vi)]*
- (i) The provision of automated, intelligent point of sale terminals that will facilitate payment for goods and services without the need of cash;
 - (ii) Providing for a potential reduction of costs incurred by the BOT associated with the printing of notes and minting of coins, and
 - (iii) Reducing costs associated with cash handling, especially in mitigating frauds and security risks at both retail and banking levels.
- 5.3 The adoption of the use of cost effective, easily accessible and low risk payment instruments by: *[Pre-requisite for the NPS Vision - 2 (iii) and (v)]*
- (i) The provision of secure, low risk, non-cash instruments that are accessible countrywide as an alternative to the use of cash;
 - (ii) The availability of payment mechanisms that provide convenient payment functionality to consumers nation-wide;
 - (iii) The provision of payment technologies and support infrastructures that will serve to decrease the levels of fraud that are experienced currently; and
 - (iv) Minimising risks related to customer credit and liquidity leading to certainty of settlement finality.
- 5.4 The restoration of public confidence in the banking system by: *[Pre-requisite for the NPS Vision - 2 (i)]*
- (i) Providing auditable payment card products and services designed to assist in the restoration of public confidence that will lead to greater use of services provided by financial institutions;

- (ii) The continued development of additional and value added payment related services that will benefit both the consumer, retailers and financial institutions; and
 - (iii) Sensitising consumers to the adoption and use of payment cards, such that the product may act as a vehicle to engender consumer confidence in other future non-cash alternative payment methods introduced by banks and other financial institutions.
- 5.5 Assurance that all payment transactions are traceable by: *[NPS Critical Success Factors - NPS risk management]*:
- (i) Developing and deploying, auditable payment card schemes that provide comprehensive details of all transactions. Such systems will provide accessible audit trail data from the point of sale to the end of individual transactions;
 - (ii) Ensuring that the scheme is capable of providing several options to facilitate storage of previous transactions at the card-accepting devices and at the processing systems of the Issuer and Acquirer.

6 Concepts, Definition and Terms

- 6.1 There are concepts, definitions and terms in different sections of this document, which are considered specific for the purposes of these guidelines.
- 6.2 Appendix – II, therefore defines the terminology and describes terms and concepts, which are considered essential to readers of this document.

Section Two:**The Role and Position of the Bank of Tanzania****7 The role of the BOT as regards e-money products and schemes.**

- 7.1 Given the rapid pace of technological advancement in e-money products and payment card products and services in particular, the BOT should:
- (i) Ensure that the introduction of electronic money (e-money) products and schemes are consistent with Central Bank objectives in the implementation of monetary policy;
 - (ii) Ensure that the rights and obligations of the respective participants in e-money schemes should be clearly defined and disclosed;
 - (iii) Work with law enforcement authorities in the prevention of criminal activities, including supply of data and information that may assist to counter money laundering;
 - (iv) Ensure that the provision of clearing and settlement facilities and linkages to financial institutions are secure and have adequate mechanisms to reduce and control risks that may result in systemic disturbances to the financial industry.
- 7.2 In efforts to accomplish such roles, the BOT has documented its position on auditable e-money products and schemes, together with the establishment of criteria for approval of such products in conjunction with minimum guidelines for payment cards in particular.
- 7.3 The BOT stipulates that, an institution or individual wishing to introduce auditable e-money products and schemes in Tanzania, should initiate discussions with it in order that the implications of such products or schemes are fully understood. Such discussion should start as early as possible during the conceptual design phase.

8 Position of the BOT on auditable electronic money products and schemes

8.1 The BOT would support e-money products and schemes that are of auditable nature and understand that:

- (i) An auditable e-money product may be designed to substitute cash, cheque, credit/debit card or account transfers provided each transaction is traceable from source to its finality;
- (ii) Chip technology deployed by smart cards should be encouraged even in credit and debit functionality. This does not, however, mean that existing magnetic stripe should be abandoned altogether;
- (iii) Such schemes would be implemented, operated³ and owned by the financial institutions alone or in collaboration with private non financial institutions;
- (iv) Only retailers with an account and specific agreement with one or more commercial banks participating in the scheme shall be allowed to receive payments conducted utilising e- money products;
- (v) Only commercial banks that are supervised by the central bank shall participate in clearing and settlement of e-money products;
- (vi) Initially, the BOT shall carry out settlement function of all domestic inter-bank e-money transactions; and
- (vii) Such products and schemes should be in line with the minimum guiding principles for auditable e-money products and schemes, as outlined in this document.

9 Approval of e-money products and schemes in Tanzania

9.1 The BOT recognises the fact that over-regulation could hinder innovation, and as such it appreciates and supports on-going efforts undertaken by different

³ Including authorisation, switching/ routing and clearing functions.

financial and non-financial institutions in the country and world wide in developing e-money products and schemes.

9.2 However, due to the fact that e-money products and schemes are emerging, and that most of them are based on evolving new technology, it shall be incumbent on the BOT to ensure that:

- (i) If such products or schemes relates, in any way, with the country's monetary and banking system as a whole, they should remain sound and meet the required standards;
- (ii) Interests of all NPS stakeholders are served by the NPS (e-money products, as a payment instrument, are a crucial component of the NPS); and
- (iii) It guides the evolution of the NPS, focusing primarily on the overall soundness of the NPS components (of which e-money products are included).

9.3 In line with the above responsibility and in view of the fact that in Tanzania there is no specific legislation addressing the issue of Electronic Funds Transfer in general or Electronic Money products and schemes in particular, the BOT, through its Directorate of National Payment System will **authorise** introduction and operation of an auditable e-money products and schemes in Tanzania subject to adherence to the following non-negotiable criteria⁴:

- (i) The Bank of Tanzania must be satisfied that each component of an envisaged scheme conforms to basic rules, regulations and codes that will be put in place to regulate the NPS [*Pre-requisite for NPS vision 2(vi)*];
- (ii) There should be clear risks management measures, which are acceptable to the BOT and are in conformity with NPS risk management principles. Particularly, there should be an indication on how the BOT

⁴ *These criteria are in line with either pre-requisite for NPS vision, Critical Success Factors or Design Guiding Principles of the overall NPS.*

-
- will be provided, by the scheme operator, with risk-related information that will enable it to assess, control and monitor all relevant payment system risks [*Pre-requisite for NPS vision 2(iii)*];
- (iii) The scheme owner should ensure that, institutional arrangements and structures are well developed to the extent that responsible financial institutions or any other participating institutions have sufficient capability, in terms of personnel competence and systems, that will undertake the necessary activities regarding such schemes and/ or products [*Pre-requisite for NPS vision 2(iii)*];
 - (iv) The scheme owner should be able to show that, the proposed scheme shall be able to provide sufficient and reliable means to monitor and control the quantity and velocity of e-money supply in the economy [*Critical Success Factors 3(viii)*];
 - (v) There should be an indication of the mechanisms through which disputes related to e-money products and schemes will be resolved both domestically and internationally (if the scheme involves cross-border card transactions). Issues regarding money laundering should, particularly, be addressed effectively [*Critical Success Factors 3(ix)*];
 - (vi) The scheme should abide by internationally acceptable standards and best practices to facilitate national and international interoperability of e-money products and product accepting devices [*Pre-requisite for NPS vision 2(ii)*];
 - (vii) The scheme should provide an equal opportunity to all commercial banks that are supervised and regulated by the BOT to be allowed to be primary issuers of e-money. Secondary issuers, if any, should be subjected to regulation and supervision by the BOT [*Pre-requisite for NPS vision 2(iv) and Critical Success Factors 3 (v) and (viii)*];
 - (viii) It should be recognised that, electronic money must be issued in exchange for the equivalent real money and redeemed in Bank of

Tanzania money, at par, as and when required by the BOT [*Critical Success Factors 3 (viii)*];

- (ix) It is also important for the scheme operator to indicate consideration of such developments on the low income, un-banked and rural communities, which form a high percentage of the population [*Pre-requisite for NPS vision 2(i)*].

Section Three:

Minimum Guiding Principles

10 Minimum Guiding Principles for Electronic Money schemes based on payment card products.

10.1 The guiding principles illustrated below are considered the minimum required to be adopted by all institutions that are planning the deployment of payment card products and schemes in Tanzania.

10.2 These principles are designed to act as a guide to issuers, acquirers, merchants and other stakeholders that are involved in the concept, design and implementation of any payment card scheme under consideration.

(i) Auditability.

E-money products and schemes should provide an accurate and fully accessible audit trail of transactions from the originator of payment to its finality.

(ii) Clear risk management measures

All e-money products and schemes must have well developed and robust risk management measures that are acceptable both to the regulatory body/s and comply with standards that are internationally acceptable.

(iii) Accommodation of both on and off-line transaction processing facilities

Principles and technological processing platforms that provide a secure and auditable on-line and off-line service to participants shall be adopted. This is particularly relevant to the e-value loading, authorisation and transmission of transactions performed at remote merchant locations.

It must be recognised that some more rural locations suffer from unreliable power supplies that would affect the consistent reliable usage of point of sale terminals. It is suggested that such product and scheme providers consider the

use of alternative power supply to back up point of sale terminals for deployment in such areas.

(iv) Shared payment-processing facilities

The provision of facilities that would be able to accept “chip cards” irrespective of the location⁵ of the e-money product-accepting device is encouraged.

Facilities allowing the cardholder to download value to and extract e-money from the retailer’s card accepting devices should be provided.

(v) Availability of services to the un-banked community

E-money product and schemes should be made available not only to bank current account holders but also to suitably screened and acceptable consumers that do not hold bank accounts but meet the desired criteria of a product issuer.

(vi) Sender and settlement finality

E-money products and schemes must ensure the certainty of achieving same day payment and settlement finality for retailers (merchants) together with participating banks. In this case, payment finality should follow settlement finality.

(vii) Multi-application and multi-purpose/multi-function operations

E-money products and schemes should have multiple functions and multiple applications capability. In case of payment cards, in addition to payment applications, use of the same card for identification of bank customers should be considered.

⁵ Location in this case means, distance and ownership of the card accepting devices.

(viii) Cross-border payment capability

All product issuers shall provide for facilities to allow cross-border transactions to be executed over closed and/ or open communication networks based on controls and regulations in place.

(ix) Change management strategy

The e-money products and schemes must provide for acceptable change management controls and practices. The strategy should include the implementation and migration roles and responsibilities of each participant.

(x) Financial and security standards for e-money products

Proposed e-money products and schemes must use chip technology, that adheres to internationally accepted standards and national standards regulating body in country⁶.

(xi) Availability of Service Level Agreements

Legally binding, enforceable and transparent service level agreements (SLAs) shall be in place and agreed between all relevant participants to a scheme. Such SLAs will reflect the levels that are commonly accepted on an international basis.

⁶Currently, the BOT recognise standards, which are established by International Organisation for Standardisation (ISO) and de facto internationally recognised standards for payment cards based on chip technology. See Appendix – I for details.

(xii) Payment System harmonisation initiative

The e-money products and schemes should be designed and operated in line with the overall objectives of the NPS harmonisation initiative. This will include the broad objectives and principles that are guiding development, deployment and management of the NPS modernisation project as documented in the Vision and Strategic Framework document.

Section Four:
Basic Roles, Responsibilities, Rights and Obligations of
Participants

11 The Consumer

- 11.1 May be described as an individual or organisation that has entered into an agreement with an issuer to use payment card products either singly or jointly.
- 11.2 Each payment card will be produced and customised according to type and should hold the required customer / cardholder details.
- 11.3 The use of payment cards could influence the level of costs, benefits and risks facing consumers today in their daily transactions. It is anticipated that some of the benefits that will accrue to the consumer would include the availability of lower cost, faster and more convenient ways of making payments, especially of small value as well as increasing the diversity of payment options available.
- 11.4 The role of the Consumer, should include but not limited to:
- (i) Maintain a payment card having the capability to read in a contact or contactless environment; and
 - (ii) Initiate a payment card transaction at approved Point Of Sale (POS) outlets, Automated Teller Machines (ATM)/ Automated Cash Dispenser (ACD) terminals and/ or bank computer terminals.
- 11.5 The responsibilities and obligations of the Consumer should include but not be limited to:

Section Four: Roles and Responsibilities of Participants

- (i) Opening an “account” with the issuer or have a specific pre-defined relationship with a service provider⁷ to allow authorised use of the chosen payment card;
- (ii) Entering into a solid and transparent legal agreement that clearly state the rights and obligations of each party, they should be defined, disclosed and enforceable, indicating among other issues, that the cardholders will ensure that:
 - (a) the card is safely held at all times and the Personal Identification Number (PIN) is not available or accessible to any other person;
 - (b) payment card is used solely for the purchase of goods and services from approved POS outlets, ATM’s/ ACD’s or bank terminals that are within the jurisdiction of the Issuer;
 - (c) they abide by the contractual agreements between the Issuer and themselves in terms of maintaining sufficient balances in their accounts and the rules and procedures for stopping payments.
 - (d) agree to the terms and conditions of payment that are stated within the agreement between the two parties to include: rights of the Issuer to withdraw facilities for abuse of the payment card, renewal of the payment card, fee, refusal to renew the payment card etc.
 - (e) they are responsible for the accuracy of the particulars given in the payment instruction issued by them and shall be liable to compensate the Issuer for any loss arising from any error in their payment instruction;

⁷ For the purposes of this document, Consumers Service Providers (CSP) will be serving all cardholders that do not have the bank account. The CSP must however maintain a bank account with the Card Issuer.

Section Four: Roles and Responsibilities of Participants

- (f) they are bound by any payment instruction executed by the participating Institutions if the Institution had executed the payment instruction in good faith and in compliance with the agreed rules and procedure. Provided that the customer shall not be bound by any payment instruction executed by the participating institution if the cardholder proves that the instruction was not issued by him/ her and that it was caused either by negligence or a fraudulent act of the retailer or any employee of the participating institution;
- (g) where the participating institution executes the payment instructions with insufficient funds in the cardholders account, the consumer shall be bound to pay to the bank the amount debited to his/ her account for which an instruction was executed by the Issuer pursuant to his/ her payment instruction, together with penalties set by individual Card Issuers;
- (h) they authorise the Card Issuer to debit to their account any liability incurred by them as a result of any payment card instruction execution by them;
- (i) the payment instruction shall become irrevocable when it is executed with the Card Issuer;
- (j) they shall not be entitled to make any claim against any party in the payment card scheme except the participating Card Issuers and Acquirers;
- (k) in the event of any delay in the completion of the funds transfer or any loss due to an error in the execution of the funds transfer pursuant to a payment instruction, the Issuer's liability shall be limited to the extent of payment of interest at the bank rate for any

Section Four: Roles and Responsibilities of Participants

period of delay in the case of delayed payment and refund of the amount together with interest at the Issuer rate up to the date of refund, in the event of loss due to an error, negligence or fraud on the part of the Issuer;

- (l) no special circumstances shall be attached to any payment instruction executed under the component of the scheme and under no circumstances shall the cardholder be entitled to claim any compensation in excess of that which is provided under part (k) above, for any breach of contract or otherwise;
- (m) shall, within a period of two working days from the date of receipt of the record of transaction or as the case may be, within the period of five working days from the date of receipt of the monthly statement report to the Issuer any discrepancy in the execution of the payment instruction;
- (n) shall not be entitled to dispute the correctness of the execution of the payment instruction or the amount debited to his account if he/ she fails to report the discrepancy within the stipulated period.

11.6 The rights of the consumer, will include but not limited to:

- (i) Be provided with all information pertaining to service level agreements, which must be in place and offered, by the Issuer. All service level agreements will be legally binding in law on both parties, and must therefore, disclose all relevant information describing the service(s) offered, the nature of the product(s), the rights, obligations and responsibilities of each party in the use and limitations of the service offered.
- (ii) Maintain, with the Issuer, an open relationship with complete understanding between the parties that clearly describes the service taken together with all legal implications and financial obligations.

- (iii) Be fully informed of, the purpose of the payment card (describing the functions and services that can be accessed using a particular payment card), e-value loading limits and procedures for loading e-value.
- (iv) Be informed, by the Issuer of the criteria for the issuance of any payment card product together with the process for renewal or replacement of payment cards.
- (v) Be clearly advised by the Issuer, of procedures for withdrawal of usage of the payment card.
- (vi) Be provided with clear instructions, by the scheme provider and/ or Acquirers, on how to use the card when performing any transaction at bank branches, from merchant POS, ATMs, etc.
- (vii) Be advised of all costs related to payment card products in terms of entry/ annual fees, interest charges, renewal charges etc.
- (viii) Be provided, by the Issuer, with duly authenticated records of transactions and statement of accounts, minimally on a monthly basis.
- (ix) Be well protected in the case of financial loss, to include theft or fraudulent use of the payment card.
- (x) Be protected against the manipulation or interception of electronic messages related to card transactions sent over closed and/ or open computer networks.
- (xi) Be protected in the event of any participating institution becoming insolvent, bankrupt or otherwise unable to honor payments

12 Card Issuer (CI).

- 12.1 A Payment Card Issuer is described as an institution that will provide payment card services to the consumer/cardholder. Such organisations are generally financial institutions or credit institutions.
- 12.2 Should the payment card industry, in Tanzania, become an inter-bank activity it is recommended that all issuers are members of the clearing and settlement services.

Section Four: Roles and Responsibilities of Participants

- 12.3 The roles of the Card Issuer will, among others, include:
- (i) To issue payment cards to consumers on their own behalf or on behalf of other domestic and/ or internationally recognised companies.
 - (ii) Provide means, including authorisation, for cardholders to be able to load e-money through either closed or open networks or physically so as to enable use of the card upon receipt.
 - (iii) Accurately maintain and supervise payment cardholders accounts.
 - (iv) Provide adequate risk control measures for the deployment of payment card schemes, in which the Issuer is a participant.
- 12.4 The responsibilities and obligations of the Card Issuer will, among others be:
- (i) As a minimum, ensure that when any payment card is issued the information pertaining to the user will be stored on a central management system that contains the following: *complete personal details, user bank details, card number, PIN number issued, limits, cycle date, audit trail facilities, provision of statistical data and necessary settlement information.*
 - (ii) Issue the criteria to become a cardholder together with setting and agreeing on basic operating principles that do not conflict with the guidelines illustrated in this document.
 - (iii) The Issuer shall execute a payment instruction issued by the consumer or an acquirer duly authenticated by each one of them as verified by the security procedure, unless:
 - (a) the funds available in the account of the consumer are inadequate or properly applicable to comply with the payment instruction and the consumer has not made any arrangement to meet the payment obligation;
 - (b) the payment instruction is incomplete or it is not issued in the agreed form;

Section Four: Roles and Responsibilities of Participants

- (c) the payment instruction is attached with notice of any special circumstances as may be agreed between participating institutions;
 - (d) the Issuer has reason to believe that the payment instruction is issued to carry out an unlawful transaction; and
 - (e) the payment instruction cannot be executed under the payment card scheme.
- (iv) To take all reasonable precautions against illegal use or money laundering related to the use of payment cards.
 - (v) Provision of information to payment card users and merchants covering such areas as: loading limits, fees charged, debiting arrangements, statement information, reason for payment card stoppages or withdrawal of any services etc.
 - (vi) Abide by agreed interbank rules and regulations for clearing and settlement of interbank payment card transactions;
 - (vii) Provide guarantees that daily payment finality is executed for all transactions undertaken by authorised payment cardholders.
 - (viii) Provide a supporting infrastructure that will allow for authorisation procedures to be efficiently carried out and any transaction details captured at a point of sale terminal.
 - (ix) Facilitate the clearing of interbank payment card transactions and provision of the required interbank clearing balances, preferably in electronic form, to the Bank of Tanzania for settlement.
 - (x) Retention of information, documents or their copies regarding any agreements for the period as specified by existing legal requirements. In case a cardholder requests such information, it must be given to him/her within an agreed time that will be specified in the Service Level Agreements. Should such or any other information regarding the cardholder, or for any other reason, be needed by the BOT it should be provided within 24 hours in the working days. The BOT should use

Section Four: Roles and Responsibilities of Participants

such information only for the purposes of supervision and/ or regulation of the banking industry.

- (xi) Position payment card issuers such that they can be able and easily access other national and international payment card schemes, when needed; and
- (xii) Provide duly authenticated detailed account statements to the cardholders, minimally, on a monthly basis;
- (xiii) Conform to the payment clearing and settlement requirements as directed by relevant regulatory bodies.

12.5 The rights of the Card Issuers, among others will be:

- (i) No payment instruction issued by the Consumer shall be binding on the CI until the bank has accepted it;
- (ii) The CI shall, upon execution of every payment instruction executed by it, be entitled to debit the designated account of the consumer, the amount of the e-value transferred together with charges payable thereon, whether or not the account has sufficient balance;
- (iii) In the event of a payment card holder performing fraudulent activities or continual abuse of the card, the CI will retain the right to withdraw the service or facilities by the issuing of notification to the cardholder, other participating institutions, merchants or the automated termination of all transactions attempts until a resolution is agreed;
- (iv) To undertake credit worthiness checks on all applicants as stated within the “terms and conditions” of payment card issuance;
- (v) To ensure that contractual agreements entered into by itself and the cardholder are abided by, including but not limited to: sufficient funds are available in the cardholders account up to an agreed limit; rules and procedures for stopping payments are adhered to;
- (vi) To increase or decrease e-value loading limits upon request from the cardholder or at its own discretion;

- (vii) To independently set an interest rate, fees and charges related to use of a payment card; and
- (viii) To amend terms and conditions of payment card issuance, interest charge changes, renewal criteria, annual fees etc. upon a sufficient advice period to payment card participants.

13 Acquirer

- 13.1 An Acquirer is described as an institution that recruits “retail” merchants to act as Point Of Sale acceptance points within the payment card scheme. Predominantly such issuers or acquirers are financial institutions that provide retail banking services or credit facilities to the community.
- 13.2 In the event that an Acquirer is not a financial institution, consideration must be given as to the financial strength and security of the acquirer to the satisfaction of the regulatory body.
- 13.3 The roles of the acquirer should include, but not limited to:
- (i) Recipients of transactions undertaken by contracted retail/ merchants from POS terminals either directly via a branch network or an established payment card centre;
 - (ii) Ensure timely payment, to merchants, of all authorised transactions conducted on their behalf; and
 - (iii) The establishment of third party processors that may be required to provide services to both individual payment card scheme issuers/acquirers or multiple issuers/ acquirers, commonly referred to as “trusted third party” service providers.
- 13.4 The responsibilities and obligations of the acquirer should, among others be:
- (i) Maintenance and administration of all merchant card accounts within the payment card scheme;

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- (ii) Issue the criteria to become a merchant together with setting and agreeing on basic operating principles that do not conflict with the guidelines illustrated in this document;
- (iii) Allocation of any limits to merchants above which the merchant must obtain specific authorisation prior to accepting a transaction;
- (iv) Facilitate the clearing of inter-bank payment card transactions (preferably in electronic form) and eventually settlement at the Bank of Tanzania;
- (v) To take all reasonable precautions against illegal use or money laundering related to the use of payment cards;
- (vi) Provision of supporting infrastructure to allow for authorisation procedures to be efficiently carried out and any transaction details captured at the point of sale as well as access to international payment card schemes;
- (vii) The Acquirer shall execute the payment instruction on the payment card scheme working day on which the payment instruction is received, unless it notices one or more of the following deficiencies:
 - (a) The merchant specified in the payment instruction has no account or the account of the merchant maintained by the Acquirer does not tally with the account specified in the payment instruction;
 - (b) The Acquirer is prevented by the merchant not to give or receive any credit to the account;
 - (c) The account designated in the payment instruction is closed.
- (viii) Should any of the above deficiencies occur, the Acquirer may reject the payment instructions. In such a case, the Acquirer shall notify, in the manner specified, the Merchant and the CI of the rejection of the payment instruction along with the reasons thereof;
- (ix) Provide detailed account statements to merchants regularly, but should not be more than a cycle of 10 working days;

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- (x) Provide guarantees that daily payment finality is executed for all transactions undertaken by authorised payment card holders, submitted for clearing within agreed cut-off times. All transactions that will be submitted to the clearing system after cut-off time for same day clearing, will achieve payment finality the following day;
- (xi) Update merchants, as fast as possible, on reported hot cards as per agreed procedure among the participants;
- (xii) Retention of information, documents or their copies regarding any agreements for the period as specified by existing legal agreements. In the event that a merchant requests such information, it must be provided within an agreed time period that will be specified in the service level agreements. Should such or any other information regarding the payment card holder or for any other reason be required by the Bank of Tanzania, it should be provided within 24 working hours. The Bank of Tanzania should use such information only for the purposes of supervision and / or regulation of the financial industry; and
- (xiii) Conform to the payment clearing and settlement requirements as directed by relevant regulatory bodies.

13.5 The Acquirer should have the following rights, among others:

- (i) After completion of the clearing, the acquirer must receive final and unconditional funds upon settlement;
- (ii) To withdraw the use of merchant payment cards in the event of the retailer's misuse, reported theft of any payment card or fraudulent use of payment card;
- (iii) To amend terms and conditions of, interest charge changes, renewal criteria, fees etc. upon sufficient advice period to merchants; and
- (iv) To undertake credit worthiness checks as to the status of any persons making application for providing retailer services that will involve payment cards.

14 Retailer/ Merchant

- 14.1 A Retailer or Merchant is described as any retail or service outlet that provides payment card processing services on behalf of the Acquirer or a scheme operator. A retailer need not be committed to only one acquirer but may optimise the services of more than one merchant if so desired
- 14.2 A service outlet may mean supplier of services and/ or professionals that accept payment by the use of a payment card.
- 14.3 The roles of the merchant should be, among others:
- (i) The holder of POS terminals that will have the capability to: hold the cardholder's and the merchant's cards⁸, identify hot cards; and serve as back-up storage for transaction information until transactions are successfully cleared and the merchant's terminal receives such an acknowledgement;
 - (ii) To provide the services for cardholders to effect payment for transactions undertaken at that retail point of sale; and
 - (iii) Transfer payment data and information to the processing centres or Acquirer for the purposes of either authorisation, routing or clearing.
- 14.4 The responsibilities and obligations of merchants, should include the following:
- (i) Install Point Of Sale capture terminal/s that are suitably configured to execute the payment card transactions as defined by the scheme operator;
 - (ii) Shall not execute a payment instruction without complying with the security procedures. No payment instruction shall be accepted for execution in the payment card scheme if the Acquirer is not a participating institution;

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- (iii) Shall bear the liability for loss if any, caused to any participant in the payment card scheme on account of the acceptance by it of any revocation of a payment instruction after it has executed it;
- (iv) Shall maintain duly authenticated records of all payment orders executed by it for a period for which such records are required to be reserved under the applicable rules;
- (v) Shall, upon completion of funds transfer of a payment instruction, furnish to the CI on request, a duly authenticated record of the transaction due to that Card Issuer;
- (vi) Ensure that the security procedures specified by the operator are faithfully carried out. These would include but not be limited to: visual checking of any personal information held on the payment card i.e. signature/photograph, that the card is in date and if necessary that the cardholders signature is completed. The merchant ensures that the payment card is not on a published or automated stop list and if so effects the directions of the issuer. In the case of floor limits that are exceeded, undertake the required authorisation procedures prior to acceptance of the transaction;
- (vii) Provide services to all payment cards that are acceptable within any payment card scheme that is multilaterally agreed between issuers. This may include those that are in development or undergoing a pilot deployment; and
- (viii) Be bound by the terms of contract that are in force between the issuer and or acquirer in terms of, commissions to be paid, rental or servicing of POS device, adherence to service levels and compliance with security measures.

14.5 Merchants should have the following rights, among others:

⁸ *In case of smart card, this will be a master card that accepts, store values/ transactions from the cardholder's card and downloading electronic funds to the merchant account through appropriate channels.*

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- (i) In the event that authorisation be refused for any transaction the merchant will not accept the transaction, instead shall advise the cardholder accordingly. In the case of reported stolen cards, law enforcement authorities should be informed immediately, within specified time that would be agreed by all participants;
 - (ii) Maintain the right to the receipt of funds for any authorised transaction;
 - (iii) Receive protection and assurance of payment in the event of financial loss in the event that an issuer become insolvent, bankrupt or otherwise unable to honour payments made within its e-money liabilities;
 - (iv) To decline the provision of cash to a cardholder in the event that the merchant considers that insufficient cash reserves are available at an outlet; and
 - (v) To provide services available from multiple payment card issuers if desired and does not contravene any other legally binding obligation.

15 Authorisation, Routing (switching) and Clearing Centres

- 15.1 It is expected that there will be the development of a National Clearing Centre (NCC) that will be dedicated to the authorisation, routing and clearing of payment card transactions⁹.
- 15.2 The overriding function of this body would be to provide the services required for interbank payment card transactions with regard to clearing activities, the centre may also provide services related to inter-branch payment card transactions, if necessary.

⁹ *Authorisation mechanism, in this case means, all procedures and components involved in the whole processing cycle (except clearing or settlement functionality), from loading of e-value, the initiation of a transaction at the POS/ ATM terminal, to communication (between cardholder/ merchants and authorisation server), processing and switching of instructions to respective banks and National Clearing Centre.*

Section Four: Roles and Responsibilities of Participants

- 15.3 The NCC may be privately owned and operated for the benefit of all, or some, CI and Acquirers engaged in payment card scheme.
- 15.4 The role of the authorisation, routing/ switching component of the NCC should therefore be, but not limited to:
- (i) Receive transactions from Merchants or/ and Acquirers.
 - (ii) Authorise the received transaction (where necessary¹⁰) or route it for authorisation to respective issuers/ issuer's agents.
 - (iii) Transmit the authorised transactions to the clearing component.
 - (iv) Provide confirmation or denial of the transaction using electronic means within a matter of seconds at the Point Of Sale; and
 - (v) In some cases, the authorisation centre must provide the merchant immediate access in order to obtain a verbal authorisation code for that specific transaction.
- 15.5 The responsibilities of the centre(s) should be as follows:
- (i) Executing the authorisation and routing of payment card transactions, in which the following information must be provided by a merchant as a minimum:
 - (a) Transaction Reference Number (including instruction type identifier);
 - (b) Cardholder's details (with account number, CI code and card number as mandatory fields);
 - (c) Date and Time;
 - (d) Merchant detail (with merchant Code, Merchant Card Number and location as mandatory field);

¹⁰ *Although in some cases authorisation may be done directly by the bank that issued the card.*

- (e) Merchant’s bank code; and
 - (f) Amount to be authorised/ switched.
- (ii) After authorisation and/ or switching, a summary of all payment card transactions and activities must be provided to the NCC “clearing component”, that at a minimum contains the following:
- (a) Related Reference Number - RRN (with Authorising Centre, TRN, Merchant Card Number and Customer Card Number as mandatory);
 - (b) Date and time;
 - (c) Merchant Identifier Code;
 - (d) Merchant’s Bank Code;
 - (e) Customer’s Bank Code; and
 - (f) Authorised Amount of each transaction.
- (iii) The NCC will, thereafter, provide an acknowledgement receipt of all data received in the following manner:
- (a) Acknowledgement Reference Number (ARN), RRN (with Authorising Centre and previously TRN as mandatory);
 - (b) Transaction Status (accepted or rejected);
 - (c) Date and Time; and
 - (d) Accounting details (with Amount - Credited and Debited - with respective account numbers as mandatory).
- (iv) The NCC will then clear instructions. After clearing, the NCC will send a summary equivalent to the acknowledgement message to the respective participating issuer and acquirers; simultaneously, the NCC

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will send the net settlement balances of the respective banks (Acquires and Issuers) to the BOT for settlement purposes¹¹.

- (v) Be positioned to provide or facilitate access to other national or international payment networks and services.
- (vi) Maintenance of a database of all payment cards that have been issued together with a database of all suspended or revoked payment cards. It will also have the responsibility of circulating to all concerned parties details of any reported lost or stolen payment cards together with any such cards that are the subject of any illegal or fraudulent activities.
- (vii) Collection of operational data from all participating parties in order that analysis may be undertaken for the purposes of improvement of service to users. Such indicators to be examined include but are not limited to the following:
 - (a) incidences related to transactions suspected of fraudulent activities, including suspected money laundering activities, stolen cards, lost cards etc;
 - (b) transactions that are rejected by the systems or merchants, including unpaid transactions, expired cards; and
 - (c) total volume and value of transactions made within or via any participating systems, both domestically and internationally.
- (viii) Ensure that the necessary infrastructure to allow the processing, clearing and settlement of payment card transactions is available and operational within the terms laid down by the service level agreement, that will cover minimally the following:

¹¹ *In future these type of transaction processing may be executed through the Bulk Electronic Based Transfer System as a part of the overall National Payment Systems model.*

- (a) system reliability and performance that allow for peak transaction activities;
 - (b) provision of adequate disaster recovery strategies and procedures;
 - (c) secure system access and integrity;
 - (d) secure data storage and archiving abilities both on and off-line;
 - (e) provision for satisfactory handling of any exception requirements and procedures; and
 - (f) complete system audit trails of all operational (including computer network performance) and transaction related activities.
- (ix) In collaboration with Tanzania Bankers Association, establish “business function specifications” designed to ensure the secure transmission of inter-bank payment card messages in a shared environment. The specifications will cover but not be limited to the following:
- (a) customer card functionality;
 - (b) merchant card functionality;
 - (c) card Accepting Terminal standards;
 - (d) security module functionality;
 - (e) key management standards; and
 - (f) hot card management guidelines.

16 Customer Service Providers

16.1 In Tanzania there are many consumers that do not maintain bank accounts at any recognised financial institution. This mass is a high proportion of the

national population and it is considered desirable to promote the usage of payment cards within this environment in an endeavour to stimulate the level of confidence and trust within the banking system whilst also reducing the reliance on cash.

16.2 The development of Customer Service Providers (CSP) is considered to be an efficient method of addressing this area as illustrated below:

- (i) The CSP will be an organisation that maintains an account with one of the participating Card Issuers;
- (ii) The Card Issuer will authorise the CSP to undertake provision of payment card services to consumers on its behalf. In this regard, the Card Issuer will be responsible to ensure integrity of the CSP and that the CSP operates as per these guidelines, particularly to ensure that the CSP issues cards to its customers only up to the limit agreed between itself and the Card Issuer;
- (iii) It is envisaged that those consumers that do not hold bank accounts will be serviced by the CSP. These organisations may also provide the services to make available electronic value by the payment of cash at designated service centers;
- (iv) CSP's will also have the responsibility to not only provide facilities for the transfer of electronic cash for cash payment to a payment card, but also provide cash payment when requested from a payment card;
- (v) Additionally, there may be a need that require employees, not maintaining a bank account, to receive payments, such as salaries, directly to a payment card;
- (vi) The CSP would be required to guarantee the integrity of the Consumers, will also be required to have the efficient and secure facility to identify the payment card holder and facilitate its bank account to be debited

upon a transaction made by the customer¹² against that account reference number; and

- (vii) The CSP will be responsible for observing security procedures issued by the Card Issuer and other relevant bodies when effecting any transfer of either electronic value or cash to and from the cardholder.

17 Basic Responsibilities of the Tanzania Bankers Association (TBA)

- 17.1 In consultation with the BOT, the TBA shall facilitate establishment of a Payment Card Scheme Overseeing Committee or an Association. The Committee/ Association will be responsible in establishing a mechanism for resolving disputes which will involve domestic inter-bank payment card transactions;
- 17.2 The TBA shall facilitate and document a mechanism through which disputes involving international card Issuers will be resolved; and
- 17.3 Shall work closely with the scheme operator/ owner in order to:
 - (i) Formulate technical and operational specifications for inter-bank payment card message exchange;
 - (ii) Establish transparency access criteria for a particular payment card scheme that is based on existing inter-bank clearing and settlement principles. In addition, one or more of the following criteria may apply to direct participants:
 - (a) adequate financial strength of the Card Issuer and Acquirer;
 - (b) minimum number of transactions;
 - (c) the payment of an entry fee;

¹² This must be the customer which loaded the value at that CSP, as such be able to use the card against the bank account of the CSP.

- (d) the approval (on technical and creditworthiness grounds) of the direct participants; or
- (e) the approval of the BOT.

18 The Bank of Tanzania.

- 18.1 The Bank of Tanzania (BOT) as a regulator of the banking industry and a settlement agent, will undertake some roles and responsibility in supporting operations of any authorised inter-bank auditable e-money schemes based on payment card in the country.
- 18.2 The BOT shall therefore undertake the following roles and responsibilities, among others:
- (i) Regulation of the e-money products and schemes based on the payment card products.
 - (ii) The development of policies and guidelines that would be required to implement such schemes.
 - (iii) Put in place, in consultation with the Government, the required legal framework in support of such schemes in general and the Electronic Funds Transfer (EFT) legislation in particular. The BOT may also assist in establishment of institutional arrangements or mechanisms for dispute resolution.
 - (iv) Establish risk management measures to address the issues associated with fraudulent activities and any other measures that may be required to maintain security within such schemes. In connection with this task, the BOT recommends that, provisionally all participants should read, understand and deploy, as much as possible, recommendations from a

Section Four: Roles and Responsibilities of Participants

Group of Ten Report on Risk Management for Electronic Banking and Electronic Money Activities¹³.

- (v) Maintain settlement function of all inter-bank payment card transactions.
- (vi) Reserve all rights to the use of the name of the national currency in any electronic money scheme at all times (that is, during pilot and in live operation of such schemes).

¹³ *Basle Committee on Banking Supervision, "Risks Management for Electronic Banking and Electronic Money Activities", Basle, March 1998. BS/97/122. Also available at the Website (www.bis.org) of the Bank for International Settlement.*

Section Five:**Attributes of a Payment Card Scheme in Tanzania****19 Envisaged minimum attributes of card based e-money payment scheme**

19.1 Cost-effective payment card schemes that compliment the current and future needs of the National Payment Systems, providing:

- (i) A service that contributes to the reduction of consumer and commercial banks operational costs for high volume, small value transactions processing.
- (ii) Point of sale facilities for all payment card users within a particular scheme, initially within the urban areas whilst also developing strategies and deployment plans to serve more remote areas.
- (iii) A scheme that has the capability of embracing further electronic payment systems in the future. For instance, an electronic bulk clearing systems, Internet and electronic banking and electronic commerce transactions.
- (iv) Promotion of payment cards, other non-cash electronic payment instruments and alternative banking services to the consumer.

19.2 Provision of services that are of low risk, high security and integrity that offer, at a minimum but not limited to:

- (i) A payment card environment, which provides services that ensure minimal risk from the point of payment card issuance to payment finality through an auditable system with stringent risk control measures;
- (ii) Effective and secure authorisation facilities for all payment card holders;
- (iii) Security measures that are internationally acceptable, the design and production of payment cards that restrict, as much as possible, the opportunity for fraudulent activities; and

- (iv) The provision of a platform that should facilitate the inclusion of all participants of the payment card system to ensure the complete integrity of all transactions and record maintenance.

19.3 Payment card services designed so as to be easily accessible to consumers whilst also being profitable to issuers, merchants and acquirers.

- (i) Points of sale outlets are developed such that they are convenient to consumers and provide acceptable levels of security and communications so as to encourage payment card usage. For example, point of sale terminals designed such that, payment cards that have been tampered with are detected and automatically rejected at the POS;
- (ii) Payment card issuers have the opportunity of accessing potential new customers by understanding their payment habits that enable them to offer additional complimentary banking products and services;
- (iii) Payment card services offered serves to extend banking hours to consumers in a more secure and convenient manner thus increasing banking services usage.
- (iv) Merchants are offered payment card accepting terminals that are flexible to their services and to the consumers, particularly in remote/ rural areas where reliable power and telecommunications are, in some cases, unavailable. In such areas, consideration is given to portable battery operated, terminals capable of off-line processing; and
- (v) Payment card issuers and acquirers have increased their client base thus contributing to the potential of developing new markets and products that drive additional revenues and profits.

19.4 Service efficiency for payments and transaction processing.

- (i) The authorisation of a payment card transaction is executed instantaneously or, at most, within seconds when employing on-line facilities;

- (ii) Issuers and acquirers ensure that all transactions are executed in the most timely fashion, in line with agreements that have been set according to the agreed service level standards;
- (iii) Payment finality, which follows settlement finality, is reached on a daily basis and within the cut-off time as agreed among relevant participants and
- (iv) All inter-bank payment card activities that require settlement via the BOT are presented in the pre-agreed correct format and at the appropriate time that allows for same day settlement to take place¹⁴.

19.5 Reliability and user confidence.

- (i) The payment scheme support infrastructure is reliable and technically sound, with adequate back up and disaster recovery facilities having sufficient and efficient technical, organisational and procedural safeguards.
- (ii) Solid and transparent legal arrangements where the rights, obligations, roles and responsibilities among participants are clearly defined, disclosed and enforceable.
- (iii) All rules, terms and conditions, including the rights of consumers in the use and distribution of personal and/ or financial information that could constitute a breach of customer privacy and confidence are clearly understood and followed.
- (iv) All payment card scheme issuers and acquirers are subject to prudential supervision, including a requirement to have an appropriate capital base and the obligation to provide statistical information for monetary policy decisions and risk management as and when required by the BOT.

¹⁴ It is assumed that, the scheme operator in consultation with participating banks and the BOT would have established settlement message format and settlement times and options.

- (v) All Issuers and Acquirers have in place systems and mechanisms that detect such acts as money laundering and frauds;

19.6 Flexibility.

- (i) All payment card schemes provide flexible and secure payment facilities that allows for goods or services provided by retailers to be effected in either payment card or physical cash;
- (ii) In line with the above, all transactions conducted by the use of payment cards are attached to with certain incentives (such as loyalty scheme) in order to encourage use of cards as opposed to cash; and
- (iii) The scheme owners position themselves in such a way that they are in a position to take advantage of other emerging electronic financial services that may be applicable now or in the future.

Appendix – I:

Relevant ISO and de facto Standards

20 Relevant ISO Standards¹⁵

20.1 The following are some standards, which the BOT recognises as relevant to payment cards based on chip technology:

- (i) Physical characteristics, dimension and location of contacts, type of electronic signals, transmission protocols and inter-industry commands for interchange transfer, application identification for contact cards (*Refer ISO 7816-1, 2, 3, 4 and 5*);
- (ii) Physical characteristics, radio frequency interface, transmission protocols and transmission security features for “remote coupled” contactless cards (*Refer ISO 10536, ISO 14442-1,2,3, & 4 and ISO 7816-4, 5, and 6*);
- (iii) Electronic interchange of messages relating to financial transactions between systems (*Refer ISO 8583*);
- (iv) Transfer of messages between payment cards and cards accepting devices, for both contacts and contactless technology (*Refer ISO 9992*);
- (v) Security architecture of financial transaction systems using integrated circuit cards covering issues on card life cycle, transaction process, cryptographic key relationships, secure application modules, use of algorithms, cardholder verification, key management, general principles and overview (*Refer ISO 10202- parts 1 through 8 and ISO 11568*); and
- (vi) Personal identification number (PIN) protection principles and techniques in the banking industry (*Refer ISO 9564*).

¹⁵ *International Organisation for Standardisation (ISO), a Geneva based organisation, whose members are national standardisation bodies (e.g. Tanzania Bureau of Standards).*

21 Relevant de facto standards

- 21.1 De facto standards that support international interoperability between cards, terminals, related devices and software should be generally observed;
- 21.2 Developments undertaken by Europay, Mastercard and Visa (EMV specifications) on integrated circuit card, terminal and application specification for payment system should particularly be considered, where necessary;
- 21.3 Developments on Secure Electronic Transaction (SET) specifications for Internet payments should also be considered, particularly any impact of such specifications on operations of e-money products and schemes in Tanzania should be evaluated and addressed.

Appendix – II: Description of Concepts and Definition of Terms

22 Concepts and terminology

- 22.1 A Payment System covers the complete process from initiating a payment transaction, processing of the transaction through to settlement finality. The National Payment System (NPS) therefore, is defined as consisting of a group of institutions, a set of instruments and agreed procedures used to effect payment transactions in the process of ensuring the circulation of money within a given geographical area, usually a country. A country's payment system is viewed as the infrastructure that provides the economy with the highways for processing payments resulting from various economic activities¹⁶.
- 22.2 A payment card scheme is a payment mechanism which enables goods or services to be paid for, by transmitting over a communications network or an interface between two chips¹⁷, details of a transaction to both the consumer's and the retailer's bank with use of plastic cards.
- 22.3 A Smart Card (having a computer embedded computer chip) has the capability of performing stored value applications, in addition to other functions such as debit and credit payment capabilities.

¹⁶ *Adopted from the South African NPS Framework and Strategy document.*

¹⁷ *The two chips should interface the customer's card and the card-accepting devices.*

- 22.4 Credit card – card indicating that the holder has been granted a line of credit. It enables him/her to make purchases and/ or draw e-value or cash up to a prearranged ceiling.
- 22.5 Debit card – card enabling the holder to have his/ her purchases directly charged to funds on his/ her account at a deposit taking institution.
- 22.6 Electronic money refers to electronically stored monetary value on a device that functions as a pre-paid bearer instrument, which can be widely used for making payments to parties other than the issuer, with or without involving bank accounts in the transactions.
- 22.7 Electronic Funds Transfer (EFT) – a transfer of funds, other than a transaction originated by paper instrument, which is initiated through an electronic terminal, telephonic instrument, magnetic media or computer, for the purpose of instructing or authorising a financial institution to debit or credit an account.
- 22.8 Electronic commerce – interactions relating to the purchase of goods or services, conducted over public networks that requires the use of intelligent networked devices.
- 22.9 Electronic money products and schemes can be auditable or non-auditable:
- (i) Auditable payment schemes – those that facilitate payment, exchange of instructions and exchange of value **through** the existing banking and NPS infrastructure. And for which e-money product transaction data **are maintained** as value is expended and can be traced throughout the

processing cycle to its finality. A typical example in this category is the Visa Cash of Visa International.

- (ii) Non- auditable payment schemes - those that facilitate exchange of instructions and exchange of value **independent** of the existing banking or NPS infrastructure. And for which e-money product transaction data **are not necessarily maintained** as value is expended and **cannot** be traced throughout the processing cycle. A typical example in this category is the Mondex International and e-cash of Digicash¹⁸.

22.10 Face-to-face payment – is the payment carried out by the exchange of instruments between the payer and payee in the same physical location.

22.11 Payment finality – at a point when a bank has given a customer confirmation, implicitly or explicitly, that a payment is irreversible and irrevocable.

22.12 Payment cards may be characterised by the use of either of two types of card technology, namely:

- (i) Magnetic stripe – plastic cards with standardised physical dimension, with three stripes on the magnetic stripe on which cardholder’s information is stored, including personal identification number (PIN);
- (ii) Chip embedded - plastic cards, which have an embedded chip, also referred to as Smart Card or Integrated Circuit Card (ICC). A Smart Card has silicon chip embedded in it instead of magnetic stripes, in which all security features and other relevant information pertaining to the cardholder are stored.

¹⁸ *Mondex and e-cash can be circulated within and outside the banking network but are basically cash substitution systems using smart card (hardware) and Internet (software) technology respectively.*

- 22.13 Smart Cards offer secure, non-volatile data storage and secure data processing. They can also be programmed only to release its contents in certain circumstances. It is this capability that provides Smart Cards significantly more security than magnetic strip.
- 22.14 Systemic risk – the risk that the failure of one participant in a payment transfer system to meet its obligations will cause other participants or financial institutions to be unable to meet their obligations when due.
- 22.15 Settlement finality –Finality of settlement, when the settlement agent has given confirmation that a settlement is final and unconditional. That is irrevocable and irreversible.
- 22.16 Stored value card – a card which is capable of storing and transferring e-money.
- 22.17 Technical device – includes stored value products in form of hardware or card based mechanisms (also called electronic purses) and software or network based mechanisms (also called digital cash)¹⁹.

¹⁹ This definition has been adopted from BIS publication No: BS/97/122 titled “Risk management for electronic banking and electronic money activities”, by Basle Committee on Banking Supervision, March 1998.