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**Public Tender With Additional Competitive Process**

**Number 3/13**

**For the Implementation and Installation of a Banking Services System**

**Part D: Service Definitions Document (Specification)**

**Specifications for a Banking Services System**

**Banking Services for the Bank’s Customers in Shekels and Foreign Currency**

**The Bank of Israel**

**Note**

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**Chapter 1: General**

1. Background
   1. The Bank of Israel provides banking services to the Bank’s customers in accordance with the Bank of Israel Law. The banking services are provided in both local and foreign currency. In this framework, the Bank’s customers maintain current accounts and deposits with the Bank of Israel.
   2. Currently, the Bank uses a number of computer systems in order to provide banking services in shekels and in foreign currency to the Bank’s customers.
   3. The goal of the Bank in this tender is to install a system for providing banking services (hereafter: the banking services system) at the Bank's Accounting Division, which will meet the Bank's operating needs within the framework of the banking services provided to its customers, as will be described below.
   4. As part of this tender, bidders are asked to provide a reduced format proposal (hereinafter: "the reduced format") and/or an expanded format proposal (hereinafter: "the expanded format") in accordance with the following definitions:
      1. The reduced format – The specification of requirements as detailed in this document, which includes only same-day management of customer account balances, in accordance with the definitions that appear in Section 3.3 of Chapter 3 below.
      2. The expanded format – The specification of requirements as detailed in this document, which includes inter-day management of customer balances, in accordance with the definitions that appear in Section 3.4 of Chapter 3 below.
   5. Bidders may propose the system in just the reduced format, in just the expanded format or in both formats. The proposals will be assessed and ranked for each of the formats separately, in accordance with the format noted by the bidder. At the end of the assessment process, the Bank will determine which of the two formats it chooses to implement.
   6. The Bank will consider changes and improvements in work processes, a reduction in the interfaces, reports and forms to be proposed by the bidder for installation in the new system. The Bank is interested in minimizing the changes that will affect the Bank’s customers.
   7. The processes detailed in Chapter 3 below in part reflect currently existing processes at the Bank, and in part are processes which the Bank proposes to implement in the system that will be installed as part of this project.
   8. We emphasize that the processes detailed in Chapter 3 below do not constitute mandatory requirements, but rather the Bank's proposal for implementation into the system that will be installed as part of this project. The mandatory requirements are detailed in Chapter 2 of this document.
   9. **All of the processes proposed in Chapter 3 below will constitute the basis for detailed processes that will be defined jointly with the selected bidder during the system specification stage. Therefore, changes and/or modifications to the processes contained in this document are possible during the detailed specification process.**
   10. **The first part of Chapter 4 below, which deals with the technological aspects of the proposed system, outlines the existing situation at the Bank. The second part of that Chapter includes the mandatory requirements of the proposed system.**
   11. **The Bank will allow the bidder to propose different work processes that it thinks will provide a more efficient solution for the Bank. The Bank reserves the right to accept or reject these work processes.**
   12. The Bank will allow the bidder to propose different timetables for the project, which it things will be able to lead to greater success of the project. The Bank reserves the right to accept or reject these timetables.
   13. All the controls defined in this document are general ones. Additional controls will be defined, jointly with the winning bidder, during the system specification process.
   14. The list of reports and queries defined as required in this document constitutes only a partial list. Additional reports and queries will be defined, jointly with the winning bidder, during the system specification process.
   15. **This specification of requirements and processes is being published in both Hebrew and English. In any case where there is a contradiction between the Hebrew and English versions, the Hebrew version is decisive.**

1. **Principal banking services provided to the Bank’s customers and activities in shekels and foreign currency**
   1. Bank customer information management which includes the following: contact people, addresses, account number, management of account activity information, etc.
   2. Execution of payments and receipts for the Bank’s customers by various methods: SWIFT, Masav, Zahav (RTGS), physical bank check and regular checks, etc.
   3. Execution of funds transfers between accounts of the Bank’s customers in various currencies.
   4. Execution of payments through fixed payment routes.
   5. Execution of payments by the Bank’s customers through authorized direct debits in shekels.
   6. Execution of payments through standing orders.
   7. Resetting account balances at fixed intervals and transferring them to main accounts.
   8. Documents for collection—checks to be redeemed and bills of lading.
   9. Provision of complementary banking services: account statements, references, answering enquiries, etc.
   10. Calculation and debiting of fees for account activities, calculation and debit/credit of interest, withholding of taxes and transfer to the tax authorities, debiting for expense reimbursements, etc.
   11. Various enquiries with banks in Israel and abroad via SWIFT.
   12. Production and issuance of bank statements by means of the Cyber-Ark secure system (Kasefet), confirmation of balances, reports, queries, etc.
   13. Management of customer account balances in various currencies. Management of balances can be done within the banking services system or in a different system provided by a sub-contractor and with a full and transparent interface for the user of the banking services system. Account balance management according to the two formats—reduced and expanded—is detailed in Sections 3.3 and 3.4 of Chapter 3 below.
   14. In general, the Bank requires a system that will primarily be used for payments and receipts in shekels and foreign currency and for managing customers' accounts. The other types of activity listed in paragraphs 2.1-2.12 above, and which do not constitute payments and receipts, have a relatively low volume.
2. **Description of the systems relevant to the activity of the banking services system**
   1. GEM system: The Bank of Israel’s main bookkeeping system. All the accounting entries are channeled to this system. The system interfaces with the currently existing payment and receipt systems. It is based on software from the Consist company and is used to produce the Bank’s financial statements. This system is currently used to manage the banking activity of the Bank’s customers in shekels, including the management of the balances of all the Bank’s customers in all currencies. The banking activity in shekels will be assimilated within the banking services system. The interface to the GEM system will be done through an input system. The banking services system will transfer the results of activity carried out in it to the GEM, in a file with the record structure that appears in Appendix C.
   2. Foreign trade system: This system is used for banking services in foreign currency provided to the Bank’s customers. The activity in this system will be assimilated within the banking services system.
   3. SAP system: This system is used for the Bank of Israel's administrative activity, primarily payments and receipts in shekels and foreign currency (such as payments in foreign currency to the Bank’s suppliers). Administrative payments and receipts in foreign currency will be executed through the banking services system by means of an interface with the SAP system.
   4. The Wall Street system: This is a system for the management of the Bank of Israel’s reserves. The banking services system will interface with this system in order to transfer data on payments (and also for corrections and cancellations) in foreign currency for the updating of balances of the correspondents abroad, or dollar balances of local banks, (i.e. the position) in the Wall Street system, and also for the reconciliation of amounts and currencies according to the position of the Bank of Israel's Market Operations Department. The Wall Street system is also used to perform reconciliations in the Bank of Israel's accounts with correspondents abroad.
   5. System for the Management and Conveyance of SWIFT Messages: A designated system used for communicating with the global SWIFT network and for the management and conveyance of messages to and from this network in various formats (FileAct, FIN, etc.). This software has interfaces with the internal system at the Bank of Israel, including the existing foreign trade system. The system currently used by the Bank of Israel for the management and conveyance of SWIFT messages is the MINT system provided by the Sunguard Israel Company. The Bank of Israel plans to replace the MINT system in the near future but for convenience the MINT system will appear in this document as the system used for the management and conveyance of SWIFT messages. The new banking services system will be required to interface with the MINT system (and/or its replacement) for the purpose of sending and receiving SWIFT messages as part of the activity in foreign currency, according to the criteria appearing in this document.
   6. SWIFT system: This system is used for communication and secure inter-bank transfer of funds. Only financial institutions are members of the SWIFT network. This system interfaces with the MINT system.
   7. Masav (an interbank settlement system): This system is maintained by an external company, which provides interbank settlement services in shekels. Payments in shekels in the banking services system will be executed in the Masav system, among others. Settlement data for the Bank’s customers is transferred for recording in their accounts at the Bank of Israel. The banking services system **in its expanded format** will be required to interface with Masav through files of various structures as dictated by Masav.
   8. Tel Aviv Stock Exchange Clearing House: An entity in which automated interbank transactions between banks and institutions that are members of the Stock Exchange are cleared. Clearing data for the Bank’s customers are recorded in their accounts at the Bank of Israel.
   9. Electronic settlement system (external body): The system used for electronic settlement of checks of the Bank of Israel and its customers. The system will interface with the banking services system for this activity.
   10. The account statements system: An Internet-based system developed at the Bank for its customers in order for them to view balances and transactions in their accounts, together with relevant attachments, such as debit/credit notifications, SWIFT messages, VAT invoices, etc. The account statements system will interface with the banking services system for the transfer of information and attachments that are presented in the account statement system.
   11. The balance confirmation system: This is a designated system developed at the Bank for producing confirmations of account balances for the Bank’s customers. The system makes it possible to produce balance confirmations on the customer, account and government-wide levels, which are used by the customer, the customer’s auditor or the Bank's Accountant-Auditor, including for the purpose of retroactive value dates. The system can access balances from the GEM system while implementing the appropriate controls. The account balance confirmation system will interface with the banking services system for the purpose of accessing information to be produced by the balance confirmation system. The Bank will allow the presentation of an alternative by the bidders, which will produce balance confirmations by means of the banking services system.
   12. The interest system: This is a designated system for the calculation and execution of daily/monthly/quarterly/annual interest on the balances of current accounts and deposits according to various interest rates, whether indexed or unindexed. The system calculates interest daily with the recording of interest accrued until payment/receipt, and at the time of the payment/receipt the customer is debited/credited. The interest system will interface with the banking services system in order to access balances for the calculation of actual debiting/crediting of interest. The Bank will permit the presentation of an alternative by the bidders, in which the calculation and debit/credit of the interest is done via the banking services system.
   13. The BOI SERVICE system: This system is used as a portal and interface for funds transfers between the GEM system and the Zahav (RTGS) system. By means of this system, the transactions of the Bank’s customers in the Zahav (RTGS) system are transferred and will be recorded in the banking services system.
   14. Zahav (RTGS) system: The interbank real-time settlement system in shekels. This system interfaces with the BOI SERVICE system. Payments in shekels in the banking services system will be executed by means of the RTGS system, among others. In addition, transfers to the Bank’s customers from commercial banks via the RTGS system will be required to pass from the RTGS system to the banking services system.
   15. CNET system (Amnet): This is a system for the identification of beneficiaries suspected of financing terror. The banking services system will interface with the CNET system (Amnet) in order to check the names of the beneficiaries and transferring parties appearing on payment instructions.
   16. Internet: Internet sites are used in order to manually verify SWIFT and FEDWIRE codes of the beneficiary bank and the intermediary bank. A computerized solution will be required for this process to be conducted by the banking services system.
   17. Authorized signature system: This system contains the authorizations and signature examples of the authorized signatories of the Bank’s customers. The authorizations of the Bank’s customers for their accounts and signature examples will be centralized in the banking services system.
   18. System for identifying writers of insufficient funds checks (drawers of checks without cover): A list of drawers of checks without cover that is updated from the database of the Bank of Israel's Banking Supervision Department. The banking services system will interface with the checks without cover system to examine such checks.
   19. State Loans Administration system: This system was developed by the Bank with the aim of managing the loan inventory and the redemption of compulsory and external loans for the government. The government's accounts at the Bank of Israel are debited when a government loan is redeemed by means of an interface with the State Loans Administration system. As part of redeeming the loans, payment orders are sent manually to the foreign trading section to issue payment to the beneficiaries.

1. **List of required interfaces**
   1. A list of interfaces based on the currently existing sources of data is below. The proposed system is required to provide interfaces according to this list. The list of interfaces may change in accordance with definitions that will be made when the system specification is done:
      1. Outgoing and incoming interfaces with the GEM system.
      2. Outgoing and incoming interfaces with Masav.
      3. Outgoing and incoming interfaces with Zahav (RTGS).
      4. Outgoing and incoming electronic settlement interfaces (external body).
      5. Incoming internal transfer interface (foreign body).
      6. Incoming interface from the Stock Exchange Clearing House.
      7. Outgoing and incoming interfaces with the interest system.
      8. Outgoing and incoming interfaces between the Bank's systems and the Wall Street system, SAP, check settlement, State Loans Administration and MINT.
      9. Outgoing and incoming interfaces with the Bank's safes—a secure communications between the Bank of Israel and the government for the transfer of files, such as payment instructions, bank statements, etc.
      10. Outgoing interface to the account statements system.
      11. Outgoing and incoming interfaces with the accounting entry report: This procedure checks each entry before its transfer for recording in the GEM system and returns feedback.
      12. Outgoing and incoming interfaces with the CNET (Amnet) system: sending names for verification of suspicions of financing terrorism, and receipt of feedback.
      13. Outgoing and incoming interfaces with the NSF checks system and receipt of feedback.
      14. Outgoing interface to the balance confirmation system.
      15. Incoming interface for copies of checks.
      16. Incoming interfaces from various tables maintained by the Bank: file of exchange rates, file of indices, file of holidays and file of interest rates.
2. **Glossary**
   1. **SWIFT message**: An electronic message that is used by banks who are SWIFT members for communication or the execution of interbank financial transfers in the SWIFT system. See below for a list of the types of messages.
   2. **Swift Code (BIC – Banking Identifier Code)**
      1. A SWIFT code is used as a means of identifying financial institutions in order to facilitate the automated processing of communication messages and interbank financial transfers. The SWIFT code is composed of between 8 and 11 characters. The structure of the swift code can be explained by using the following example:
      2. The Bank of Israel’s SWIFT code is ISRAILIJ.
      3. The first 4 positions represent the name of the bank: ISRA.
      4. The fifth and sixth positions represent the country code: IL.
      5. The seventh and eighth positions represent the city code: IJ.
      6. The last three positions contain the code of the specific bank branch. A transfer to the main bank branch does not use these positions. In this case, XXX generally appears in these positions.
   3. **Routing number**: a 9-digit code used to identify banks in the US only, for the purpose of secure interbank financial transfers. This code can be used instead of the SWIFT code for payments to banks in the US only.
   4. **IBAN (International Bank Account Number):** The IBAN number is an international format for account numbers at banks in European countries. The IBAN contains information on the country, the bank code, the bank branch and the bank account of the beneficiary. The structure of the IBAN is explained through the following example:
      1. GB29 BOFS 8020 0100 1234 56
      2. GB – country code.
      3. 29 – verification code.
      4. BOFS – first four letters of the SWIFT code.
      5. 802001 – the bank code and the branch number.
      6. 00123456 – the beneficiary’s account number.

Note: the structure of the IBAN varies from country to country. To obtain the exact structure of the IBAN, it is recommended that the IBAN Registry be used.

* 1. **Commercial bank**: A financial institution that provides banking services and financial services to the public.
  2. **Correspondent**: A foreign bank through which the Bank of Israel maintains a current account in foreign currency. The Bank of Israel uses correspondents abroad in order to transfer payments to beneficiaries of the government and the Bank of Israel.
  3. **Intermediary bank**: A bank that is used as an intermediary between the Bank of Israel’s correspondent and the beneficiary's bank. An intermediary bank is used when the beneficiary's bank does not manage an account of the Bank of Israel’s correspondent or when the beneficiary's bank is not a SWIFT member.
  4. **Automatic generation**: The development of a field or parameters without manual intervention by the user.
  5. **Authorized signatories**: Officers in a corporation who are authorized to sign a document that creates a financial obligation for that corporation.
  6. **Position**: A function for cash management through correspondents abroad, which is managed by the Operations Unit within the Bank of Israel's Market Operations Department, which is responsible for, among other things, the management of local banks' foreign currency balances at the Bank of Israel.
  7. **Institutions file**: This is a database that contains the details of the commercial banks in Israel, the Bank of Israel’s correspondents abroad and the Bank’s customers. The details of the banks include: name, account number in the Bank of Israel’s books, address, SWIFT code, etc. Details of the Bank’s customers include name, account number in the Bank of Israel’s books, address, etc.
  8. **Fixed payment routes file**: This is a database that contains the details of the payment route of the regular beneficiaries of the Bank’s customers. Each fixed payment route in this file includes, inter alia: a single-value code for the fixed payment route, the name of the beneficiary, the number of his bank account, the name and SWIFT code of the beneficiary bank, details of the intermediary bank (if needed) and the correspondent used by the Bank of Israel to transfer payment to this beneficiary, etc.
  9. **Holidays file (calendar of business days)**: This is a database containing the dates that are not business days in Israel and abroad, according to the various currencies and countries.
  10. **Exchange rates table**: This is a table of the exchange rates of currencies in which bank accounts exist at the Bank of Israel. It is updated daily.
  11. **Electronic settlement**: The settlement of checks between the banks in Israel in shekels is carried out according to electronic files that are distributed among the banks according to the magnetic code on each check. The Bank of Israel has outsourced the creation and absorption of the electronic files to an external body.
  12. **Accruals**: Accounting entry in the system for future receipts/payments, such as income receivables/expense payables, etc.

1. **Banking Service activities provided in shekels and in foreign currency**
   1. Current volume of activities

| **#** | **Field** | **Yearly Quantity** | **Comments** |
| --- | --- | --- | --- |
| 1. | Number of Bank of Israel branches | 1 |  |
| 2. | Systems linked to the banking services system | 17 | Some of the systems' activities will be integrated in the operations of the banking services system to be implemented at the Bank.  See Section 4 above for details. |
| 3. | Interfaces | About 50 | See Section 5 above for details. |
| 4. | Customers | About 100 |  |
| 5. | Customer accounts | About 400 accounts | Number of customers – in the dozens |
| 6. | Volume of yearly activity in foreign currency | About 13,000 | Some of the activities require the SWIFT expenses or receipts, and some require internal recording in the Bank's accounts. |
| 7. | Volume of yearly manual activity in shekels | About 3,500 | Manual payments and receipts in internal transfers, Masav, Zahav (RTGS), and manual settlement |
| 8. | Volume of yearly activity in foreign currency – checks | Physical checks – about 15  Checks receivable – about 100 | Payment and collection of checks |
| 9. | Volume of yearly activity in shekels – checks | About 1,885 incoming checks  About 1,945 outgoing checks | Payment and collection of checks |
| 10. | Actions to record settlement expenses in customer accounts | About 150,000 (in the expanded format only) | Masav, Zahav (RTGS), checks, stock exchange |
| 11. | Forms | About 20 |  |
| 12. | Reports | About 10 complex reports  About 20 reports of intermediate complexity  About 10 simple reports |  |
| 13. | Users in the system | See the table below. |  |

* 1. Required licenses

The quantity of licenses required by type is below:

|  |  |  |
| --- | --- | --- |
| **#** | **Type of License** | **Required Quantity** |
| 1. | Writing | 20 |
| 2. | Reading | 5 |
| 3. | System Management | 3 |
| 4. | IT | 7 |

**Chapter 2: Specification of Requirements**

1. **General requirements**
   1. The Bank requires a banking services system whose licenses will be purchased from the bidder by the Bank .
   2. The system is required to support the provision of the banking services detailed in Section 2 of Chapter 1 above.
   3. The Bank requires specification of the work processes, installation, implementation, assimilation, user training described in Section 6.2 of Chapter 1, support, and maintenance services for the system.
   4. The system must allow the Bank to maintain user tables or another method that will serve as a replacement for the customizations and dependence on IT people, as much as possible.
   5. Four system environments are required: production, trials, development and DR. The Bank is permitted to install up to two additional environments without additional cost.
2. **Mapping of requirements and list of primary processes**
   1. **We emphasize that the requirements classed as mandatory are necessary as required functions for the bank, for which the bidder must detail in his proposal** **how it intends to implement them at the Bank. The processes detailed in Chapter 3 below do not constitute mandatory requirements, but are the Bank's proposal for implementation in the system that will be installed as part of this project.**
   2. **Mapping of the requirements by implementation possibilities:**
      1. The processes are attributed into four categories with the possibility of overlap between them:
         1. **Required as standard:** The function must be provided as standard in the proposed system.
         2. **Possible by a sub-contractor:** The implementation of the function through a sub-contractor may be proposed.
         3. **Preferable as standard:** Additional points will be given to a proposal that includes the function as standard in the system.
         4. **Possible in development:** The function is required but there is no preference for it to be an existing component in the system.

| **#** | **Requirement** | **Required as Standard** | **Possible by a sub-contractor** | **Preferable as standard** | **Possible in development** |
| --- | --- | --- | --- | --- | --- |
| 1. | Managing customer account information | Yes | Yes |  |  |
| 2. | Managing customer account balances in the Bank (in the expanded and/or reduced format) | Yes | Yes |  |  |
| 3. | Payments and receipts in various currencies – automated and manual | Yes |  |  |  |
| 4. | Management of authorized debits of the customer's account by the institution |  |  | Yes | Yes |
| 5. | Executing payments and receipts of checks in shekels and foreign currency |  | Yes | Yes | Yes |
| 6. | Manual and automated internal transfers between accounts managed at the Bank in various currencies | Yes |  |  |  |
| 7. | Execution of payments through standing orders and fixed payment routes | Yes |  |  |  |
| 8. | Managing SWIFT messages to execute various queries with banks | Yes |  |  |  |
| 9. | Support of the following SWIFT messages: 103, 103+, 202, 202cover, 199, 299, 110, 210, 950, 999, 192, 292 | Yes |  |  |  |
| 10. | Adjusting the payments and receipts authorization and confirmation array that exists in the product to the Bank's requirements |  |  | Yes | Yes |
| 11. | Adjusting the query system that exists in the product to the Bank's requirements |  |  | Yes | Yes |
| 12. | Adjusting the controls and criteria array in the product to the Bank's requirements |  |  | Yes | Yes |
| 13. | Archiving and retrieval of SWIFT messages with payment instructions |  | Yes | Yes | Yes |
| 14. | Resetting balances in accounts and transferring them to central accounts (in the expanded format only) |  |  | Yes | Yes |
| 15. | Development of interfaces for individually priced options (price per interface) |  |  |  | Yes |
| 16. | Producing reports |  | Yes |  | Yes |
| 17. | Debiting customer accounts for fees and deducting taxes |  |  | Yes | Yes |
| 18. | Converting historical data |  |  |  | Yes |
| 19. | Inputting data in Hebrew |  |  |  | Yes |

* 1. **Functions required as standard in the system**
     1. Execution of payments and receipts in various currencies (including by manual entries) using SWIFT and other payment methods, as described in paragraph 2.2 of Chapter 1 above (cannot be provided by a sub-contractor).
     2. Execution of payments through standing orders and fixed payment routes (cannot be provided by a sub-contractor).
     3. Internal manual and automated transfers between customer accounts managed at the Bank in various currencies (cannot be provided by a sub-contractor).
     4. Managing SWIFT messages for the purpose of querying the banks, within the proposed system (cannot be provided by a sub-contractor).
     5. Support of the following types of SWIFT messages: 103, 103+, 202, 202 Cover, 199, 299, 110, 210, 950 (Message 950 is required only in the expanded format), 999, 192, 292 (cannot be provided by a sub-contractor).
     6. Managing customer balances in the expanded and/or reduced format (may be provided by a sub-contractor).
     7. Managing customer account information (may be provided by a sub-contractor).
  2. **Primary components in the processes and mapping of requirements**
     1. Debiting of various fees and deduction of taxes are an integral part of the processes and have not been listed in the processes themselves.
     2. The accounting entry resulting from the activities passing through the system is an inseparable part of the processes and does not constitute a process in and of itself.
     3. The bidder is required to present main work processes as performed in the proposed system in his proposal. The bidder can provide the Bank with proposals for various work processes that differ from the processes defined above and below.
     4. It must be possible to execute each of the actions and entries below manually as well.
     5. The work processes must be part of a workflow that is built in to the system.
     6. The system will facilitate the downloading of all reports and data presented on the screens to Excel, PDF and/or other types of Office program files.

| **#** | **Name of the process** | **Input** | **Output** | **Interfaces** | **Comments** |
| --- | --- | --- | --- | --- | --- |
| 1, | Managing customer account information | Input of customer data, such as:   1. Contact details 2. Contact persons 3. Details of bank accounts 4. Information on transactions in the customer’s accounts. 5. Details of authorized signatories. | Statistical reports on activity in the customer’s accounts. |  | - Required as standard  - Possible through a sub-contractor |
| 2. | Management of account balances of the Bank’s customers | **In the reduced format** – same-day balance management before executing payment.  **In the expanded format** - Input of entries from various sources | Absorption of all account transactions from internal and external sources and management of account balances of the Bank’s customers. | Interfaces with various sources | - Required as standard  - Possible through a sub-contractor |
| 3. | Payments by the Bank’s customers in shekels and foreign currency and administrative payments made by the Bank in foreign currency. | 1. Input of a payments file submitted by the Bank’s customers through Masav into the banking services system in the expanded format only. 2. Input of a payment order file submitted by the Bank’s customers by means of Kasefet and input of SAP files of administrative payments into the banking services system. 3. Manual input of payments by the Bank’s customers in shekels and foreign currency on the basis of a payment instruction from the Bank’s customers. | 1. Verification of the transactions file, recording the transactions in the system and transferring them Masav/RTGS and the GEM system. 2. Checking of the payment orders in foreign currency, selection of a payment route and transferring the payment by SWIFT to the bank abroad/in Israel by means of MINT. 3. Recording of transactions in the system and transferring them to the GEM system. | 1. Masav 2. Zahav 3. SAP 4. Kasefet 5. CNET (Amnet) 6. Account statements system 7. MINT 8. GEM 9. Wall Street | Execution of payments and validation of payments :  – Required as standard.  Interfaces – possible in development  \*Currently, the Bank’s customers do not have payments or receipts by means of credit cards. This may be required in the future. |
| 4. | Receipts of the Bank’s customers in shekels and foreign currency, receipts of various entities in the Bank in foreign currency and receipts in foreign currency of a private beneficiary. | 1. Input into the banking services system of a file of receipt transactions coming from the banks to the credit of the Bank’s customers via Masav, in the expanded format only. 2. Input of SWIFT receipt for the Bank’s customers or various entities within the Bank or a private beneficiary managing an account at a bank in Israel or abroad. | 1. Verification of the file from Masav, recording of the transactions in the system and transferring them to the GEM system. 2. Validation of the receipt instructions in foreign currency and in shekels. 3. In the case of a private beneficiary: selection of a payment route and transfer of the payment by SWIFT to a bank in Israel or abroad via MINT/RTGS. In the case that some details are missing or incorrect, the possibility of returning it or sending an enquiry. 4. Transferring an accounting record of the transactions to the GEM system. | 1. Masav 2. CNET (Amnet) 3. SAP 4. MINT 5. Account statements system 6. GEM 7. RTGS 8. Wall Street | Recording of receipts : required as standard  Interfaces:  Possible in development. |
| 5. | Payments by the Bank’s customers through an authorized debit in shekels. | Input into the banking services system of a file of payment transactions arriving from the banks for debiting the Bank’s customers by means of Masav/RTGS. | Verification of the file and the authorized debit, recording the transactions in the system and transferring them to the GEM system. | 1. Masav 2. CNET (Amnet) 3. Account statements system 4. GEM 5. RTGS | Payments and management of the authorized debits:  - Preferable as standard  - Possible in development  Interfaces: possible in development |
| 6. | Manual receipts of the Bank’s customers in shekels and foreign currency | 1. Manual input of the receipts of the Bank’s customers on the basis of a receipt instruction from the Bank’s customers or from other entities in the Bank. 2. Input into the banking services system of a receipt transactions file originating from Masav. | 1. Recording the transactions in the system and transferring them to Masav. 2. Verification of the file, recording of the transactions in the system and transferring them to the GEM system. | 1. Masav 2. RTGS 3. MINT 4. CNET (Amnet) 5. Account statements system 6. GEM 7. Wall Street | Recording of  manual receipts:  -required as standard.  Interfaces: possible in development. |
| 7. | Receipts of the Bank’s customers in shekels | Input into the banking services system of a receipt transactions file originating from internal/external entities for the debit/credit of the Bank’s customers, RTGS, Masav, electronic settlement, the Stock Exchange Clearinghouses and SAP. | Recording of transactions in the system and transferring them to the GEM system. | 1. Masav 2. RTGS 3. Electronic settlement 4. Stock Exchange Clearing House 5. SAP 6. Account statements system 7. GEM 8. CENT (Amnet) | Recording of receipts:  -Required as standard  Interfaces:  Possible in development |
| 8. | Payments of checks by the Bank’s customers in shekels | 1. Input of checks originating from the Check Clearinghouse into the banking services system to debit the Bank’s customers. 2. Input of a file from electronic settlement with details of the checks. | Verification of the checks, recording of the transactions in the system and transferring them to the GEM system. | 1. Electronic settlement 2. Account statements system. 3. GEM | Execution of payments by check in shekels:  - Possible through a sub-contractor  - Preferable as standard  - Possible in development  Interfaces:  Possible in development |
| 9. | Bank check payments of the Bank’s customers in shekels | Input into the banking services system of a file of payment instructions. | 1. Verification of the payment instructions. 2. Printing of a bank check and its dispatch to the government ministry or beneficiary. 3. Recording of the transactions in the system and transferring them to the GEM system. | 1. Kasefet 2. Account statements system 3. GEM | Execution of bank check payments in shekels and interfaces:   * Possible through a sub-contractor * Preferable as standard * Possible in development |
| 10. | Receipts by checks of the Bank’s customers in shekels | 1. Input into the banking services system of checks originating with the Bank’s customers to the credit of the Bank’s customers. 2. Input of a file from electronic settlement containing check details. | Verification of the integrity of the check and recording of the transactions in the system and transferring them to the GEM system. | 1. Electronic settlement 2. Account statements system 3. GEM 4. NSF checks system | Execution of receipts by check in shekels:   * Possible through a sub-contractor * Preferable as standard * Possible in development     Interfaces: possible in development. |
| 11. | Bank check payments of the Bank’s customers in foreign currency | Input into the banking services system of a file of payment instructions originating with the Bank’s customers via Kasefet or with the Bank’s Treasury via the SAP system. | 1. Verification of the payment instructions in foreign currency. 2. Printing of a bank check and its dispatch to a government ministry or the beneficiary. 3. Sending of a SWIFT providing notification of the check to a bank abroad via MINT. 4. Recording of the transactions in the system and transferring them to the GEM system. | 1. SAP 2. Kasefet 3. Account statements system 4. MINT 5. GEM 6. Wall Street 7. CNET (Amnet) | Execution of bank check payments in foreign currency and interfaces:  - Possible through a sub-contractor  - Preferable as standard  - Possible in development |
| 12. | Receipts by check to the Bank’s customers in foreign currency | 1. Input of check details in the system. 2. Manual input of a credit to the ministry following receipt of the credit of the bank abroad. | 1. Transfer of checks for deposit in the bank abroad. 2. Recording of the transactions in the system and transferring them to the GEM system. 3. Warning should the credit for the check not arrive after a period to be determined. | 1. Account statements system 2. MINT 3. GEM 4. Wall Street 5. CENT (Amnet) | Execution of receipts by check in foreign currency:   * Possible through a sub-contractor * Preferable as standard * Possible in development   Interfaces: possible in development |
| 13. | Manual and automated internal transfers between accounts managed at the Bank in various currencies | 1. Manual input of transfers between accounts of the Bank’s customers based on a payment instruction from the Bank’s customers, including between currencies. 2. Input into the banking services system of a file of transactions originating from the electronic settlement system. | Recording of transactions in the system and transferring them to the GEM system. | 1. The electronic settlement system 2. Account statements system 3. GEM | Execution of transfers:  - Required as standard  Interfaces: possible in development |
| 14. | Manual recording of transactions in the accounts of the Bank’s customers | Manual input of transactions that debit or credit the accounts of the Bank’s customers | Recording of transactions in the system and transferring them to the GEM system | 1. Account statements system 2. GEM | Manual recording:  - Required as standard  Interfaces:  Possible in development |
| 15. | Resetting of account balances of the Bank’s customers  **(In the expanded format only)** | 1. Input of account resetting information which arrives manually from the Bank’s customers. 2. Input of updates to the balances of the Bank’s customers, originating from various sources. | Recording of transactions in the system and transferring them to the GEM system. | 1. Miscellaneous systems 2. Account statements system. 3. GEM | Execution of balance resetting and interfaces:  - Preferable as standard  - Possible in development |
| 16. | Payments by the Bank’s customers through standing orders in shekels and foreign currency | 1. Input of a file or manually of payments by the Bank’s customers on the basis of payment instructions from the Bank’s customers. 2. Input into the banking services system of a file of payment transactions from Masav. | 1. Recording of the transactions in the system and transferring them to Masav / RTGS / MINT. 2. Verification of the file, recording of transactions in the system and transferring them to the GEM system. | 1. Kasefet 2. Masav 3. RTGS 4. MINT 5. CNET (Amnet) 6. Account statements system 7. GEM 8. Wall Street | Execution of payments:  - Required as standard  Interfaces:  - possible in development |
| 17. | Various enquires to banks abroad | Input of various text SWIFTs into the system. | Sending of various text SWIFTs from the system. | MINT | Managing SWIFT messages for making enquiries:  - Required as standard  Interfaces:  Possible in development |
| 18. | Generation of queries | Input of query details | Generation of queries according to the user’s definitions |  | - Preferable as standard  - Possible in development |
| 19. | Generation of reports | Input of report details | Generation of reports according to the user’s definitions |  | - Possible through a sub-contractor  - Possible in development |
| 20. | Controls and criteria | Automated and manual input of transactions | 1. Payment details according to criteria. 2. Warnings and reports |  | Controls and Criteria:  - Preferable as standard  - Possible in development  Reports:  Possible in development |
| 21. | Authorizations and approvals | Flexible definition of authorizations according to amounts and users. | Controls, blocking and warnings |  | - Preferable as standard  - Possible in development |
| 22. | Archiving and retrieval of SWIFT messages with payment instructions | Incoming and outgoing SWIFT messages of all types (including text messages) and payment instructions. | Archiving and retrieval of SWIFT messages with linkage to payment instructions. |  | - Possible through a sub-contractor  - Preferable as standard  - Possible in development |
| 23. | Converting historical data from the old system to the proposed system |  |  |  | - Possible in development |

**Chapter 3: Implementation of the system as proposed by the Bank**

1. **General**
   1. **As stated above, we emphasize that the processes detailed in this Chapter do not constitute mandatory requirements, but rather the Bank's proposal for implementation in the system that will be installed as part of this project.**
   2. **The charts detailed in this Chapter present the processes on the basis of full balance management (inter-day) in the "expanded format", and also present an alternative through "dotted lines" that is based on same-day balance management, as defined in Section 1.4 of Chapter 1 of this document**.
2. **List of the general processes relevant to banking activity in shekels and foreign currency**
   1. **Management of information on customers’ accounts**
      1. The system will provide the ability to manage information on the accounts of the Bank’s customers. The management of information will include the customer’s details and those of his accounts, as well as any information required to determine whether financial activity is connected to money laundering.
      2. The information to be managed as part of customer management will include, among other things:
         1. Postal address of the customer
            1. Name of the customer
            2. Address
            3. Internet address
            4. Address of the customer’s accountant
         2. Contact persons
            1. Names of the contact persons
            2. Positions of the contact persons
            3. Telephone numbers of the contact persons
            4. Email addresses of the contact persons
         3. Details of the customer’s bank accounts
            1. Type of account – current account/deposit
            2. Name of account
            3. Account number in the Bank of Israel's banking services system
            4. IBAN number
            5. The account’s currency
            6. Description of the account’s function
            7. Restrictions on the account
            8. Transactions regularly carried out in the account: authorized debit, transfer of balances, etc.
            9. Characteristics of the activity in the account: amounts that pass through the account (highest, lowest and average amount), frequency of large amounts, etc.
            10. For a current account: interest rate on the positive and negative balances.
            11. For a deposit account: terms of the deposit, such as amount of the principal, rate of interest, period to maturity, etc.
            12. Details to be presented when printing checkbooks, as required by the Bank’s customers.
            13. Names of the account’s authorized signatories and samples of their signatures and a history of authorized signatories.
            14. Further details that can be managed by the proposed system.
      3. We emphasize that the foregoing list of details is not complete and will be completed during the system specification.
   2. **Management of tables**

The system will, as much as possible, facilitate the management of tables by users, or another method that will serve as an alternative to customizations and dependency on IT people, as will be defined during the system specification stage.

* 1. **Management of customer account balances in the reduced format**
     1. The banking services system will carry out **same-day balance management**. In this framework, the banking services system will record the opening balances of customer accounts from the Bank's bookkeeping system at the beginning of each day, and will manage balances and transactions passing through it to the customer accounts during the day. At the end of the day, the banking services system will send the accounting entries of the transactions to the Bank's bookkeeping system.
     2. Same-day balance management will be done during the business day, and will facilitate, inter alia, the examination of a customer's account balance during the execution of payment through an interface with the bookkeeping system.
     3. As part of the same-day balance management, the following information will be managed: opening balance, debit transactions, credit transactions, and closing balance, including the chain of transactions that comprise these balances.
     4. The interface with the main bookkeeping system will be by means of aggregation or some other level of detail, to be determined at the system specification stage in the project.
     5. As part of same-day balance management, it will be possible to make a projection of the expected balance at the stage following recording of the payment, and before its approval. The balance projection will be at the level of the debited account and at the level of consolidating customer accounts at the Bank as shall be determined.
  2. **Management of customer account balances in the expanded format**
     1. Customer account balances at the Bank are currently managed through the Bank's bookkeeping system – GEM. As part of balance management, the banking services system will replace the GEM system as the customer balance system, and will serve as the determining system for customer balances (balance confirmations, account statements, and so forth).
     2. The banking services system will perform balance management, in the framework of which it will make detailed records of transactions and transfer the accounting entries of the transactions to the Bank's bookkeeping system.
     3. The system will record transactions from various sources inside and outside the Bank, will assimilate all the transactions into the accounts and will manage the account balances of the Bank’s customers. Balance management will be done during the business day, and will facilitate, among other things, the examination of the customer's account balance at the Bank during the execution of payment.
     4. During account balance management, the proposed system will serve as a handbook to the main the main bookkeeping system.
     5. The balance details to be managed: opening balances, debit and credit transactions and closing balances, including the chain of transactions that comprise these balances.
     6. The interface with the main bookkeeping system will be by means of aggregation or some other level of detail, to be determined at the system specification stage in the project.
     7. As part of the management of balances, the system will be required to automatically reset and transfer account balances to central accounts. The transfer of balances will be carried out according to criteria, such as resetting accounts with debit/credit balances, etc. See section 12.11 below for a description of the process required of the system for closing an account.
     8. As part of the management of balances, it will be possible to make a projection of the expected balance at the stage following recording of the payment, and before its approval. The balance projection will be at the level of the debited account and at the level of consolidating customer accounts at the Bank as shall be determined.
     9. As part of balance management, there will be full integration with the various functions in the system, such that each function will be automatically updated with the correct balance to that moment.
     10. The system will have the ability and flexibility to access balances by various cross-sections and in various ways (online and batch).
  3. **Converting historical data**

The system will facilitate conversions of the history of transations and balances concerning the activity of the banking services in shekels and in foreign currency in the current system. For the purpose of the conversion, the Bank will provide the data in text files and/or Oracle tables, in a structure that it shall determine. Adjusting the data to the system's structure, insofar as required, will be done by the bidder. In general, the conversion and volume of transaction history will be assessed by the Bank in light of the complexity of the conversion that will be required and according to the Bank's needs.

* 1. **Archiving and retrieval of payment instructions**
     1. The system will facilitate the archiving of documents and files and the saving of any information required for a period of at least X years. It will enable continuous access to the archived documents and files. Access will be provided from within the transactions themselves or through queries.
     2. The system will facilitate queries according to any parameter or item of information maintained in the system and according to SWIFT message contents such as: amount, currency, beneficiary, and so forth, and which can be specified in a flexible manner by the user.
     3. The system will include a report generator according to any parameter or type of information maintained in the system. The report generators will be flexible for specification by the user.
     4. The following are examples of documents and files that are to be archived in the system:
        1. Attachment of a file of scanned checks to transactions in an account.
        2. Attachment of debit/credit notifications to transactions in an account.
        3. Attachment of Masav notifications to transactions in an account.
        4. Attachment of outgoing and incoming SWIFT messages to transactions in an account.
        5. Attachment of VAT invoices to transactions in an account.
        6. Attachment of notifications of bank fee debits to transactions in an account.
        7. Attachment of various documents to transactions in an account, such as scanned attachments for manual entries.
        8. Linking of payment instructions to outgoing SWIFT messages for payment and their attachment to transactions in the account.
        9. Linking of various SWIFTs to each other in free correspondence according to a link determined by the user. Also, their attachment to transactions in the account, if the SWIFT messages are related to transactions.
        10. Attachment of deposit documents to a deposit account to be managed in the system.
  2. **Authorizations and confirmations**
     1. The system will facilitate the definition of user authorizations at the level of activity types, in accordance with the separation of functions to be defined by the user (for instance: view, update, and so forth), and will not allow the implementation of actions without authorization.
     2. The system will present each action carried out in the system and the identity of the user that carried it out.
     3. The system will facilitate the definition of users as approvers of payments, receipts and accounting entries. The system will prevent the transfer of a payment/receipt and its accounting entry without approval by the required approvers, which will have been defined in the system. The system will provide a warning to the user in the case of approval of actions by an unauthorized user.
     4. The number of approvers for each type of entry will be determined according to a scale of amounts. The system will facilitate the definition of special authorization for an approver according to amounts.
     5. The system will facilitate the cancellation of approvals prior to an entry.
     6. The system will facilitate the cancellation of an instruction after a SWIFT message has been sent.
     7. The system will prevent changes in transactions after approval is given.
     8. The system will facilitate authorization management by an authorized user, notifications of deviations and generation of reports on authorizations.
     9. The system will facilitate the closing of periods and will block the transfer of transactions for a closed period.
     10. The system will allow the opening of a period with an appropriate authorization.
     11. The system will make it possible to define ROLE for emergencies.
     12. The system will interface as needed with the Bank’s information security system.
     13. The system will facilitate the management of authorizations by means of a workflow of 2 approvers for a change in authorization.
     14. Table of a scale of amounts and approvals

The following is an example of a table of approvals according to a scale of amounts.

* + - 1. The titles “first signature”, “second signature”, etc. represent authorizations for a user according to amount.
      2. In general, every payment/receipt instruction up to an amount equal to X will require the input of the instructions and two signatures of different approvers in the system. For certain payment/receipt instructions, the input and signature of just one user will be enabled, as shall be determined at the system specification stage. For payment instructions of an amount equal to X or larger, an additional signature of a senior manager will be required. If a senior manager is not available, it will be possible to substitute two second-signature approvers. The amount X will be determined by the Bank and will be revised from time to time.

|  |  |  |  |
| --- | --- | --- | --- |
| **Amount of the payment/receipt instruction** | **First signature** | **Second signature** | **Third signature** |
| Up to X | Required | Required |  |
| X or larger – alternative 1 | Required | Required | Signature of a senior manager required |
| X or larger – alternative 2 | Required | Required x3 |  |

* + - 1. The work processes and approvals need to be in a workflow format that is structured into the system.
      2. Flexibility will be needed in authorizations, including changes in the scale, the addition of approvers, etc.
      3. **The system will facilitate various types of actions in the system each with a different scale of approvals.**
      4. The system will manage a log of changes in the allocation of authorizations and role updates.
  1. **Definition of criteria**
     1. The system will facilitate the definition of criteria, according to which payment and receipt transactions will automatically be generated according to various parameters and conditions. The details of the payment transactions will be automatically generated in two aspects:
        1. With regard to the payment transaction as it is presented for the approval of the user. For example, the account of the Bank’s correspondent, the value date, etc.
        2. With regard to the SWIFT details to be generated from the banking services system according to the criteria and the rules of the SWIFT system.
     2. The following are a number of examples of criteria subject to the closing time of a business day, which is currently 15:30 Israel time:

| **#** | **Message number** | **Field number in the message** | **Condition** | **The result that will appear in the field** |
| --- | --- | --- | --- | --- |
| 1. | 103 incoming | Field 32a | If in dollars from a bank abroad | The value date will be as requested in the incoming message **even if same day** |
| 2. | 103 incoming | Field 32a | Banks in Israel; currency is dollar | The value date must be at least t+1 business days |
| 3. | 103 incoming | Field 32a | Currencies other than the dollar | The value date must be at least t+1 business days |
| 4. | 103 outgoing | Field 33b | When there is an instructed amount and currency | Field 33b will be created with an amount and currency |
| 5. | 103 outgoing | Field 50 | When there is an account for the instruction source | In the first line: the account number.  In the following lines: details of the instruction source.  When there is no account number: details of the instruction source from the first line. |
| 6. | 103 outgoing | Field 50 | When there is no account for the instruction source | When there is no account number: details of the instruction source from the first line. |
| 7. | Outgoing message 103 | 57 | When an account appears and the SWIFT code appears | In line 1: the account  In line 2: the SWIFT code |
| 8. | Outgoing message 103 | 57 | When no account appears but the SWIFT code does appear | In line 1: the SWIFT code |
| 9. | Outgoing message 103 | 57 | When the account appears and the name and address of the bank also appear | In line 1: the account  In lines 2-5: details of the bank |
| 10. | Outgoing message 103 | 72 | When the transfer is a SWIFT check (there is no beneficiary account and the correspondent for crediting is 0382) | In line 1: /CHEQUE/ |

* 1. **Fees**
     1. The system will facilitate the definition of various fees, some of them fixed and others variable, inter alia as follows:
        1. Fixed management fees for various services.
        2. Fixed-rate fees according to the type of transactions.
        3. Variable-rate fees according to the amounts of the transactions.
        4. Variable-rate fees according to a scale of amounts.
        5. Variable-rate fees according to currency.
        6. Variable- or fixed-rate fees for a particular quantity of transactions according to a particular transaction threshold.
        7. Fees for manual entry in respect of a fee charged by a correspondent of the Bank of Israel.
     2. With regard to fees, the system will facilitate the following:
        1. Automatic generation of fee calculations and their accounting entry for each payment/receipt instruction.
        2. Definition for each transaction of who bears the cost of the fee: the sending bank, the receiving bank, the beneficiary, etc.
        3. Generation of a notification for each fee according to the definitions to be determined, including periodic notifications.
        4. Generation of various reports according to the definitions to be determined.
        5. Flexibility in the management of fees: addition, change of a fee, including maintenance of a history, etc.
        6. Sending of periodic reports containing a list of fees to the Bank’s customers.
  2. **Electronic signature**

An electronic signature is a technology that facilitates the identification of a signatory on a document sent by him. The signature is unique to the signatory and is subject to his exclusive control. This technology also makes it possible to identify a change in an electronic message after the date of signature. The bidder is asked to describe the capability of the system in this area.

* 1. **Withholding of taxes**
     1. There is currently an obligation to withhold VAT for activities in foreign currency, as will be described below. The system will be flexible and willsupport the withholding of other taxes as well if the need arises in the future.
     2. Withholding of taxes from transfers abroad

The Bank is required to withhold VAT for some transfers abroad. As part of the process of withholding taxes, the following will be required of the system:

* + - 1. The withholding of taxes when a payment/receipt is carried out and/or when an automated input is made of a tax withheld from the Bank’s customers, including refunds of taxes withheld.
      2. Identification of transfers that are liable for taxation according to indicators in the record.
      3. Conversion of a tax payment into shekels.
      4. Execution of manual withholding and refund of taxes.
      5. Access to various reports for tax reporting.
      6. Accounting generation of a tax transaction according to definitions.
      7. Production of a tax invoice according to definitions.
      8. A change in the tax rate.
      9. Definition of various controls.
  1. **Fulfilling regulatory requirements**

The proposed system will be required to fulfill the provisions of the Bookkeeping Law and the SOX regulations.

* 1. **The system’s user language**
     1. The system will be used for the transfer of payments and receipts in foreign currency and shekels. Some of the data recorded in the payment and receipt transactions are provided to the Bank’s customers (which routinely use the Hebrew language).
     2. Therefore, the system will generate reports and outputs for customers in Hebrew, English or a combination of the two.
     3. The system will fully support the existence of data in Hebrew, including saving, receiving and updating of data. In addition, it will support mixed strings that contain Hebrew, English, numbers and special characters.
     4. Uniformity of terms will be maintained in all parts of the system. Terms will be in the Hebrew language in a manner that is understood to the average user.
     5. The system will facilitate the input of data on a combined screen in which it will be possible to input some of the data in Hebrew and some in English.
     6. User interfaces (the screens) will be integrated Hebrew and English.
     7. The system menus for the user to select applications will be in Hebrew.
     8. The integration of HELP comments online in the work screens will be facilitated – in Hebrew.
  2. **Screens**
     1. **General**

The operations and navigation concept will be uniform in all parts of the system.

* + 1. **Menu screens**
       1. The system will facilitate the construction of menus according to an authorization array of user profiles.
       2. The system will facilitate direct movement between actions that is not through the menu, for instance between update and retrieval screens, as well as "shortcut" mechanisms for other actions.
    2. **Action screens**
       1. The screens will be easy to use, with no data overload. The screens will be compatibles with the Bank's business processes.
       2. The screens will show only data relevant for executing the required action.The final summation of the action screen structure will be made by the end of the specification stage.
       3. Viewing data will be shown in a different manner than data for updating.
       4. The system's screens will include a uniform format of elements, including: (a fixed standard for screen colors, fonts, a fixed location for notices and system warnings, functional keys, and so forth).
  1. **Interface with the main bookkeeping system and the structure of an accounting entry**
     1. The interface with the main bookkeeping system will be prepared according to the structure of the accounting entry of the main bookkeeping system which is currently used by the Bank.
     2. As part of this interface, the system will facilitate the execution of the file several times daily. The file will be verified in the accounting entry report.
     3. The proposed system will manage the accounts of the Bank's customers, which may be numbered differently, or as structured in the proposed system. The accounts currently managed in the Bank's bookkeeping system are comprised of numbers with 13 positions.
     4. For the purpose of transferring accounting entries from the banking services system to the Bank's bookkeeping system, there will be a conversion table or other process proposed by the bidder in order to convert the accounting entry into the record structure of the Bank's bookkeeping system.
     5. The structure of the record is attached in Appendix C below. The definitions of the record structure will be determined in the system specification stage.
  2. **Accounting entries**

This section will be expanded during the system specification stage, in accordance with the work processes to be defined in that stage. Receive the file as an XML file in the structure to be determined in the specification stage will be facilitated.

* 1. **Queries**
     1. The system will facilitate the execution of queries according to any parameter that is managed in the system and with various cross-sections of the information.
     2. The queries must be flexible with respect to changes made by the user and open to personal and group definition.
     3. It will be possible to download every query and its result to a file in Excel, PDF or other Office program.
  2. **Reports**
     1. The banking services system will be used to generate reports that present the account activity data on the individual account level against the main bookkeeping system.
     2. The system, i**n the expanded format**, will make a daily reconciliation of the entries between the balances and transactions conducted in the banking services system and the main bookkeeping system.
     3. The system will facilitate the definition and access to reports according to any parameter managed in the system, with various cross-sections of information.
     4. The bidder must provide a list of reports relevant to the Bank's activities in the proposal, as detailed in this document.
     5. Examples of reports:
        1. Report on government accounts with deviating balances by date and by a range of dates.
        2. Report on transit accounts.
        3. Report on government balances for financing of the budget.
        4. Reports on all types of closures.
        5. Report on activity in the government accounts including injection/absorption.
        6. Customer management reports according to criteria: name, address, etc.
        7. Interest calculation report on the customer level.
        8. Various control reports.
        9. Masav transactions reports.
        10. Fees reports
        11. Debit balance limit report
            1. According to the Bank of Israel Law, 5770–2010, Section 49(b): “…The Bank has the authority to provide the government, at its request, with a temporary advance…on the condition that the amount of the temporary advance does not exceed, at any time, NIS X and that it is not provided for more than Y days in the year…”
            2. The system will perform a systemic examination during each business day, so that the government’s negative balance does not exceed the limit of NIS X.
            3. Generation of a report on the government balance in order to monitor compliance with the debt limit of NIS X will be facilitated.
  3. **Controls and reporting**
     1. In general, the controls will be defined during the system specification stage in accordance with the work processes to be defined. The following are examples of the types of controls that the system will contain:
     2. Automated controls: Controls for monitoring changes in the system, as will be defined during the system specification.
     3. Control reports: The system will provide an indication of a deviation from the rules to be defined for the system with regard to controls.
     4. Envelope controls: Controls on incoming and outgoing source and interface data for the banking services system, such as an indication of an interface that was not delivered as defined.
     5. Process controls
        1. Validity controls: Controls that processes defined in the system have been executed. An indication will be provided if a process is not executed.
        2. Input, output and processing controls, such as reasonability checks, control of information integrity and its transfer, and arithmetic controls.
        3. Comparative controls: comparison of balances and transactions between a system and the main ledger.
     6. Reporting
        1. In general, the reports will be defined during the system specification stage. The following are examples of various characteristics in the reports:
        2. Database management according to transactions, accounts and balances: Processing of the data on transactions and balances according to criteria for access on a daily basis. The system will facilitate the generation of reports for purposes of information and investigation.
        3. Link to the existing array of reports and databases that are managed in the main bookkeeping system. Input of transactions and balances into the main bookkeeping system. The system will facilitate the generation of reports and data for the various departments in the Bank and their assimilation within historic data.
  4. **Work in the system during an emergency**
     1. An emergency is defined as a situation in the Bank, in the system or in systems interfacing with the system, in which there is difficulty or inability to operate routinely.
     2. The system will facilitate work during an emergency by means of a solution to be proposed by the bidder, including working by means of a special ROLE/MODE to operate during an emergency, including the input and output of data via barcode.

1. **Details of implementation for foreign currency processes**

For purposes of convenience and in order to facilitate the understanding of the processes, a separation was made between processes in shekels and processes in foreign currency.

* 1. **General implementation of foreign currency processes**
     1. The main process in banking services in foreign currency is the transfer of payments and receipts for the Bank’s customers and administrative payments by the Bank in foreign currency. Most of the payment instructions are received from the Bank’s customers through a computerized interface by means of Kasefet, in a flat file structure. The Bank’s administrative payment instructions are received through the interface with the SAP system. Currently, payment instructions are not received using electronic signature technology.
     2. The proposed system will facilitate:
        1. Manual and automated input of incoming payment/receipt instructions from the Bank’s customers using various payment/receipt methods that will be described below.
        2. The execution of various verifications and controls when inputting an automated instruction into the system, such as verification of the authorization codes, the value date, currency, amount, etc.
        3. The prioritization of payment instructions according to rules to be determined in the system.
     3. The execution of a payment in foreign currency to a beneficiary that has a bank account will require the following details: an account for debiting (the account of the Bank’s customer or a purchasing account at the Bank of Israel), the account of the Bank of Israel’s correspondent for crediting, the full name of the beneficiary and his bank account, amount, date, reference number, method of payment (electronic settlement, check or accounting entry only), type of SWIFT message (202, 103, cover 202+103), details of the beneficiary’s bank (SWIFT code, routing number and the address of the bank) and the SWIFT code of the beneficiary bank's intermediary bank (if needed).
     4. The proposed system will facilitate:
        1. Managing a list of the accounts of the Bank’s customers, the Bank of Israel’s accounts and the accounts of correspondents abroad for the purpose of debiting/crediting their account. This management will include details of the customer and various data on the activity in the account, such as average size of transfers in the account, beneficiary countries, etc., including the possibility of changes in the account definitions and the account criteria. These data will also be used for control and typological checks in the account.
        2. The automatic generation of a correspondent account by currency, in accordance with the details of the payment instruction.
        3. Providing an automated form to be filled in with the details required in a payment instruction.
        4. Verification the integrity of SWIFT codes in the system on the basis of a database of SWIFT codes on the website of the SWIFT Company.
        5. The determination of whether there is a need for an intermediary bank from within the system on the basis of the database of SWIFT codes at the website of the CHIPS company.
        6. Verifying the integrity of the routing number within the system on the basis of the database on the Federal Reserve Financial Services website.
        7. Providing an interface from the proposed system to the Bank’s main institution management tables managed on the Wall Street system.
        8. Generating a SWIFT message for payment that includes the details in the payment instruction according to the rules of the SWIFT system and, if needed, by means of an intermediary bank.
        9. The cancellation of transactions in the system, which will create a storno entry.
        10. The cancellation of a SWIFT message that was dispatched (by means of MT292, MT192, etc.) from within the system.
     5. Although technically it is possible to carry out a payment in the SWIFT system according to the current value date (T), apart from extraordinary circumstances, payment instructions are recorded according to the minimal value date of T+1. The payments and receipts in foreign currency must be executed in coordination with the balance management system of the Bank of Israel's Market Operations Department, i.e., the Wall Street system. The decision of whether to execute a payment according to the T+2 or T+3 value date is dependent on the currency of the payment.
     6. The proposed system will facilitate:
        1. The automatically generation a value date for payment/receipt instructions according to currency (T, T+1, T+2, T+3) and according to the holidays and weekends constraint that will interface with the holidays file of the Bank.
        2. The provision of an interface with the Wall Street software for transferring transactions for the updating of correspondents’ balances according to value date and for the purpose of coordinating amounts and currencies with the position of the Market Operations Department.
        3. The cancellation of payment approvals in the system with a warning that the SWIFT message is to be cancelled, in the case that it was sent prior to the value date.
        4. The input of payment or receipt forecasts, where the information will be managed by customer, amount, currency, value date, status, etc. The management of the forecasts will include warnings to the users according to definitions to be decided upon.
     7. During the input of a payment/receipt instruction, the system will carry out an automatic check of the name of the beneficiary country in the interface to the table of countries that support terror or are suspected of money laundering. If the results of the check do not indicate a problem, then the process continues. If the results indicate a problem, then the process is halted, until the user approves the transaction or the beneficiary or decides to cancel it. The checks are to be carried out for all transactions in the system.
     8. During the input of a payment/receipt instruction, the system will automatically verify the name of the beneficiary through the interface with the CNET (Amnet) system. If the results of the check do not indicate a problem, then the process continues. If the results indicate a problem, then the process is halted, until the user approves the transaction or the beneficiary or decides to cancel it. The checks are to be carried out for all transactions in the system.
     9. If the instruction is approved in the CNET (Amnet) system, a message will be dispatched in the SWIFT format to the MINT system. If the payment instruction deviates from the rules of the SWIFT system, the message will be stopped in the MINT system.
     10. The proposed system will facilitate:
         1. The viewing of the payment order in the SWIFT format prior to its approval.
         2. The viewing of incoming SWIFT messages that generate receipt instructions.
         3. Updating the message format in the system according to the SWIFT standard, which is revised annually.
         4. Managing the controls in the system that prevent an entry which does not conform to the SWIFT rules.
         5. Providing a receipt of an indication in the new system from the MINT system of the status of all SWIFT messages:
            1. ACK: the message was dispatched to the SWIFT system.
            2. The message has passed the checks but has not yet been dispatched to the SWIFT system.
            3. NACK: the message has not passed the checks.
         6. The management and monitoring of indications received from the MINT system.
         7. The sending of a corrected SWIFT message to the MINT system if a NACK notification is received.
         8. Sending a notification to the user of the existence of a NACK status.
         9. Managing a database of SWIFT messages that will contain all the incoming and outgoing SWIFT messages.
         10. Providing feedback to the Bank’s customers on the status of the activity instructions they have sent. The feedback will be sent as an HTML file by means of Kasefet. Some of the Bank’s customers will require accompanying files according to a specific specification that will be defined during the specification of the system.
     11. The SWIFT messages that will be in use can be divided into two groups:
         1. **Messages for a transfer of funds –** This group includes three types of messages:

MT103 – A message used to execute a payment to a beneficiary that is not a banking corporation.

MT202 – A message used to execute a payment to a beneficiary that is a banking corporation.

MT103 + MT202 cover – Two messages that are dispatched together when a payment is transferred to a banking corporation for a beneficiary that is a banking corporation. At the Bank of Israel, these messages are sent when a foreign currency payment that is not in dollars is to be sent to a beneficiary at a commercial bank in Israel. Banks in Israel do not have accounts with the Bank of Israel that are in a currency other than the shekel or the dollar. Therefore, the funds are transferred to commercial bank's account at a different bank abroad (Message 202) and at the same time a message 103 is sent to the commercial bank in Israel informing it of the transfer of funds to its account abroad for its private beneficiary.

* + - 1. **Messages that generally do not involve a transfer of funds (text messages) –** These messages are used for communication between the banks for enquiries regarding the transfer of funds or any other type of enquiry. These include all SWIFT messages apart from 103, 202 and 202cover.
      2. See Appendix A below for a list of the types of messages used by the Bank.
    1. The proposed system will facilitate:
       1. The execution of theactions contained in all the types of messages in use by the Bank.
       2. The recording and receipt of SWIFT messages in text format within the system, their generation and their dispatch from within the system. The generation of details from within a SWIFT receipt text message (amount, date, references of the receipt message, name of the beneficiary, etc.).
       3. Managing incoming and outgoing SWIFT messages. For example: tracking of SWIFT messages, definition of formats for SWIFT text messages with fixed texts, quoting of previous SWIFT messages, etc.
       4. Archiving SWIFT messages with the related payment instructions. This includes the possibility of a link created by the user between a SWIFT text message and a payment instruction or other text messages.
       5. Transferring SWIFT messages by means of the interface to the account statements system.
       6. Flexibility in adding new types of messages for use in the future.
    2. When a payment/receipt transaction is carried out for an account in which the account currency differs from the currency of the transaction, currency conversion is carried out at the exchange rate announced on the value date of the transaction. The system will facilitate the fixing of the transaction’s exchange rate, such that the conversion is carried out according to the exchange rate that is set. In cases where the Bank of Israel's correspondent requests that shekels be delivered to a private beneficiary, the conversion fee will be implicit within the transaction rate determined. Alternatively, other solutions can be proposed, such as a separately recorded conversion fee, etc.
    3. There are entries for which a SWIFT is not sent and only an accounting entry is executed, such as an internal transfer between the accounts of the Bank’s customers, etc.
    4. There are instances in which an instruction is received from abroad to transfer shekels to customers in Israel.
    5. The proposed system will facilitate:
       1. The execution of payments using various payment methods: accounting entry without an outgoing SWIFT, payment with a SWIFT message, etc.
       2. The execution of a payment in shekels with the transfer of a payment file to the RTGS system, a payment in shekels with the transfer of a payment file to the Masav system, and a payment using a physical check.
       3. Providing an interface with the Masav system, an interface with the RTGS system and an interface with the Wall Street system.
    6. a general flow chart of the flow of information in foreign currency activities

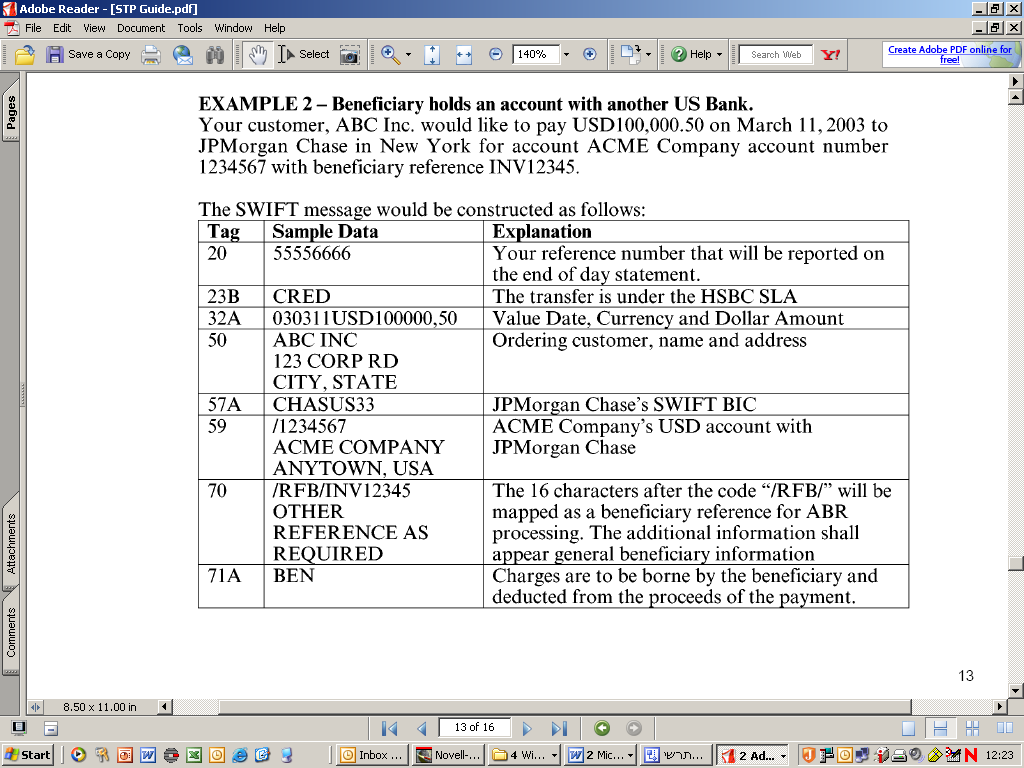


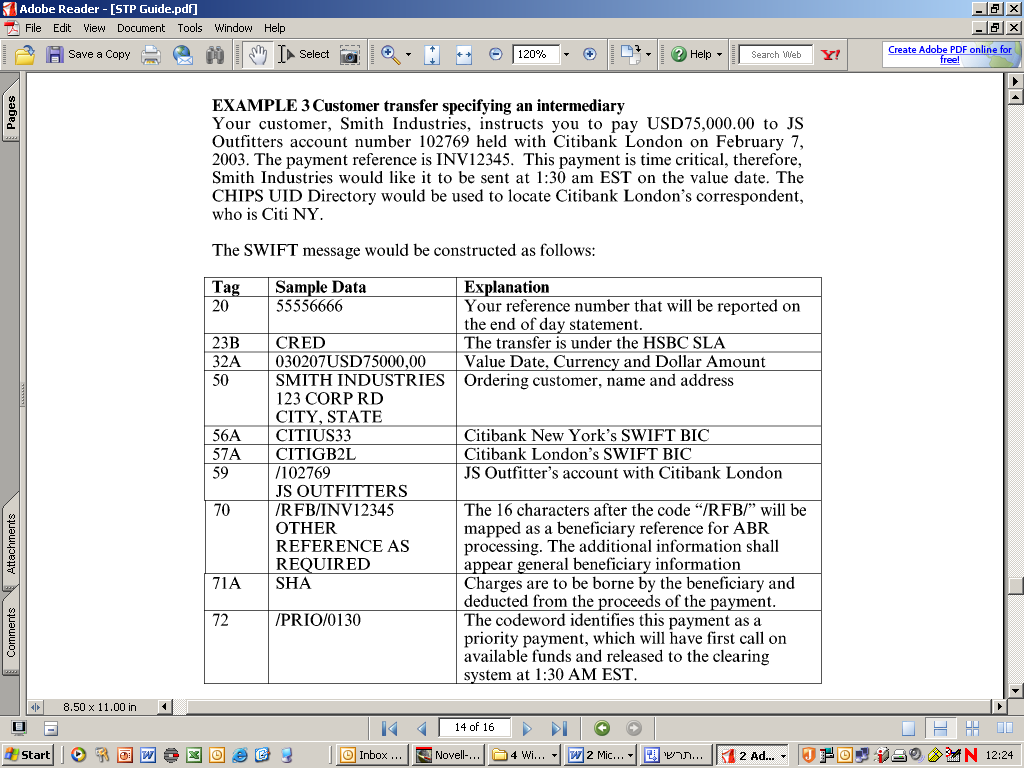
\* The reduced format alternative for same-day balance management is presented in the chart by a dotted line.

* 1. **List of processes in foreign currency**
     1. **Payment instructions in foreign currency**
        1. Pre-input process for a payment instruction

Payment instructions (manual or automated) are received from the Bank’s customers and from various entities within the Bank. Prior to the input of a payment instruction, a number of verifications are performed. A failure in one of these causes the instruction to be returned to the customer who sent it. The following are the main verifications that are performed:

* + - 1. Verification of the authorized signatories – Verification is made that those signing the payment instructions are indeed authorized to sign payment instructions according to the authorized signatory system, which is updated from time to time. To this end, the system will provide an interface to the authorized signatory system for an automated verification of authorized signatories and the receipt of feedback with the result of the verification or alternatively management of authorized signatories within the system.
      2. Implementation of the Law for Prohibiting the Financing of Terror and Money Laundering – Verification performed through the interface with the CNET (Amnet) system and with the list of countries and receipt of feedback from the system with the results of the verification.
      3. Verification of the integrity of the SWIFT code and determination of the need for an intermediary bank – Verification of the SWIFT code listed in the payment instruction. The verification is carried out at the website of the SWIFT system, in which the SWIFT codes are updated in real time. A similar verification is carried out regarding the routing number. In addition, verification is made of whether the beneficiary's bank has account relations with the Bank of Israel's correspondent. If not, an intermediary bank (as appears on the website) that has account relations with both the beneficiary's bank and the Bank of Israel's correspondent is used.
      4. Currency verification – The system will verify that the Bank of Israel has an account at the foreign bank in the currency of the payment. If there is no such account, the payment instruction will be returned to the customer.
      5. Additional verifications – of the standing order code, amount, IBAN, name of the beneficiary, account number for debiting, text in English, etc.
      6. In addition, the proposed system will perform:
         1. An automated verification of the existence of a current account of the Bank of Israel with the correspondent abroad in the currency of the transaction.
         2. Verification of financial transactions prior to and during their input into the system, according to the definitions and criteria to be defined by the Bank.
         3. An automated verification that the customer's account at the Bank of Israel is active.
      7. Actions that the system will perform in the process of inputting a payment instruction
         1. A redundancy check against previous similar instructions – A redundancy check of the payment instruction to examine the similarity of an instruction according to identity of the sender, amount, currency, reference and beneficiary.
         2. Selection of a correspondent according to currency and location of the beneficiary bank – Automatic selection of the correspondent through which the payment will be transferred to the beneficiary bank. For dollars and euros, the location of the beneficiary bank will also be checked and according to that the system will select the appropriate correspondent. In currencies other than the dollar and the euro, the system will automatically select the correspondent according to the currency.
         3. Selection of an intermediary bank: When the currency of the payment is the dollar and the beneficiary bank is not located in the US, the system will check the website in order to identify a bank that has account relations with the Bank of Israel’s correspondent or with a bank that is located in the US. The system will choose an intermediary bank according to what appears on the website where the check is carried out.
         4. Verification of debit balances – The system will carry out an automated verification against the existing balances in the system or against the bookkeeping system (depending on whether balance management is implemented in the proposed system) as to whether the account of a government ministry has a negative balance. If the account has a negative balance, the system will present a warning. The monitoring of negative balances that is mandated by law is on the level of the aggregate balance of all government accounts. Apart from that, there is monitoring on various levels, such as according to customer.
         5. Calculation of fees – The system will automatically calculate fees to be charged to the Bank’s customers. For example, the fees owed for payment instructions in which a SWIFT ($X) is sent, for payment instructions in which there is a currency conversion (X% of the payment amount for each conversion) and other fees.
      8. During the approval process of a payment instruction, the system will facilitate:
         1. A scale of approvals for payments and receipts according to amount.
         2. Viewing the SWIFT message in the system prior to approval.
      9. Output from the execution of a payment
         1. Outgoing SWIFT message – When paid to a private beneficiary, the system will produce a SWIFT message 103 to the MINT system and from there the message will be sent to the global SWIFT system. At the same time, a printout of the SWIFT will automatically be printed with the details of the SWIFT reference and the exact time that the SWIFT went out. This printout constitutes a supporting reference for the execution of the payment and its transfer to a bank that is a member of the SWIFT system. When the beneficiary is a banking corporation, SWIFT message 202 is sent. When the SWIFT message is of the type COV 202, SWIFT message 103 will also be sent.
         2. Accounting entry – For every payment instruction, an accounting entry will be made in the system when the SWIFT message is sent to the SWIFT system. The accounting entry will be communicated through the interface with the bookkeeping system.
      10. Examples of payment details in the SWIFT format – The following are two examples of payments presented in the SWIFT format:





* + - 1. Flow chart of the payment process in foreign currency



\* The reduced format alternative for same-day balance management is presented in the chart by a dotted line.

* + 1. **Payment instructions by means of a SWIFT check in foreign currency**

In the case of a payment instruction where the payment is to be made by SWIFT check, the Bank of Israel transfers the payment by means of a check issued by the Bank of Israel’s correspondent abroad to the beneficiary. In general, the payment process by SWIFT check is identical to the regular payment process in foreign currency. As part of this process, the system will develope the data presented in the SWIFT according to the criteria that will be defined in the system specification stage.

* + 1. **Payment instructions by means of a physical bank check in foreign currency**

As part of the payment process by means of a physical bank check, the proposed system will facilitate:

* + - 1. The printing of a physical check whose details are drawn from the payment instruction approved by the system. The check will be physically inserted into the printer and the sending of a print command will record the details of the check in the relevant places for each detail on the check.
      2. Access to all payment transactions that were given a check identification code in order to create a list of payments designated for printing on a physical check. The system will manage the check numbers according to currency in order for them to match the physical check numbers existing at the Bank for each currency.
      3. The translation of the amount appearing on the payment transaction into words according to the currency of the payment. This translation will also include two numerals after the decimal point (if they exist).
      4. A warning when the amount of the physical check is higher than an amount to be determined.
      5. The details appearing on the check are as follows: check number, amount in numerals, amount in words, date, signature, name of beneficiary, the name “Bank of Israel” and the name of the bank where the Bank of Israel maintains an account in the currency of the check and from which the check will be drawn.
      6. Following the printing of the check, the user will confirm in the system whether the check was printed correctly or not and at that point the serial number for checks that is managed by the system will move to the next number for the next print. If the check is printed incorrectly, the confirmation of the user that it was printed incorrectly will transfer the check number to a status of cancelled.
      7. The creation of a SWIFT message MT 110 from within the system according to the check’s details.
      8. The provision of a mechanism for cancelling a check, blocking and controls for the printing of checks, such as skipping a check number, etc.
      9. Flow chart of the payment process by physical check in foreign currency



\* The reduced format alternative for same-day balance management is presented in the chart by a dotted line.

* + 1. **Creation of a fixed payment instruction (standing order)**
       1. A standing order can have a fixed payment route, a fixed amount, a range of amounts, a fixed date, etc., or a combination of them.
       2. Standing orders are relevant for both shekels and foreign currency.
       3. For a fixed payment route, the proposed system will facilitate:
          1. Input of an instruction to create a standing order both automated and manually.
          2. Management of a fixed payment route table within the system, which will include the standing order code (from within the request received from the customer as part of the series of codes that the Bank of Israel has allocated to the customer), the name of the beneficiary, details of his bank account (account number, SWIFT code, address of the bank and routing number), details of the intermediary bank (if needed) and the account number of the correspondent through which the Bank of Israel is transferring the funds to the beneficiary’s bank, and other details that the customer wishes to appear on payments on a fixed basis.
          3. Updating of the table by a user and an approver.
          4. Simulation of a payment from within the system, which generates a fixed payment.
          5. Verification of the integrity of the SWIFT code for the beneficiary bank and the intermediary bank and verification of the routing number from within the fixed payment route table.
          6. Management of a table of amounts and payment dates fixed in advance.
          7. Creation of a standing order in the system that will include a fixed payment route, a fixed amount and a fixed date of payment, with the possibility of restricting the maximum amount.
       4. Flow chart of the process for creating a fixed payment instruction



* + 1. **Execution of a fixed payment (standing order)**
       1. As mentioned above, a standing order can be carried out in both shekels and foreign currency and with the following possibilities: fixed payment route, fixed amount, a range of amounts, a fixed date, etc., and a combination of them.
       2. The fixed payment process (standing order) is identical to a regular payment, except for the following changes:
       3. There is no verification of the SWIFT code or the routing number since this detail is drawn automatically from the file of fixed payment routes.
       4. The details of the beneficiary and his bank account are not inserted, since this information is drawn automatically from the file of fixed payment routes. Instead, the standing order code is inserted.
       5. The proposed system will facilitate:
          1. Automatic insertion of the payment route according to the fixed payment route instruction code.
          2. Automatic creation of a payment with fixed amount and date according to the definition in the standing order.
          3. The provision of an interface with the Bank’s bookkeeping system in order to stop a payment when the account of the Bank of Israel’s correspondent has become “inactive” in the bookkeeping system.
          4. Standing order payments that are carried out automatically to include a fixed payment route, a fixed amount and fixed date of payment. For these payments, the approval of the user will be required by the system.
       6. Flow chart of the execution process of a fixed payment



\* The reduced format alternative for same-day balance management is presented in the chart by a dotted line.

* + 1. **Payment in a non-dollar foreign currency to a beneficiary whose account is with an Israeli bank**

As part of the execution of a payment instruction in a foreign currency other than the dollar to a commercial Israeli bank, two SWIFT messages will go out: SWIFT 202COVER which transfers the funds to the bank in which the Israeli bank maintains an account and SWIFT 103 which notifies the Israeli bank that the funds have been transferred to its account abroad on behalf of his customer. The payment process of this payment instruction is similar to the process for regular payments in foreign currency.

* + - 1. The proposed system will facilitate:
         1. Automatic generation of two SWIFT messages: MT202COVER and MT103, when there is a cumulative indication that the beneficiary bank is Israeli and the currency of payment is in a foreign currency other than the dollar. The data for fields 50 and 59 in the MT202COVER SWIFT message will be drawn from the details of the payment instruction or from SWIFT message 103 (in the case of the transfer of a receipt).
         2. Management of a table of banks according to currency that specifies at which bank each Israeli bank maintains an account, according to foreign currencies other than the dollar. The table will need to be flexible in order to accept changes and updates.
         3. Automatic generation of the details of the bank where the Israeli bank maintains an account in the non-dollar currency, according to the table mentioned in the previous paragraph.
      2. Flow chart of the payment process for a non-dollar currency to a beneficiary with an account at an Israeli bank



\* The reduced format alternative for same-day balance management is presented in the chart by a dotted line.

* + 1. **Purchase of banknotes in foreign currency (foreign bank notes)** 
       1. As part of the banking service it provides, the Bank of Israel purchases banknotes in foreign currency.
       2. The payment for the purchase of foreign banknotes is no different than the process of a regular payment, including the execution of prior verifications as described in paragraph 11.2.1 above.
       3. The banking services system will facilitate the management and monitoring of purchases of foreign banknotes.
       4. Interfaces may be needed with the Market Operations Department and the Currency Department at the Bank of Israel.
    2. **Receipts in foreign currency received for the Bank’s customers**
       1. In contrast to payments, SWIFT message MT103 (which is a financial transfer message) is received in the case of receipts. Accordingly, the funds have arrived and are already with the Bank. Essentially, only the routing of the money to the Bank’s customer by means of an accounting entry is required. A printout of the SWIFT is obtained and, in addition, a receipt instruction is created in the banking services system, as an instruction that has not yet been dealt with. The user can view the details of the incoming SWIFT in the system in the SWIFT format.
       2. The proposed system will facilitate:
          1. Prior verifications as described in paragraph 4.2.1 in Chapter 3 above.
          2. The input of SWIFT messages with financial implications into the system, which will lead to the automatic generation of a receipt instruction, according to the details appearing in the SWIFT.
          3. Automatic generation of a payment method that does not send out a SWIFT but only cerates an accounting entry.
       3. Flow chart of the process for receipts in foreign currency received for the Bank’s customers



\* The reduced format alternative for same-day balance management is presented in the chart by a dotted line.

* + 1. **Receipts in foreign currency for a private beneficiary in Israel**
       1. The proposed system will facilitate:
          1. Verifications as described in section 4.2.1 in Chapter 3 above.
          2. Identification of a receipt from a commercial bank that does **not** serve as a correspondent of the Bank of Israel for a private beneficiary and creation of a **payment instruction** that returns the funds to the sender of the MT202 SWIFT receipt message.
          3. Identification of a receipt from a commercial bank that serves as a correspondent of the Bank of Israel for a private beneficiary and creation of a **cancellation** of the receipt, which requires user approval.
          4. Automatic generation of SWIFT message MT195/MT199 which includes text to be defined in a fixed format + details of the receipt (amount, date, reference of the receipt message, name of the beneficiary, etc.), providing notification of the return/cancellation of the receipt.
       2. Flow chart of the process for receipts in foreign currency received for a private beneficiary in Israel



* + 1. **Receipt in foreign currency by check received for one of the Bank’s customers**
       1. When one of the Bank’s customers receives a receipt in foreign currency in the form of a physical check, he submits the check to the Bank of Israel, which credits his account by the amount of the check.
       2. The details of the check are recorded and a scanned copy of the check is saved. The check is sent by mail to the Bank of Israel’s correspondent or to the bank that issued the check and a request is made in an attached letter to credit the Bank of Israel’s account in the correspondent’s books. The system will facilitate the management of the recording and tracking of the details of checks sent abroad for crediting.
       3. The correspondent sends a SWIFT message 410 to the Bank of Israel notifying it of the receipt of the check, or a SWIFT message 910 as notification of the crediting of the Bank of Israel’s account.
       4. The system will provide a warning in the system regarding checks sent abroad in respect of which the Bank of Israel's account has not yet been credited.
       5. The system will create a fee for the crediting action in respect of the check.
       6. Flow chart of the process for a receipt in foreign currency by check for one the Bank’s customers



\* The reduced format alternative for same-day balance management is presented in the chart by a dotted line.

* + 1. **Endorsement of a bill of lading**
       1. A bill of lading is sent by the supplier or by the supplier’s bank to the Bank of Israel. The bank’s customer can release the shipment from the port only after endorsement of the bill of lading by the Bank of Israel for the benefit of its customer.
       2. When the Bank of Israel receives the bill of lading, a record is created.
       3. We note that the Bank's activities in this area are quite small, and amount to a few individual transactions per year.
       4. The proposed system will facilitate:
          1. The management of an automated form for recording and tracking endorsed bills of lading.
          2. Archiving of bill of lading documents with the details from the automated form.
          3. The automatic creation of a SWIFT message MT400 which includes a standard text and details of the endorsed bill of lading.
       5. Flow chart of the process of endorsement of a bill of lading



1. **List of the processes in shekels**
   1. **General actions that the system will perform in shekel activity for the Bank’s customers**
      1. The majority of the payments and receipts executed by the Bank’s customers in shekels are currently executed directly by them through the Masav or Stock Exchange clearing houses. The payments and receipts through the RTGS system and the Checks Clearing House are executed by the Bank of Israel. The Bank of Israel receives the results of the activity from the various clearinghouses (in file form) and debits/credits the accounts of its customers. In addition, the Bank of Israel serves as manual backup for the activity of its customers in shekels in times of emergency.
      2. The proposed system will facilitate the processes described below and will be flexible enough to accept changes, if there are any, in the banking services provided to the Bank’s customers.
      3. The management of balances of the Bank's customers is currently carried out in the Bank's bookkeeping system – GEM. Should the bank choose to implement the expanded format proposed within the framework of this tender, the banking services system will carry out balance management, as part of which it will receive details of the transactions and send the transactions to the Bank's bookkeeping system.
      4. The proposed system will facilitate:
         1. Automatic verifications during the input of a file of settlement results, which will be defined during the system specification process, such as: checking the balance, accounting entries, authorizations, etc.
         2. Controls and warnings that will be defined during the system specification process.
         3. The transfer of transactions to a transit account, according to the controls and criteria to be defined during the system specification process.
         4. Input and output of a file via interface from various sources to/from the banking services system, such as Masav (only in the expanded format), RTGS, the Electronic settlement system, etc., while carrying out modifications to the structure of the record in the banking services system.
         5. Generation of a list of returned credits/debits that have been moved to transit accounts for further handling.
         6. Return of mistaken transactions to Masav.
         7. Cancellation of transactions in the system that produces a storno command.
         8. Input of debit/credit notifications from clearing houses and other systems and SWIFT messages regarding payments and receipts, and their transfer by means of the interface to the account statements system.
         9. **Same-day** management of balances of the Bank's customers on a constant basis during the day, as part of which, balance management will be carried out online and an on-going indication of the customer balance status will be provided. **This section is relevant only for the reduced format.**
         10. Management of balances of the Bank's customers on a constant basis during the day, including the input of transactions in a detailed manner and transferring transactions to the Bank's bookkeeping system. Balance management will be carried out online and an on-going indication of the customer balance status will be provided. **This section is relevant only for the expanded format.**
         11. Attachment of a scanned check to the credit/debit transaction for that check.
   2. **Execution of Payment by the Bank’s customers by means of Masav /RTGS /Stock Exchange Clearing House /standing order**
      1. In this process, the Bank’s customer pays the beneficiary, who manages his account at a commercial bank or at the Bank of Israel. The following are the actions that the system will perform as part of the various payment options:
         1. Debiting of the Bank’s customer via the Stock Exchange Clearing House: The Bank’s customer executes transactions on the Stock Exchange. On business day T, the Stock Exchange Clearing House provides the detailed results of the settlement for the Bank’s customer to the Bank of Israel and the next day a net settlement of the settlement results is carried out through the RTGS system for day T+1.
         2. Debiting of the Bank’s customer in Masav: The Bank’s customer is an institution that participates in Masav. At the end of business day T, the Bank’s customer sends the financial transaction in a file to Masav for financial settlement. On business day T, Masav transfers details of the settlement results to the banks, including the Bank of Israel, and the following day, Masav carries out a net settlement of the settlement results on the individual bank level via the RTGS system for day T+1. See paragraph 5.4 below for a description of the management of direct debit instructions.
         3. Payment by means of a manual or automated entry (Masav or Zahav (RTGS)):
            1. The Bank’s customer submits a payment instruction to the Bank of Israel for manual entry via Masav or RTGS. The proposed system will be required to impose the following criterion: if the amount is up to NIS X, the payment will be carried out through Masav. If the amount exceeds NIS X, the payment will be carried out by means of the RTGS system. Within the framework of these criteria, the system will provide the user with controls and warnings. The system will facilitate deviating from the above conditions subject to the approval of an authorized user of the system. In the case of payment to the RTGS system, the payment transaction will be sent to the RTGS system online with a return feedback from the RTGS system to the banking services system, so that it will be possible to see this transaction with the feedback of its settlement online in the banking services system.
            2. Payment by means of a standing order (manual or automatic entry): The payment by standing order can be carried out manually by the Bank of Israel on the basis of a payment instruction (via Masav or RTGS – depending on the amount of the transaction) or automatically (via Masav only). For details regarding the standing orders, see Sections 4.2.4 - 4.2.5 above.
      2. Flow chart of the process for payments by the Bank’s customers in shekels



\* The reduced format alternative for same-day balance management is presented in the chart by a dotted line.

* 1. **Execution of a receipt for the Bank’s customers via Masav / the Stock Exchange Clearinghouse / RTGS**
     1. In this process, a customer of a commercial bank transfers funds to a customer of the Bank of Israel. The following are the actions that the system will perform as part of the various receipt possibilities:
        1. Crediting of the Bank’s customer via the Stock Exchange Clearinghouse: The Bank’s customer carries out a transaction on the Stock Exchange. On business day T, the Stock Exchange Clearinghouse transfers details of the results of the Bank customer's settlement to the Bank of Israel and the following day, on day T+1, there is a net settlement of the settlement results via the RTGS system.
        2. Crediting of the Bank’s customer via Masav: At the end of business day T, the commercial bank sends the financial transaction to Masav in a file for financial settlement. On business day T, Masav sends details of the results of the settlement to the banks, including the Bank of Israel, and the following day, on day T+1, Masav carries out a net settlement of the settlement results at the bank level using the RTGS system.
        3. Receipt by means of manual entry: The Bank of Israel receives an instruction from a commercial bank to debit the commercial bank and to credit a customer of the Bank of Israel using Masav (according to the account debiting authorization) or using the RTGS system. The system will be required to check the debit against the module of authorizations to debit a Bank of Israel account. If there is no authorization to debit the account, it will be transferred to the transit account and a warning will be issued accordingly.
        4. Receipt by means of the RTGS system: A commercial bank credits a customer of the Bank of Israel by means of the RTGS system. The receipt transaction will be sent to the banking services system online, such that it will be visible in the banking services system immediately upon its transfer.
     2. Flow chart of the process for receipts received by the Bank’s customers in shekels



\* The reduced format alternative for same-day balance management is presented in the chart by a dotted line.

* 1. **Authorized debit of an account of one of the Bank’s customers received from a commercial bank through Masav**
     1. In this process, the Bank’s customer provides authorization to a commercial bank to debit its account at the Bank of Israel. The commercial bank debits the account of the Bank’s customer according to the authorization and credits itself. At the end of business day T, the commercial bank sends a file to Masav for the execution of financial settlement. On business day T, Masav sends details of the settlement results to the banks, including the Bank of Israel, and the following day, on day T+1, Masav carries out a net settlement of the results at the bank level using the RTGS system.
     2. The proposed system will facilitate the generation of account debit authorizations, including controls, warnings, stoppages and reversals of debits in cases where debit instructions arrive without the appropriate authorization.
     3. The proposed system will check the debit against the module for authorizations to debit a Bank of Israel account. If there is no account debit authorization, a transfer will be made to a transit account and a warning will be issued.
     4. Flow chart of the process for payments by the Bank’s customers through an authorized debit in shekels



\* The reduced format alternative for same-day balance management is presented in the chart by a dotted line.

* 1. **Receipts received by the Bank’s customers by means of checks / manual instructions**
     1. In this process, a customer of a commercial bank pays a customer of the Bank of Israel by means of a check. The customer of the Bank of Israel deposits the check in his account at the Bank of Israel. The external source that receives the check from the Bank of Israel for electronic settlement creates a file of accounting entries for crediting the Bank of Israel’s customer, while at the same time transfering the electronic settlement file for settlement in the Check Clearinghouse. On day T+1, the Check Clearinghouse sends all the debits/credits of all the banks and the Bank of Israel to the RTGS system in net amounts for all the checks.
     2. In addition, there is a manual procedure for transferring manual instructions between the banks. These transactions are also transferred to the Check Clearinghouse, which uses the same process as described in the previous paragraph. The electronic settlement file is not part of this process.
     3. The proposed system will facilitate:
        1. Management of the checks in the banking services system, which will include, among other things: documentation of the check details, status management, tracking, warnings, controls, reports, etc.
        2. Verifying the checks in the interface with the NSF checks system when the check is entered into the system: identification of restricted accounts and provision of feedback on the results of the verification.
        3. Verifying the payer through the CNET (Amnet) system—the terror financing prevention system. For further details, see paragraph 11.1.8.
        4. Accepting photocopies of checks and displaying them in the system next to the financial transaction.
     4. Flow chart of the receipt process for the Bank’s customers by check / manual instructions in shekels



\* The reduced format alternative for same-day balance management is presented in the chart by a dotted line.

* 1. **Payments by the Bank’s customers by means of checks / manual instructions**
     1. In this process, a customer of the Bank of Israel makes a payment to a customer of a commercial bank by means of a check drawn on the Bank of Israel. The commercial banks transfer an electronic settlement file to an outsourcer, which creates a file of accounting entries for the debiting of the Bank of Israel customer. On day T+1, the Checks Clearinghouse sends a net debit/credit transaction for all the banks and the Bank of Israel for all the checks to the RTGS system.
     2. In addition, there is a manual process for transferring manual instructions between the banks, which are also submitted to the Checks Clearinghouse, which works according to the same process described in the previous Section. The electronic settlement file is not a part of this process.
     3. The proposed system will facilitate the verification of the check’s beneficiary against the CNET (Amnet) terror financing prevention system. For further details, seeSection 3.5 in Chapter 1 above.
     4. The proposed system will facilitate the acceptance of photocopies of checks and display them in the system next to the financial transaction.
     5. Flow chart of the payment process for the Bank’s customers by means of checks / manual instructions in shekels



\* The reduced format alternative for same-day balance management is presented in the chart by a dotted line.

* 1. **Return of check receipts of the Bank’s customers**
     1. In this process, a check that was settled as a debit of the customer of a commercial bank and as a credit of a customer of the Bank of Israel is returned by the commercial bank for reasons customary among the banks. The transaction for the return of the check is received from the banks in the form of an electronic file and is translated into accounting entries through the electronic settlement file. On day T+1, all the banks debit/credit one another by net amounts for all the checks in the RTGS system.
     2. Flow chart of the process for returning a receipt by check of the Bank’s customers in shekels



\* The reduced format alternative for same-day balance management is presented in the chart by a dotted line.

* 1. **Return of checks paid by the Bank’s customers**
     1. In this process, a check that was settled as a debit of the Bank of Israel customer and a credit of a customer of a commercial bank is returned by the Bank of Israel, for reasons customary among the banks. The transaction for the return of the check is received in the form of an electronic file and is translated into accounting entries through the electronic settlement file. On day T+1, all the banks debit/credit one another by the net amounts for all the checks in the RTGS system.
     2. Flow chart of the process for returning payments by check of the Bank’s customers in shekels



\* The reduced format alternative for same-day balance management is presented in the chart by a dotted line.

* 1. **Internal transfers between the accounts of the Bank’s customers**
     1. A transfer from the account of one of the Bank’s customers to that of another is carried out through one of two alternatives:
        1. By means of a file received from the electronic settlement system.
        2. Automated payment instruction received from the government.
     2. Flow chart of the process for internal transfers between accounts of the Bank’s customers in shekels



\* The reduced format alternative for same-day balance management is presented in the chart by a dotted line.

* 1. **Payments/receipts of the Bank’s customers from the Bank of Israel as a supplier/customer**
     1. The Bank of Israel cashier executes the Bank’s payments to suppliers by means of the SAP system. This process deals with payments to customers of the Bank (a customer of the Bank as a supplier of the Bank of Israel) and with receipts from the Bank’s customers.
     2. The banking services system will input credit/debit transaction files of the accounts of the Bank’s customers through the interface with the SAP system.
     3. The banking services system will return account statements to the SAP system through the interface.
     4. Flow chart of the process of payments/receipts of the Bank’s customers from the Bank of Israel as a supplier/customer in shekels



\* The reduced format alternative for same-day balance management is presented in the chart by a dotted line.

* 1. **Closing accounts of the Bank’s customers**

**The function of closing accounts is relevant only to the expanded format, where the account balances of the Bank's customers are managed in the proposed system.** Within this framework, the proposed system will enable the closing of accounts, inter alia as follows:

* + 1. At the end of a particular period (day, month or year) the balance from transactions recorded in an account will be moved to a different (“main”) account. The automatic transfer of the balance of one account to another account at fixed intervals will be called “closing of accounts”.
    2. A closure will be carried out after the updating of the account balances from all sources as of the day of closure.
    3. Enabling the possibility of choosing to close an account with a balance in debit only or in credit only or without any restriction on whether the balance is in debit or credit.
    4. The closures will be carried out at a fixed interval to be decided upon: daily, monthly or yearly. In addition, it will be possible to close accounts as of a particular date with the possibility of the user choosing whether this occurs at a fixed interval or on a one-time basis.
    5. Each type of closure will have two stages. During the first, accounts are closed to Level A accounts. In the second stage, Level A accounts are closed to Level B accounts.
    6. The order of closures is as follows: daily value, monthly value, annual value, daily current, monthly current and annual current. The two stages of closure described in the previous Section are carried out for each type of closure. For annual value and current closures, there is also a third round.
    7. The system will facilitate the recording of a range of accounts and the possibility of defining criteria for excepting accounts that are within the range of accounts or limiting the closure to accounts with a debit/credit balance.
    8. The system will enable the definition of closures for a range of dates according to floor and ceiling dates as defined below:
       1. Floor date: a date beyond which the relevant closure will be executed.
       2. Ceiling date: A threshold date until which the closure will be executed, and beyond which no closure will be executed.
    9. Flow chart of the process for closing accounts of the Bank’s customers



* 1. **Generation of balance confirmations for the accounts of the Bank’s customers**
     1. Generation of balance confirmations from a designated system for generating balance confirmations (the balance confirmation system that exists at the Bank). Should **the inter-day balance management** be done in the banking services system (the expanded format), the balances will be sent from the banking services system to the balance confirmation system for the purpose of generating balance confirmations, and the relevant controls will be applied. If only **same-day balance management** is done (the reduced format), the balances will be sent from the Bank's bookkeeping system to the balance confirmation system for the purpose of generating balance confirmations.
     2. Flow chart of the process for generating confirmations of the account balances of the Bank’s customers



\* The reduced format alternative for same-day balance management is presented in the chart by a dotted line.

* 1. **Calculations of interest on the balances of the Bank’s customers**
     1. **Option 1:** Calculation of interest will be done in a designated interest calculation system (the interest system that already exists at the Bank). If **inter-day balance management** is done in the banking services system (the expanded format), the balances and transactions will be sent from the banking services system, to the interest system, which will calculate the interest on the end-of-day balances and the transactions of the Bank’s customers. Following that, the banking services system will receive the amounts of the calculated interest from the interest system. If only **same-day balance management** (the reduced format) is done, the balances and transactions will be sent from the Bank's bookkeeping system to the interest system, which will calculate the interest on the end-of-day balances and the transactions of the Bank's customers.
     2. **Option 2:** Calculation of interest within the banking services system.

If **inter-day balance management i**s done within the banking services system (the expanded format), the balances and transactions will be managed in the banking services system, and the system will calculate the interest on the end-of-day balances and transactions of the Bank's customers. If only **same-day balance management** (the reduced format) is done, the balances and transactions will be sent from the Bank's bookkeeping system to the interest system, which will calculate the interest on the end-of-day balances and transactions of the Bank's customers. As part of this process, the proposed system will facilitate:

* + - 1. Automatic updating of interest rate tables from the Bank’s tables for the purpose of interest calculations – indices, the Bank of Israel interest rate, the prime interest rate, the LIBOR rate, etc.
      2. Various interest calculations and flexibility to define new interest calculations.
      3. Calculation of a daily interest rate on all balances of the Bank’s customers that are in debit and/or credit – daily, monthly, quarterly and annual interest with/without indexation.
      4. The execution of a retroactive calculation for transactions with a retroactive value date, in respect of a retroactive update of the interest rates and according to the user's determination.
      5. Calculation of interest in various currencies, including calculation in a particular currency and crediting / debiting the account in a different currency.
      6. Full flexibility in determining the accounts for debiting and crediting interest, the calculation dates, the accounting execution and the value date of interest transactions.
      7. Calculations of compound interest on retroactive transactions for closed periods.
      8. Recording of interest accruals for interest receivable/payable from/to the Bank’s customers at the account level.
      9. Recording of interest as a debit/credit to the accounts of the Bank’s customers under various payment methods.
      10. Flow chart of the process for calculation of interest on the balances of the Bank’s customers



**\* The reduced format alternative for same-day balance management is presented in the chart by a dotted line.**

**\*\* Option A is displayed in the chart with a thick arrow.**

**Chapter 4: Technological Requirements**

A more detailed version of this Chapter will be provided at the bidders' conference that will be held at the Bank.

1. The current situation
   1. Servers
      1. Unix servers – Oracle servers with the Solaris operating system.
      2. Intel servers
         1. Windows 2008 R2 operating system and above.
         2. Use of virtual servers by means of the hyper-v technology.
         3. The Bank may be using other virtualization tools in the future.
   2. Databases
      1. Oracle (main current database for critical systems)
      2. Microsoft SQL 2008 Enterprise Edition
      3. Development tools:
         1. Oracle IAS
         2. The Bank is considering the installation of the Weblogic product as a replacement for IAS.
         3. Microsoft.NET version 4.
   3. Command and control:
      1. Existing tools:
         1. SUNMC for the SUN system only.
         2. Monitoring tool for Oracle and GRID infrastructures.
         3. Central command and control tool.
   4. Production management system:
      1. BMC Control-M.
   5. Data storage:
      1. The storage arrays at the Bank are produced by EMC.
      2. Data array tools are used to make local and remote transparencies.
   6. Description of end user station:
      1. Standard computer specification

|  |  |
| --- | --- |
| Manufacturer | Lenovo |
| Model | ThinkCentre M91p |
| Processor technology | Intel Core i5 2nd Gen |
| Processor strength | 2400 3.1Ghz 6MB Cache |
| Chipset | Intel Q67 Express |
| Internal memory | 4GB |
| Number of memory slots | 4 |
| RAM | 3DDR |
| Speed | MHz1333 |
| Support for memory volume | 16GB |
| Built-in screen card | INTEL® HD GRAPHICS |
| PCI slots  (also for SFF unless noted otherwise) | 2 – PCI  1 - PCI Express X1  1 - PCI Express X16 |
| Built-in network card | 10/100/1000 |
| PS/2 mouse connection | 1 |
| PS/2 keyboard connection | 1 |
| Screen port | VGA, Display Port |
| Active rear USB 2.0 ports | 6 |
| Active front USB 2.0 ports | 2 |
| Hard drive – technology | SATA 3 |
| Hard drive - volume | GB250 |

* + 1. Operating system: Win7 Pro
    2. Screen: Fujicom 24" LED
    3. Each work station at the bank will include no less than:
       1. 2 GB RAM
       2. A hard drive no smaller than 80 GB
       3. A dual 2.2 processor
  1. Data backup
     1. The bank makes use of Veritas Netbackup which backs up the Bank’s servers at the various sites.
     2. The software operates on a client-server configuration.
  2. Transfer of files and interfaces within the Bank’s systems:
     1. The Bank uses CA-XCOM for transferring files.
     2. The Bank uses the MQ product from IBM for the transfer of messages.
  3. Exchange of files with external entities:

The Bank uses a virtual safe room produced by the Cyber-Ark company.

* 1. Links to SWIFT:
     1. The Bank' uses the following systems for managing and transporting SWIFT messages: Sungard's MINT system for FIN messages, and the Arkelis AMH (Alliance Messaging Hub) system for Interact and Fileact messages.
     2. The current foreign trade system works in an MF environment.
     3. The input and output between the MINT system and the current foreign trade system is through messages in the standard SWIFT FIN format. Outgoing messages (from the foreign trade system to SWIFT) are structured in the SWIFT FIN format in the foreign trade system itself.
  2. Local survivability at the production site:
     1. Some of the critical servers at the Bank have local survivability (active-passive).
     2. The management of survivability is by means of the Veritas Cluster system.
  3. Disaster recovery:
     1. The Bank maintains a secondary site in the central region of the country.
     2. For every critical server, there is a parallel server at the DR site.
     3. The mirroring at the DR site is accomplished by means of the communication network or by means of the storage array.

1. **Infrastructure requirements of the system**
   1. General:
      1. Sizing – The company will carry out mapping and evaluation with the business entities in the Bank in order to submit recommendations for sizing of the hardware to meet the performance and load requirements on the business side.
      2. The system will support the existing file and message transfer interface at the Bank (Xcom and MQ).
      3. The bidder will provide evaluation charts and tools for carrying out acceptance tests and load tests.
      4. The bidder will provide a solution for the management of historical data with a definition of ranges according to the Bank’s needs.
      5. The bidder will provide an auditing mechanism that enables historical tracking of all activity in the system including batch processes.
      6. Support of the Citrix Terminal Client.
   2. Databases:
      1. The system will support the use of an Oracle11gr2 database.
      2. It will be the responsibility of the supplier to ensure the updating and upgrading of the system for the support of future Oracle versions.
      3. The supplier can propose the use of the current and up-to-date Microsoft SQL as an alternative to Oracle, subject to the exclusive discretion of the Bank.
      4. The installation of the database software (Oracle or SQL) will be carried out according to the Bank’s existing standards, including:
         1. Filenames.
         2. Location of database files.
         3. Archiving methods.

The above will be accomplished in coordination with the Bank’s DBA staff and with its approval.

* + 1. The database to be built as part of the project will be accessible for maintenance and upkeep by the DBA staff.
    2. The bidder will provide a mechanism for data transfer from a production environment to testing and development environments, including mechanisms for data masking in order to prevent the exposure of sensitive data to unauthorized entities in the testing environment.
    3. Support for Hebrew data in the database is required.
  1. Command and control: The system will interface with the main command and control product serving the Bank.
  2. Management of production and batch jobs:
     1. The system will facilitate batch jobs by means of Control-M.
     2. The batch jobs carried out in the system will return a completion code to the operating system on conclusion, which will allow the monitoring of their proper process by the existing production management product at the Bank.
     3. The system will facilitate the running of batch processes under appropriate system user codes without the need for including passwords in the batch programs.
     4. The batch processes will produce clear indications and error messages for the diagnosis of problems by operational staff at the Bank.
  3. Data storage:

The system will support working with the leading storage arrays in general and with EMC arrays in particular.

* 1. Data backup:

The system will support the use of state-of-the-art backup technologies including de-duplication and disc backup.

* 1. Transfer of files and messages:

The system will support working with files as well as the transfer of messages by means of IBM MQ.

* 1. Interfacing with SWIFT:
     1. The system will be a “Qualified SWIFT product” including full support of:
        1. All types of SWIFT FIN messages in the categories detailed in Section 2.3.5 of Chapter 2 of this document, in the MT and MX formats.
        2. Full support of annual updates made by the SWIFT Company to messages – “SWIFT Standard Release”.
        3. Full support for the installation of the SWIFT BICPlusIBAN directory and the installation of BankDirectoryPlus in the system.
        4. Commitment to support new SWIFT services and upgrades in the future.
     2. Support of STP (Straight-through Processing) of incoming and outgoing SWIFT messages.
     3. The interface with the SWIFT message management system (such as MINT, SAA, AMH) by means of IBM MQ Series.
     4. Displaying of SWIFT messages in the system on structured format screens, including field titles.
     5. Archiving and search of SWIFT messages by various fields.
     6. Validation testing of the messages:
        1. Correct SWIFT format.
        2. Duplication check.
     7. Planning and implementation of the interface of the SWIFT systems with additional Bank suppliers (such as the Arkelis Company) as needed.
  2. Local and remote survivability:
     1. The system will include routines that can be operated by system tools before the creation of local and remote consistent copies.
     2. The system will support working with the Veritas Cluster.
     3. The system will include a mechanism for recovery after a disruption.

1. **Information that the companies are requested to provide as part of the tender** 
   1. General:
      1. An architecture document of the product including interfacing with the SWIFT system (if it exists).
      2. Description of the recommended/required work environments at the production site and at the DR site.
      3. Description of supported and recommended platforms (operating systems).
   2. Databases:
      1. A description of the recommended and supported databases in general, and in relation to the Oracle and Microsoft SQL alternatives in particular, including versions.
      2. A description of recommended and supported application servers and tools.
      3. A description of mechanisms for copying between environments.
   3. Command and control:

A list of supported command and control tools.

* 1. Data storage:

A description of the required actions to be carried out before and after the creation of local and remote copies using storage array tools (clones and snapshots).

* 1. Data backup
     1. A description of the types of backup required and the actions required prior to and following the backup process according to the different types required.
     2. If a designated agent of the Veritas Netbackup is needed, this should be stated.
  2. The company will provide details of the existing mechanisms in the product, and the proposed configuration that will enable recovery at the local and DR site.

1. **Technological requirements for information security**
   1. Security hardening of the operating system

The operating system on the server will be hardened by the Bank, according to the Bank’s best practices definitions. The winner of the tender (hereafter: the “winner”) will specify any constraint on these security hardening guidelines.

* 1. Communication definitions: protocols, ports, agents, etc.

The Bank will make use of a firewall in order to prevent sign-ons from unauthorized addresses and from unauthorized ports to and from the server. The winner will describe which protocols and which ports will be used in the system, in order to supervise access to and from the system.

* 1. Authentication: use of 2-Factor Authentication of an application

The system will make use of two of the following three factors:

* + 1. Password.
    2. OTP/Token.
    3. Biometric identification.

The winner will describe the manner in which the system will meet these requirements.

* 1. Access to the databases

Access to the databases must be controlled by means of rules in the databases. Authorizations in the databases will be categorized by function or groups according to applicative functions. Use of the system will not be permitted under “strong” users, such as: sa, system, sys, root, etc.

* 1. Database security

The information in the databases will be secured in order to prevent unauthorized access. The winner will describe how this requirement is to be met for the system’s databases (such as use of security services in the databases, access to partial information at the row/column level, etc.).

* 1. Administration of users

The system will enable the external administration of users, through a central user administration system – ITIM (IBM Tivoli Identity Management). This will be accomplished through database roles or LDAP groups. Users will be assigned to their authorizations in the application or in the databases using the ITIM. The system will also enable the ITIM to administer the synchronization of passwords, i.e. a process in which the ITIM changes the user passwords in all the environments at fixed intervals.

* 1. Logs, indications and investigative tools – The system will produce logs and warnings for the following:
     1. Opening and closing of sessions.
     2. Sensitive business activities in the system (according to the definitions of business entities within the Bank).
     3. A change in user authorizations.
     4. Unauthorized access to the system.
     5. Maintenance of the database.
     6. Suspension of a user.
     7. Services and processes for which a shutdown or restart was carried out.
  2. Remote support for the system

The Bank network is completely closed to the Internet. This means that no remote access to the system will be permitted to the manufacturer for purposes of maintenance. The winner will explain how he will carry out the maintenance of the system without remote access.

* 1. Links to external information sources (such as Reuters, Bloomberg, etc.)

The winner will explain the nature of the links to external sources of information (protocols, ports, etc.) and will describe the required means of security for protecting the communication with them.

* 1. Access to the system

Access to the system will be by means of a secure and encoded link. The encoding must be not only at the network level but also at the application level. If use is made of web server technology, the aforementioned should be applied by means of HTTPS protocol. Otherwise, the winner will describe his solution for a secure link.

* 1. Information security guidelines

The launch of the system will be conditional on the approval of Information Security at the Bank of Israel, as with any other information system installed at the Bank. The winner will be required to comply with all instructions from Information Security during the project, even if they do not appear in this document. Compliance with the instructions of Information Security will be a condition for the launch of the system and non-compliance will be considered a violation of the agreement with the Bank.

* 1. Digital signature

Financial messages must be signed digitally and must be tested by the settlement system downstream with respect to their validity. The signature will be implemented according to the following requirements:

* + 1. Symmetric encoding: AES, 3DES.
    2. Asymmetric encoding: Elliptic curve, Diffie-Hellman, DSA, RSA.
    3. Hash functions: SHA-512, SHA-384, SHA-256.
    4. Key strength: 2048 bits.

Storage of the key:

1. The key will be stored in a separate library that only the application user has authorization for.
2. The key will be protected by a 17-character password that will include letters, numerals and special characters (!,@,#,$,%,^,&,\*). The password will not contain successive or repeated letters or numbers.
   1. Saving of outgoing messages

The system will access and save copies of outgoing messages from the MINT system (the intermediary system to SWIFT). In addition, the system will enable a comparison of these copies and the original messages that left the system to MINT. The purpose of the foregoing will be to enable a comparison between messages leaving the system and actual messages dispatched to the SWIFT network.

**Appendix D1 – List of SWIFT messages used at the Bank of Israel**

* + - 1. In general, the system will be required to support any new message required for a business activity, of the types 3XX, 2XX, 9XX, 1XX, 7XX, and 4XX.
      2. **Incoming messages**
  1. 103 –Bank-customer financial transactions that receive both a SWIFT code and text that identifies the bank. Entry of a message of this type generates a receipt instruction in the foreign trade system that is ready for approval. The details of the sender of the message and the beneficiary that appeared on the incoming message are recorded in this format for sending an outgoing message. The following are two examples:
     1. Receipt for a government ministry: In this case, a receipt instruction is generated that does not generate an outgoing message, but rather an accounting entry only (in the Bank's books), which debits the bank that sent the message and credits the government ministry.
     2. Receipts for transfer to beneficiaries: In this case, a payment instruction is generated, which in turn generates two outgoing messages – 103 and 202cover:
        1. 202cover message – A financial transfer that is sent to a bank abroad, in which the bank of the Israeli beneficiary maintains an account in foreign currency. The details of the sender are attached to this message.
        2. Outgoing message 103 – Sent to the bank of the Israeli beneficiary, informing him that the money has been transferred for him to his account in the bank abroad.
  2. 103+: Bank-customer financial transfers that receive a SWIFT code only. Paragraph 3.1.1.1 applies here as well.
  3. 195: Enquiry regarding messages of the 1xx series, which quotes a message. For example, when a bank receives a financial transfer from another bank that is missing beneficiary details, the bank that receives the funds sends message 195 in order to clarify the details of the beneficiary, which relates to the message that it received.
  4. 196: A response to an enquiry regarding messages of the 1xx series that quotes a message. For example, when message 195 is received, as described in the previous Section, the bank that received it responds using message 196 and quotes the message it received.
  5. 199: Free text format regarding messages of the 1xx series. Anything can be written in a message of this type. In theory, this message can also be used to request the transfer of funds, but banks don't generally do this, using messages 202/103 for the transfer of funds.
  6. 202: Bank-bank financial transfers. This message is like message 103 (see Section 3.1.1.1), except that it is addressed to financial institutions only. A message 202cover is not generated by this message.
  7. 295: Enquiry regarding messages of the 2xx series, which quotes a message. The nature of this message is identical to what is described in Section 3.1.1.3.
  8. 296: A response to an enquiry regarding messages from series 2xx, which quotes a message. The nature of this message is identical to what is descried in Section 3.1.1.4.
  9. 299: Free text format regarding messages in the 2xx series. Anything can be written in this type of message.
  10. 399: Free text format for messages in the 3xx series (conversions and deposits). For example, when a correspondent of the Bank of Israel abroad requests the crediting of an Israeli beneficiary in shekels, it requests in this message that shekels be purchased through the crediting of a bank account in Israel in foreign currency and in exchange to credit his account at the Bank of Israel. At the same time, he sends a message of type 103 for the transfer of the shekels to the beneficiary.
  11. 400: Notification to a supplier abroad that a bill of lading has been endorsed and payment has been carried out to the supplier. During the last year, no such messages have been received by the Bank of Israel.
  12. 410: A notification from the correspondent abroad of the receipt of a check sent for the crediting of the Bank of Israel's account at the correspondent.
  13. 456: Notification of the return of a check. For example, when a bank receives a check for the crediting of a beneficiary but there is a problem with the details of the check, the bank sends this message which provides notification of the return of the check.
  14. 700: Issue of a letter of credit to an importer.
  15. 705: Notification of the opening of a letter of credit.
  16. 707: Amendment of a letter of credit.
  17. 730: Approval regarding a letter of credit.
  18. 734: Notification to a bank of a refusal to pay as a result of inconsistencies found during verification of the letter of credit documents.
  19. 740: A request from a correspondent abroad to receive a demand for future payment from an exporter and to honor it.
  20. 752: Provision of authorization to the exporter's bank to debit the Bank of Israel’s account with it, even when this involves a delayed payment.
  21. 754: Demand for payment in respect of a letter of credit or a notification of reservations.
  22. 756: Notification of payment of a letter of credit.
  23. 760: Issue of guarantees or a standing letter of credit.
  24. 767: Notification of a reduction in a guarantee.
  25. 768: Notification of changes in a guarantee.
  26. 799: Free text format for messages in the 7xx series.
  27. 900: Debit notification that informs an account owner of the debit of his account. For example, a debit for bank fees.
  28. 910: A credit notification informing the owner of an account of the crediting of his account. For example, if another party carries out a bank transfer to the account of the customer, a notification is sent to the customer informing him of the crediting of his account.
  29. 999: A free text format that is not encoded. This format can relate to any message and anything can be written in it.

1. **Outgoing messages**

In general, the types of incoming SWIFTs in the area of foreign trade are parallel to the types of outgoing SWIFTs. An exception is the 202cover type of message, which the Bank of Israel issues in the course of its activities, though it does not receive this type of message. See the explanation and examples of SWIFTs in paragraph 3.1.1.

* 1. 103: Bank–customer financial transfers that receive both a SWIFT code and text that identifies the bank.
  2. 110: A message that is sent to a correspondent of the Bank of Israel abroad, where the beneficiary will redeem the check. The message provides the details of the check.
  3. 192: A message that cancels a message sent on that day.
  4. 195: An enquiry regarding messages of the 1xx series, which quotes a message.
  5. 196: A response to an enquiry regarding messages of the 1xx series, which quotes a message.
  6. 199: A free text format regarding messages of series 1xx.
  7. 202: Bank-bank financial transfers.
  8. 202cover: A financial transfer that provides information on the final beneficiary that is credited in an outgoing message 103, which is sent together with a 202cover message.
  9. 295: Enquiry regarding messages of the 2xx series, which quotes a message.
  10. 296: A response to an enquiry regarding messages of the 2xx series, which quotes a message.
  11. 299: Free text format regarding messages of the 2xx series.
  12. 399: Free text format regarding messages of the 3xx series (conversions and deposits).
  13. 400: Notification to a supplier abroad of the endoresement of a bill of lading and payment to the supplier.
  14. 700: Issue of a letter of credit to an importer.
  15. 705: Notification of the opening of a letter of credit.
  16. 707: Amendment of a letter of credit.
  17. 730: Approval regarding a letter of credit.
  18. 734: Notification to a bank of a refusal to pay as a result of inconsistencies found during verification of the letter of credit documents.
  19. 740: A request from a correspondent abroad to receive a demand for future payment from an exporter and to honor it.
  20. 752: Provision of authorization to the exporter's bank to debit the Bank of Israel’s account with it, even when this involves a delayed payment.
  21. 754: Demand for payment for a letter of credit or a notification of reservations.
  22. 756: Notification of payment of a letter of credit.
  23. 760: Issue of guarantees or a standing letter of credit.
  24. 767: Notification of a reduction in a guarantee.
  25. 768: Notification of changes in a guarantee.
  26. 799: Free text format for messages of the 7xx series.
  27. 900: Debit notification.
  28. 910: Credit notification.
  29. 999: A free text format that is not encoded.

**Appendix D2 – List of commercial banks participating in the RTGS system (shekels)**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |
| **#** | **Bank code** | **Account code in main bookkeeping** | **Name of bank** | **SWIFT code in Israel** |  |
| 1 | 9 | 1337010001097 | Postal Bank Company | IPOAILIJXXX |  |
| 2 | 4 | 1340010001047 | Bank Yahav | BYAHILI1XXX |  |
| 3 | 10 | 1340010001101 | Bank Leumi | LUMIILITXXX |  |
| 4 | 11 | 1340010001110 | Discount Bank | IDBLILITXXX |  |
| 5 | 12 | 1340010001128 | Bank Hapoalim | POALILITXXX |  |
| 6 | 13 | 1340010001136 | Union Bank of Israel | UNBKILITXXX |  |
| 7 | 14 | 1340010001144 | Bank Otsar Hahayal | OTSHILITXXX |  |
| 8 | 17 | 1340010001179 | Mercantile Discount Bank | BARDILITXXX |  |
| 9 | 20 | 1340010001209 | Bank Mizrahi-Tefahot | MIZBILITXXX |  |
| 10 | 22 | 1340010001225 | Citibank | CITIILITXXX |  |
| 11 | 23 | 1340010001233 | HSBC | HSBCILITXXX |  |
| 12 | 26 | 1340010001268 | U-Bank | IGBTILITXXX |  |
| 13 | 31 | 1340010001314 | First International Bank | FIRBILITXXX |  |
| 14 | 34 | 1340010001349 | Arab Bank | ARISILI1XXX |  |
| 15 | 46 | 1340010001462 | Bank Masad | MASBILI1XXX |  |
| 16 | 52 | 1340010001527 | Bank Poalei Agudat Yisrael | PAGIILITXXX |  |
| 17 | 54 | 1340010001543 | Bank of Jerusalem | JERSILITXXX |  |
| 18 | 68 | 1340010001683 | Dexia | OTHHILI1XXX |  |
| 19 | 39 | 1340010001390 | State Bank of India | SBINILITXXX |  |

**Appendix D3 – Structure of the original GEM record**

1. Structure of the original GEM record – transaction record

| **Name of field** | **Length** | **Type** | **Position** | **Field in SWIFT MT103** | **Field in SWIFT MT202** | **Comments** |
| --- | --- | --- | --- | --- | --- | --- |
| Type of record | 1 | N | **1-1** |  |  | 1 – regular |
| Date of entry | 8 | N | **2-9** |  |  | Date of processing |
| Department making the entry | 2 | N | **10-11** |  |  | According to the list of departments in Table 10 in GEM |
| Source code | 2 | N | **12-13** | 20 | 20 | According to the list of sources in Table 10 in GEM |
| Sub-batch | 3 | N | **14-16** | 20 | 20 | According to the list of Sub batches in Table 1 in GEM. |
| Reference | 5 | N | **17-21** | 20 | 20 | 00xxx – numerator in a series on the date and sub batch levels. |
| Type of reference | 1 | N | **22-22** |  |  | 2 – if there are 2 lines in the ledger entry / 3 – if there are more than 2 lines in a ledger entry. |
| Company  Ledger – main | 4 | A | **23-26** |  |  | "In NIS" |
| Main account number | 20 | A | **27-46** |  |  |  |
| Company  Ledger –  contra | 4 | A | **47-50** |  |  | "In NIS" |
| Contra account number | 20 | A | **51-70** |  |  |  |
| Value date | 8 | N | **71-78** | 32A | 32A | YYYYMMDD |
| Balance sheet date | 8 | N | **79-86** |  |  | 00000000 (not to be filled in in the original) |
| Type of activity | 1 | A | **87-87** |  |  | C – credit, D - debit |
| Amount in credit | 15.2 | N | **88-104** | 32A | 32A | Absolute number, without a decimal point |
| Amount in debit | 15.2 | N | **88-104** |  |  | Absolute number, without a decimal point |
| Storno | 1 | A | **105-105** |  |  | “ “ – regular, “-“ – storno |
| Transaction description code (TDC) | 3 | A | **106-108** |  |  | According to a transaction description code query in GEM |
| Description of the transaction – according to TDC | 20 | A | **109-128** |  |  | To be filled in automatically according to the TDC number |
| Indicator of reconciliation differences A | 1 | A | **129-129** |  |  | “ “ |
| Linkage date | 8 | N | **130-137** |  |  | YYYYMMDD |
| Transaction exchange rate | 5.4 | N | **138-146** |  |  |  |
| Ledger entry indicator | 2 | A | **147-148** |  |  | Not relevant |
| Description of ledger entry | 5 | A | **149-153** |  |  | According to the type of activity |
| Ledger entry number | 12 | A | **154-165** |  |  | According to the type of activity |
| Sub-description of ledger entry | 5 | A | **166-170** |  |  | According to the type of activity |
| Sub-number of ledger entry | 12 | A | **171-182** |  |  | According to the type of activity |
| Identification of ledger entry | 16 | A | **183-198** |  |  | According to the type of activity |
| Original value date | 8 | N | **199-206** |  |  | 00000000 (not to be filled in in the original) |
| RTGS – customer details – IBAN – in credit | 23 | A | **207-229** | 59 | 57 | Relevant for RTGS activities |
| RTGS – customer details – IBAN – in debit | 23 | A | **207-229** | 50 | 53 | Relevant for RTGS activities |
| RTGS – name of customer – in credit | 35 | A | **230-264** | 59 | 57 | Relevant for RTGS activities |
| RTGS – name of customer – in debit | 35 | A | **230-264** | 50 | 53 | Relevant for RTGS activities |
| RTGS - TTC | 3 | A | **265-267** | 72 | 72 | Relevant for RTGS activities |
| RTGS – time limit | 3 | N | **268-270** |  |  | 00000000 (not relevant) |
| RTGS – details – in credit | 26 | A | **271-296** | 72 | 72 | Relevant for RTGS activities |
| RTGS – details – in debit | 26 | A | **271-296** |  |  | Relevant for RTGS activities |
| User field  \*(see appendix) | 80 | A | **297-376** |  |  | See appendix |

Total: 376

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  |  |  |  |  |

1. Structure of the original record in GEM – leading record

| **Name of field** | **Length** | **Type** | **Position** | **Comments** |
| --- | --- | --- | --- | --- |
| Type of record | 1 | N | **1-1** | 6 - leading |
| Date of record | 8 | N | **2-9** | Date of processing |
| Department making the entry | 2 | N | **10-11** | 03- Accounting |
| Source code | 2 | N | **12-13** | According to the list of sources in Table 10 in GEM. |
| FILLER | 1 | A | **14-14** |  |
| RTGS – work method | 3 | A | **15-17** | Relevant for RTGS activities |
| RTGS – Feedback method | 3 | A | **18-20** | Relevant for RTGS activities |
| RTGS – feedback format | 3 | A | **21-23** | Relevant for RTGS activities |
| FILLER | 353 | A | **24-376** |  |

Total: 376

1. Structure of original record in GEM – concluding record

| **Name of field** | **Length** | **Type** | **Position** | **Comments** |
| --- | --- | --- | --- | --- |
| Type of record | 1 | N | **1-1** | 7 – Concluding |
| Date of record | 8 | N | **2-9** | Date of processing |
| Department making the entry | 2 | N | **10-11** | 03 – Accounting |
| Source code | 2 | N | **12-13** | According to the list of sources in Table 10 in GEM |
| Number of transactions | 5 | N | **14-18** |  |
| Total of debts and balances | 16.2 | N | **19-36** | Gross total, without a decimal point |
| FILLER | 340 | A | **37-376** |  |

Total: 376

**Comments to some of the fields:**

1. The field “reference number” was expanded from 3 to 5 positions. In the first stage, we will continue to input three positions into the reference field, with the first two positions always taking 00.
2. The field “type of reference” now has type “2” which will be used in cases where the source provides two ledgers of the simple reference. Type “1” – a simple one-ledger reference and Type “3” – a complex reference, remain as in the past.
3. The “SWIFT” field – was an independent field in the old structure; in the new structure, it will be part of the “record entry”.
4. The “type of activity” field – must have C or D entered and not F or G as in the past.
5. The “amount” field – has been enlarged to 15.2 in absolute amount without a decimal point. The “type of activity” field will identify the direction of the amount.
6. The “storno” field – Allows the entry of a true storno transaction and not a correction by switching the sign. In the first stage “ “ (empty) will be entered in the field.
7. The “transaction description code” field – will also be according to TDC. The TDC table and the descriptions of the transactions will be located in Consist. There is no obligation to work according to TDC. Either a description or the TDC should be entered, not both.
8. The “indicator of reconciliation differences A” field – will be used for specifying the need to create reconciliation differences A. The routine for reconciliation differences will work according to the following parameters:

“ “ = does not need reconciliation differences A (default).

“0” = the source did not send reconciliation differences A and there is a need to generate.

“1” = the source sent reconciliation differences A and there is no need to generate.

In the first stage, “ “ (empty) will be entered into the field.

1. Ledger entry – the structure will consist of 6 fields:
   1. Indicator of a ledger entry: type of interest, type of check, type of tender, type of SWIFT, etc.
   2. Description of the ledger entry: “check”, “tender”, “SWIFT”, etc.
   3. Ledger entry number: “3527193”, “6123”, “SWIFT number”, etc.
   4. Sub-description of the ledger entry: “interest”, etc.
   5. Sub-number of the ledger entry: interest rate, forced conversion rate, etc.
   6. Identification of the ledger entry: original reference, sender instruction in SWIFT, etc.
2. “RTGS” fields – are intended for entering details of a customer for debiting and also for identifying activity codes in the RTGS system.
3. The “user field” field – will be used for additional and special needs of the departments in cases where the standard structure is insufficient. In these cases, there is a need to coordinate the division of the field with the Accounting Division.
4. Regarding a leading record, it may be that in the future additional positions will be used, from within the FILLER field, for the identification of the work method with regard to BOI.
5. Company Ledger – in the main account and in the contra account – most of the transactions in the system are sent to the “heshev” company. In cases where the transactions are designated for a different company (assets = "hshvn" or makbalim = "hshvm") in the main or contra accounts, the Accounting Division will send the list of accounts for the aforementioned companies to the department.
6. Company Ledger – in the contra account – in cases where the contra account is fictitious (there may only be references of type 2 and 3), ‘ ‘ (empty) is to be entered in the field. A fictitious account is one that does not exist in the system and the sub-category = “99” and/or the depositor = “9999”.