

İSTANBUL TAKAS ve SAKLAMA BANKASI A. Ş.
PROCEDURE ON BiGA PLATFORM IMPLEMENTING PRINCIPLES

CHAPTER ONE

Purpose, Scope, Basis, Definitions, and Abbreviations

ARTICLE 1 Purpose and Scope

- (1) The purpose of this procedure is to set forth the principles and procedures regarding the membership in, operational processes, transfer and other issues related with BiGA Platform to be operated by Istanbul Clearing, Settlement and Custody Bank Inc.

ARTICLE 2 Basis

- (1) This Procedure has been prepared on the basis of the Communiqué no. 2013-32/43 regarding the Decree No. 32 on the Protection of the Value of Turkish Currency, the Regulation on Activities of Payment and Securities Settlement Systems and Takasbank Gold Transfer System Directive.

ARTICLE 3 Definitions and Abbreviations

- (1) The following terms used in this Procedure shall have the following meanings:
- 1) **Decree No. 32:** means the Communiqué no. 2013-32/43 regarding the Decree No. 32 on the Protection of the Value of Turkish Currency;
 - 2) **Public Key:** means the value derived from a secret key created and shared with other parties for execution of BiGA transfer;
 - 3) **Gold:** means the LBMA-compliant gold defined in the Decree No. 32, for which the standards for acceptance for physical security are determined by Borsa Istanbul and accepted by Takasbank;
 - 4) **Gold Transfer System Procedure:** means Takasbank Gold Transfer System Procedure;
 - 5) **Allocated custody account:** means the relevant gold custody account opened with Borsa Istanbul in the name of the member;
 - 6) **BİAŞ, Borsa İstanbul:** means Borsa İstanbul Anonim Şirketi;
 - 7) **BiGA:** means the value of 1-gram 995/1000 pure gold meeting the conditions of London Bullion Market Association (LBMA-compliant gold) on the blockchain platform;
 - 8) **BiGA Account:** means the public-private key pair allowing for execution of transactions over the blockchain;
 - 9) **BiGA Platform (Platform) :** means the digital asset transfer system allowing for transfer of physically-backed BiGA using the blockchain infrastructure;
 - 10) **BiGA Agreement:** means BiGA Platform Participation Agreement that will be signed by the members that will execute transactions on BiGA Platform;
 - 11) **Blockchain:** means the constantly-growing distributed database in which records are linked to each other with cryptographic elements;
 - 12) **Physical custody:** means the custody of gold in the safe deposit boxes of Borsa İstanbul on behalf of the Member under the account(s) opened in the name of Takasbank;

- 13) **General Manager:** means the General Manager of Istanbul Clearing, Settlement and Custody Bank Inc. (İstanbul Takas ve Saklama Bankası A.Ş.);
- 14) **Private/Secret Key:** means the account-specific value not shared with any other party, comprising a 256-bit random number and allowing for creation of an account on the Blockchain network and executing transactions with such account;
- 15) **iBFT:** means the abbreviation of the algorithm known as Istanbul Byzantine Fault Tolerance;
- 16) **Issue/Issuance:** means the conversion of dematerialized gold in the Gold Transfer System to BiGA and its transfer to BiGA Platform;
- 17) **Redemption:** means the transfer of BiGA balance on BiGA Platform to the Gold Transfer System;
- 18) **Participant agreement:** means the Gold Transfer System Participant Agreement;
- 19) **Consensus:** means the consensus reached within the conditions determined by the platform participant nodes in relation to a transaction executed over the platform;
- 20) **Installation Document:** means the document containing the node and BiGA-WEB installation steps for real environment installations;
- 21) **LBMA-Compliant Gold:** means 995/1000 pure gold standardized by undergoing a refining process by a refinery (good delivery refiner) accredited by the London Bullion Market Association (LBMA);
- 22) **Fungible custody:** means the type of custody in which assets held in custody are stored jointly with the assets of the same properties and they are returned through delivery of any asset representing the same quality and quantity;
- 23) **CCS Regulation:** means the Central Clearing and Settlement Regulation of Istanbul Clearing, Settlement and Custody Bank Inc.;
- 24) **Node:** means the entirety of servers and applications that may execute transactions over the platform and be included in the consensus;
- 25) **Operator Account:** means the account used for performing the operations such as approval of accounts, issuance of BiGA and suspension of transfers over BiGA Platform;
- 26) **Operation Document:** means the document describing how the technical operational transactions will be performed after installation;
- 27) **Portfolio account:** means the member's own account allowing the member to execute transactions over BiGA Platform;
- 28) **Procedure:** means the BiGA Platform Implementing Principles Procedure of Istanbul Clearing, Settlement and Custody Bank. Inc. issued specifically for BiGA Platform and approved by the General Manager, containing the procedures regarding the operation and practices related with BiGA Platform;
- 29) **Regulator Account:** means the account that can display all balances on the Platform;
- 30) **System pool account (Takasbank account):** means the account/accounts opened with Borsa Istanbul in order to store gold in the name of Takasbank;

- 31) **Takasbank:** means İstanbul Takas ve Saklama Bankası Anonim Şirketi (Istanbul Clearing, Settlement and Custody Bank Inc.);
- 32) **Transfer Transaction:** means the book-entry transfer of gold held under Takasbank system pool account on behalf of Members either among the Members and/or to the member's Borsa Istanbul custody account;
- 33) **Transfer System (System):** means Takasbank Gold Transfer System;
- 34) **Member:** means a Takasbank-member institution included in the Platform by signing an agreement with Takasbank and paying the participation fee;
- 35) **Member account:** means the account opened under Takasbank System Pool Account in the name of the Member and monitored in Takasbank system;
- 36) **Directive:** means Takasbank Gold Transfer System Directive approved by the Board of Directors;
- 37) **Board of Directors:** means the Board of Directors of Takasbank.

CHAPTER TWO

Membership Principles

ARTICLE 4 Membership

- (1) Banks meeting the requirements specified in article 5 of the Procedure may become a member of Takasbank BiGA Platform. The Central Bank of Republic of Turkey is a natural member of the platform.

ARTICLE 5 Conditions for Membership

- (1) Any member must have met the following conditions in order to become a member of Takasbank BiGA Platform.
- a) The member must be an active member in Takasbank Gold Transfer System;
 - b) The member must have signed the agreement with its content determined by Takasbank and paid the participation fee specified in the service fees tariff;
 - c) The member must have met the technical infrastructure requirements specified in the Installation Document, prepared by Takasbank and shared with members.

ARTICLE 6 Membership application and admission

- (1) The Banks that will apply for membership are required to submit the following documents.
- a) Membership Agreement and Pre-Agreement Information Form;
 - b) Other documents that may be requested by Takasbank under the relevant legislation;
- (2) For evaluation of membership applications by Takasbank, the information and documents specified in the first paragraph of this article and the other information to be requested by Takasbank must have been completed. The applications made are assessed by Takasbank in terms of fulfilment of the conditions stipulated in article 6 of this Procedure.

ARTICLE 7 Obligations of the members

(1) Members are required to comply with the following requirements;

- a) To act in accordance with all rules and principles laid down in the Procedure and the other related legislation in relation to transfer transactions;
- b) To act in compliance with the principles of good faith and integrity towards its clients and other members;
- c) To timely pay and fulfil all dues, fees, charges, commissions and other obligations required by Takasbank within the period specified in the Procedure;
- ç) To furnish any and all information and documents that may be requested on issues deemed necessary by Takasbank in relation to the business and transactions falling under the scope of the Procedure, and to provide any and all support during the investigations to be carried out by the authorized officers of Takasbank;
- d) To ensure adaptation to all software- and/or hardware-related changes to be made by Takasbank on BiGA Platform within the prescribed periods and to participate in the tests that they are invited to;
- e) To fulfil other obligations under the Procedure within the prescribed time periods and in a complete manner.

(2) If any member foresees that it will be unable to either partially or completely fulfil its obligations; the related member is required to notify such situation immediately to Takasbank together with all substantiating information and documents containing the reasons thereof.

(3) If they open accounts for and on behalf of their customers; members are responsible to inform their customers and to obtain the necessary explicit consents from them under the legislation on protection of personal data.

(4) The members shall be responsible for fulfilment of all obligations related to the transactions that have executed in accordance with the activities stipulated under the Procedure as well as the transactions and operations performed by their employees as required by their duties.

(5) The members shall be responsible for protection of the public/secret keys that they have generated for the accounts they opened in their own name or on behalf of their customers, and for all loss and damages arising from the transactions executed as a result of the seizure of public keys by third persons without the member's consent.

(6) In cases where members cannot have access to BiGA Platform; the redemptions may, if requested by the member, be executed by Takasbank within the framework of the written instructions to be given by those authorized to represent the member.

(7) The members shall execute all operations and transactions over their own systems using the front-end applications developed by themselves or provided by Takasbank (BiGA WEB) or outsourced from third persons.

(8) The instructions forwarded to the Platform may not be withdrawn.

- (9) The members are obliged to take all measures related with the operations and transactions executed via the Platform as required to be taken pursuant to the laws and the relevant secondary legislation on prevention of laundering of proceeds of crime and financing of terrorism.
- (10) The Members are authorized to execute their own transfer transactions and/or those of their customers only.
- (11) Members may not display any behaviours that will prevent the operation of BiGA Platform except for any force majeure events. The member and/or members displaying the related behaviour are responsible for any loss or damages that may arise in case of circumstances such as deliberate shutdown of servers, sending requests for transactions incompatible with the structure to BiGA Platform, deliberate cyber-attacks, displaying behaviours with a deliberate intent of occupation, etc.

ARTICLE 8 Disciplinary provisions

- (1) The disciplinary provisions specified in chapter seven of the CCS regulation shall apply for the members failing to comply with the obligations specified in this Procedure.

ARTICLE 9 Suspension of member activities and removal from membership

- (1) In case of occurrence of significant risks that may jeopardize the secure and uninterrupted operation of the Platform as a result of the loss of membership conditions or the failure in fulfilment of obligations; Takasbank shall be entitled to either temporarily suspend the related member's activities entirely or on transaction basis without giving any time period or remove the member from membership.
- (2) If the trading authorization is revoked by BİAŞ or the competent authority, the member shall be removed by Takasbank from the Platform membership. The obligations that have arisen from the transactions included within the scope of the Procedure and required to be fulfilled by the members whose activities have been suspended, or who have been removed from membership or who wish to leave membership upon their own written request shall survive.
- (3) The termination of any member's membership in BiGA Platform shall not be rendered as the termination of the related member's membership in the Gold Transfer System. The member's membership in the Gold Transfer System shall continue.
- (4) If any member's membership in the Gold Transfer System is terminated, the related member's membership in BiGA Platform shall be automatically terminated. The member shall perform the redemptions in line with the principles specified in article 19 of this Procedure.
- (5) If any member's membership in the Gold Transfer System is terminated, the related member's membership in BiGA Platform should be terminated and the BiGAs on the Platform should be redeemed and converted into dematerialized gold within the period specified in article 19 of this

Procedure. If such redemption is not completed within the prescribed period, redemptions shall be performed directly by Takasbank.

ARTICLE 10 Retirement from membership

- (1) The institution willing to retire from membership shall notify Takasbank in writing thereof. In addition;
- 1) All future value dated transactions executed on the Platform must have been fully liquidated;
 - 2) It must have no Platform-related obligation towards Takasbank.

CHAPTER THREE

Access to Platform, and Usage and Protection of Private and Public Keys

ARTICLE 11 Access to Platform

- (1) The members are included over the applications for which the installation stages are described in the Installation Document provided by Takasbank for installation of their nodes to be included in the platform.
- (2) The members shall notify Takasbank of their static IP and/or IPs given to servers used for installation.
- (3) The members shall share with Takasbank the information related with the public key that is the indicator of the related node after the installations that they make.
- (4) The members shall give the necessary permissions to the IPs and ports pertaining to BiGA Platform participants shared by Takasbank over their hardware and/or software in order to allow for dual access over their own nodes.
- (5) Takasbank shall restrict the access of nodes to the platform and/or request the necessary denial of access from the members in case of any doubts.
- (6) A member may have access to the Platform with not less than 1 and not more than 2 nodes.

ARTICLE 12 Consensus

- (1) The members that have completed their node installations shall execute their transactions as required by the consensus rules used on the platform.
- (2) iBFT consensus algorithm is used on the current BiGA Platform.
- (3) As required by the operating principle of iBFT, it is required that approvals should be given by $2n+1$ units of nodes in a blockchain network with $3n+1$ units of nodes for execution of a transaction. This consensus algorithm may tolerate not more than n units of faulty or unfunctional nodes in the

blockchain network. In addition, the approval by one more than half of the current nodes in the blockchain network is required for a node to be newly added to and/or removed from the blockchain network.

- (4) The steps of addition and/or removal of nodes within the scope of consensus are provided in the Operation Document.
- (5) Takasbank is authorized to change the consensus algorithm to be used on the Platform.

ARTICLE 13 Public and Private Keys

- (1) The members generate a pair of public-private keys within their own structure in order to establish communication in the blockchain network and to participate in the consensus.
- (2) While the members share with Takasbank and other platform members the public key information only from the pair of keys specified in the previous article, they do not share the private key information with anybody.
- (3) The members create BiGA accounts in order to execute BiGA issuance, redemption and transfer operations.
- (4) Members are responsible for the security and backup of all private keys that they have generated.

ARTICLE 14 Operator and Regulator Accounts

- (1) Takasbank is the sole authorized owner of the operator account over BiGA Platform.
- (2) The operations like the approval of accounts, issuance of BiGAs and suspension of transfers over BiGA Platform are performed by Takasbank using the operator account.
- (3) The amount information of each transfer transaction to be executed over BiGA Platform is encrypted with the public key of the regulator account in addition to the public keys of the sender and receiver accounts.
- (4) Takasbank is authorized to transfer its regulator account to the relevant regulatory and supervisory authorities if and when required.
- (5) Takasbank is authorized to suspend/stop the Platform using its operator account in case of occurrence of any extraordinary circumstances, i.e. cases that may be jeopardize efficient, uninterrupted and secure functioning of BiGA Platform.

CHAPTER FOUR

Account Operations

ARTICLE 15 Account Structure

- (1) All accounts necessary for execution of transfer transactions shall be opened for all members willing to execute transactions over BiGA Platform. A Portfolio Account is opened in the name of each member to execute transactions on the Platform and this account is notified to Takasbank via GTS.
- (2) BiGA conversion, issuance and redemption transactions may be executed over portfolio accounts only.
- (3) Members can create on the Platform any number of BiGA Accounts for themselves and for and on behalf of their customers as desired. The accounts created are automatically included by Takasbank into the Platform. Takasbank is authorized to suspend the account in case of extraordinary cases.
- (4) Transfers may be made between the member's own accounts or the accounts of other members over the Platform.
- (5) For physical delivery, members should firstly redeem and convert their BiGAs into book entries and then transfer the gold held in their accounts from their portfolio or customer accounts to their own accounts held with Borsa Istanbul.
- (6) For creating a BiGA balance in an account, the member must firstly transfer the golds in the Gold Transfer System to its portfolio account and then convert them into BiGAs over this account.
- (7) BiGA balances are held as 1 gram (g) of gold = 1 BiGA. The quantitative equivalent of BiGAs held over the Platform in gold is denominated in grams corresponding to 995/1000 purity in 2 digits.
- (8) The transactions executed over Takasbank accounts are subject to the practices and principles of Borsa Istanbul and Takasbank.

CHAPTER FIVE

BiGA, Conversion, Issuance, and Redemption Operations

ARTICLE 16 Conversion to BiGA

- (1) The members signing BiGA Agreement should firstly convert their dematerialized gold that they have previously transferred to the Gold Transfer System into BiGAs in order to execute transactions over the Platform.

- (2)The dematerialized gold to be converted into BiGA are firstly transferred to the Member's Portfolio account over the Gold Transfer System using the inter-account transfer method.
- (3)The conversion of dematerialized gold transferred to the portfolio account into BiGAs over the Gold Transfer System menus.
- (4)The dematerialized gold converted into BiGAs is monitored as BiGA balance in the Gold Transfer System.
- (5)The members may not request for physical gold exit without converting their BiGA balances into dematerialized gold again.

ARTICLE 17 Issuance operations

- (1) Issuance transactions may be executed over the portfolio account only.
- (2) The BiGAs intended to be transferred over the Platform may also be subjected to a transfer by transferring them to BiGA Platform over the Gold Transfer System using the issuance method.
- (3) While the balances converted into BiGA on the Gold Transfer System, but not transferred to the Platform through the issuance method are monitored in the Gold Transfer System; the BiGA balances transferred to BiGA Platform by way of issuance are removed from the Gold Transfer System from the time of transfer and are started to be monitored in BiGA Platform.
- (4) The issuance transactions may also be executed by Takasbank users if the member notifies its written request to Takasbank.

ARTICLE 18 Redemptions

- (1) For dematerialization of BiGAs and their physical delivery, it is required that they are transferred by the member over BiGA Platform to the Gold Transfer System by way of redemption method and then converted into dematerialized gold in the Gold Transfer System.
- (2) The BiGAs transferred to the Gold Transfer System by way of redemption and then converted into dematerialized gold again may be subjected to transfer again as dematerialized gold in the Gold Transfer System or physically received from Borsa Istanbul safe deposit boxes.
- (3) Redemption operations may be performed over the portfolio account created by the member in its own name and defined and entered into the GTS only.
- (4) A customer may not directly execute any redemption. The BiGAs to be redeemed should firstly be transferred from the customer account to the member's portfolio account.

- (5) In case that the member's private keys related with BiGA accounts are lost, the member may create a new account instead of the account, the private account of which has been lost and apply to Takasbank and request for transfer of the balances in the former account to the new account. In such cases, it is required that the identity details of the customers related with such accounts, the details of such accounts and the written application containing the customer's consent for the transfer should be forwarded to Takasbank. After the necessary controls to be performed by Takasbank, the balances in the former account are transferred to the new account. Takasbank is entitled to not execute the transaction if and when it deems necessary.
- (6) In case of occurrence of extraordinary circumstances, i.e. the cases jeopardizing the efficient, uninterrupted and secure operation of BiGA Platform, Takasbank is entitled and authorized to transfer the dematerialized gold balances created by way of redemption of all BiGA balances on the blockchain to the member's own accounts on the Gold Transfer System.

ARTICLE 19 Time periods for Conversion, Issuance and Redemption transactions

- (1) Since issuance and redemption operations run in an integrated manner with the Gold Transfer System, such transactions may be executed only when the Gold Transfer System is open and at the times specified in article 20 of Takasbank Gold Transfer System Procedure.

CHAPTER SIX

Transfer Principles

ARTICLE 20 General principles for transfer

- (1) The BiGAs issued following conversion from dematerialized gold into BiGAs only may be subject to transfer on the Platform.
- (2) No transactions may be executed over the accounts without adequate BiGA balance in the account.
- (3) Members create their transfer instructions over their own systems and transfer them to the Platform using the front-end applications that they have developed on their own or outsourced from third persons.
- (4) In all operations and transactions to be executed under this Procedure, Takasbank shall address and interact with the relevant member only, regardless of whether such transactions belong to the members' clients or not.
- (5) Transfer transactions shall be performed through virement and neither the entry of the transfer instruction nor its approval by the counter-member is awaited.
- (6) Transfer transactions may be monitored instantly over the Platform.

ARTICLE 21 Transaction Currency

- (1) In the transfer transactions executed over the Platform, the balance refers to BiGA corresponding to the gold balance in grams at the purity of 995/1000.
- (2) In transfers, the minimum amount is applied as 1 (one) BiGA and its multiples. The instruction may be entered for minimum 1 (one) BiGA.

ARTICLE 22 Time periods for transfer transactions

- (1) The transactions may be executed on the Platform on a 7-day/24-hour basis.
- (2) Members are free to set the times during which they will allow their customers to execute transactions.
- (3) Future value-dated transfer instructions may not be entered over the Platform.

ARTICLE 23 Transmission and processing of instructions

- (1) Transfer instructions are entered through the members' own systems and sent to the Platform. The instruction received at the Platform is validated by every node on the Platform according to the consensus rules explained in article 13 of this Procedure. If adequate consensus is reached, the transaction is executed; otherwise, the transaction is not executed.
- (2) The transaction executed over the Platform may not be cancelled. However, it is possible to send the balance back upon a new transfer instruction of the counter-party.

ARTICLE 24 Transaction reports

- (1) All data containing the amount, the transacting parties and the other transfer details related with all transactions executed over the Platform may be viewed by all parties on the platform. However, the parties view their own transactions in detail; the other transactions are displayed in an encrypted manner.

ARTICLE 25 Reconciliation

- (1) The total of dematerialized gold in the Gold Transfer System and BiGA balances on BiGA platform is reconciled with the physical gold balance held in Borsa Istanbul safe deposit boxes.

CHAPTER SEVEN

Fees and Commissions

ARTICLE 26 Fees and commissions

- (1) The Platform-related fees and commissions shall be determined by the Board of Directors according to the nature of and parties to the transaction.

- (2) No fees or commissions are collected for issuance and redemption transactions.
- (3) Transfer fees are calculated daily and collected monthly.
- (4) For transfer instructions, transfer fees for are collected from the party sending the instruction.
- (5) The participation fee is collected at the time of acceptance of the membership application. It is not deducted and set off from the Gold Transfer System participation fee.
- (6) Fees and commissions are accrued in TL over the participants' 70-Commission Account held at Takasbank within the month following the transactions; and collected within three business days following such accrual. The commissions not paid within the due period are directly collected from the members' free current accounts.
- (7) The costs and expenses like other expenses, loss or damages, costs, taxes, legal deductions, charges and interests, not specified in the annex to the agreement, but arising from the participant transactions shall be paid by the participant to the designated accounts within the time periods specified by Takasbank, following Takasbank's notification thereof to the relevant participant through system reports, e-mail or in writing.

CHAPTER EIGHT

Miscellaneous and Final Provisions

ARTICLE 27 Issues not specified in the Procedure

- (1) For any issues that are not specified or clarified herein, the General Manager is entitled and authorized to take a decision, and to regulate and direct the implementation in accordance with the relevant regulations.

ARTICLE 28 Disciplinary Provisions

- (1) In addition to the provisions specified herein, the disciplinary provisions provided in Chapter 7 of the Central Clearing and Settlement Regulation shall also apply for the participants not complying with the obligations specified in this Procedure.

ARTICLE 29 Measures to be taken in case of Extraordinary Situations

- (1) Takasbank is authorized to determine and apply the measures to be taken in case of occurrence of the extraordinary situations which Takasbank foresees will adversely affect the functioning of the Platform.

ARTICLE 30 Announcements

- (1) The details and changes related with the issues specified hereunder are announced to the members via the General Letters and Announcements to be published by Takasbank.

ARTICLE 31 Extraordinary Situations/Disasters

(1) The decision-making processes to be followed and the technical and operational methods and tools to be used in case of extraordinary situations/disasters are determined with and announced to the members via the disaster recovery cases guidelines prepared by Takasbank.

ARTICLE 32 Platform Business Continuity

(1) The business continuity plan and disaster recovery rules have been specified in “Takasbank Business Continuity Directive”, the sub-directives issued under such directive and the continuity plans. The general policy texts related with business continuity are announced by Takasbank to the participants via its website.

ARTICLE 33 Changes in Platform Rules

(1) Takasbank is authorized to change the Platform rules. If any change likely to be made in the Platform Rules is subject to the approval of competent authorities pursuant to the relevant legislation; such changes are put into practice after obtaining such approval/s.

ARTICLE 34 Enforcement

(1) This Procedure shall enter into force on its publication date.

ARTICLE 35 Execution

(1) The provisions of this Procedure shall be executed by the General Manager.