



ANNOUNCEMENT

OPEN TENDER WITH THE REFERENCE NUMBER “CBA-2025-064” FOR ACQUISITION OF A REAL-TIME GROSS SETTLEMENT (RTGS) SYSTEM FOR THE NEEDS OF THE CENTRAL BANK OF THE REPUBLIC OF ARMENIA

ABOUT THE CLARIFICATION OF THE INVITATION Nr. 2

This text of the announcement is published in accordance with Article 29 of the RA Law "On Procurements".

The Central Bank of the Republic of Armenia (the CBA) presents below the questions and clarifications dated 09.02.2026 regarding the invitation to the procurement procedure with the code "CBA-2025-064" organized for the purpose of acquiring “A *REAL-TIME GROSS SETTLEMENT (RTGS) SYSTEM*” for the needs of the Central Bank of the Republic of Armenia.

1. QUESTION FOR CLARIFICATION

Request for technical information regarding the maximum email size for the submission documentation.

CLARIFICATION

As per point 3.6. of the invitation (Reference No. CBA-2025-064) the total size of the email, including attachments, **must not exceed 25MB**. Bidders are responsible for ensuring that their electronic submissions comply with this limitation.

If the files exceed the file size limit, the submission may be split into multiple emails, each clearly labeled (e.g., 'Part 1 of 3,' 'Part 2 of 3,' etc.).

2. QUESTION FOR CLARIFICATION

Request to provide the list of expected interfaces with CBA internal systems for the following section of the Invitation:



“The Payment Engine must support message exchange with internal systems (e.g. Core Banking and other CBA systems) using both ISO 20022-AM and non-ISO 20022-based XML formats according to predefined templates”.

CLARIFICATION

For integration with the Core Banking System, the CBA follows an API first approach, so interactions will be mostly API based. However, there may be specific processes that require the exchange of ISO messages in order to minimize the impact on existing workflows. The RTGS is expected to integrate with the Core Banking application for various functions, as well as with the CBA Gateway.

Expected interfaces and Integrations:

- CBA Gateway: Queues, APIs, File folder, DB
- Core Banking System: APIs, File folder, DB

Future Integrations (Indicative)

- Securities Settlement System
- Cash Management / Treasury Systems
- Other CBA systems as required

3. QUESTION FOR CLARIFICATION

Request to clarify whether the RTGS system will require/allow the use of reference data, e.g. FX rates, settlement acc+C6ounts, RMAs, etc.). The complete list of reference data depends on the interactions between different internal systems. The assumption is also that the RTGS system will optimize the efficiency of obtaining and managing such reference data.

CLARIFICATION

The CBA’s assumption is that the RTGS system will require/allow the use of reference data, e.g. FX rates, settlement accounts, RMAs, etc. The complete list of reference data depends on the types of transactions implemented in the RTGS system and the necessary reference data from other sources needed for processing each transaction. The role of the RTGS system in this regard is to be able to seamlessly integrate with reference data sources (get the necessary data



and provide the data it owns). The CBA's assumption is also that the RTGS system will optimize the efficiency of obtaining and managing such reference data.

This requirement invites the Bidder to comment on their approach to sourcing and maintaining reference data.

4. QUESTION FOR CLARIFICATION

Request to clarify, if awarded, when would be the expected start date of the project. Whether there are any fixed go-live date or timeline for the new RTGS system.

CLARIFICATION

The anticipated start date is Q3 2026, however, the actual implementation (Go-Live date) is expected to be 9-12 months later.

5. QUESTION FOR CLARIFICATION

Request to clarify whether the bidder required to procure and set up the CI/CD platform.

CLARIFICATION

The bidder is not required to procure a CI/CD platform.

6. QUESTION FOR CLARIFICATION

Request to elaborate what is meant by parallel deployment and sequential deployment for the following section:

"The Bidder must present a delivery plan that specifies whether a parallel or sequential deployment is proposed, with justification for the chosen approach."

CLARIFICATION

Sequential deployment refers to an implementation approach where system components or functionalities are delivered, tested, and put into operation in defined phases, one after the other. Each phase is completed and stabilized before the next phase begins. Parallel deployment refers to an implementation approach where the system components are deployed and operated



in parallel. Bidders are expected to propose either a parallel or sequential deployment approach (or a combination thereof), together with a clear justification based on risk management, operational continuity, system complexity, and migration considerations.

7. QUESTION FOR CLARIFICATION

Request to provide the following information:

- How many direct and indirect participants are currently connected to the RTGS system?
- What is the current number of concurrent users accessing the RTGS system, and what is the projected growth in user capacity?
- What is the current database size of the RTGS system, and what is the percentage growth rate?

CLARIFICATION

- **Participants:**

The RTGS currently supports 25 direct participants and no indirect participants. Depending on CBA policy decisions, in the future the system can face involvement of other direct participants and indirect participants, too.

- **Concurrent users:**

The system currently supports up to 30 concurrent users with projected growth of 150%.

- **Transaction volumes:**

The RTGS is expected to handle transaction volumes of up to 60,000 transactions per hour under peak conditions.

- **Database size and growth:**

The initial database size is expected to be moderate, reflecting the above participant numbers and transaction volumes.

The Bidders are expected to propose a scalable architecture capable of accommodating participant growth, increased transaction volumes, additional integrations, and extended retention requirements over the system's lifecycle.



8. QUESTION FOR CLARIFICATION

Request to clarify the list of other projects for the following section:

“Integration with other systems: Messaging service and other projects.”

CLARIFICATION

The point here is to emphasize that during the implementation of the RTGS system, the Central Bank Gateway System project will still be ongoing. This project comprises BM Adapter development sub-project, which will be running in parallel.

Several projects that can potentially overlap with the RTGS implementation, are:

1. Implementation of the Reconciliation System,
2. Establishment of a Centralized Monitoring and Control Center,
3. Development of a Centralized Web Portal.

This information is provided to RTGS bidders solely to ensure awareness of the broader implementation landscape and the potential need for communication and coordination with parallel initiatives. From a timeline and resource management perspective, the RTGS vendor will not be affected since the implementation of these projects are not strongly interconnected. All the above-mentioned projects will be managed and controlled by the CBA.

9. QUESTION FOR CLARIFICATION

Request to clarify what functions are expected from other components of the diagram which should be utilized by RTGS Core (e.g., liquidity management service: what are major functions of this service? How does it correlate with RTGS built-in liquidity management functions?

The same for formatting service, billing services, data reference service etc.).

Request to clarify whether the understanding is correct that all communications are managed by the Flow Orchestration Engine and New Messaging Gateway, and it is expected that native RTGS messaging and non-messaging APIs will never be used.

CLARIFICATION

The diagram reflects the vision of the Central bank of the future modular architecture of the CBA different services: some of the services currently don't exist, while some others with limited functionality are closely embedded within the Core banking system.



The future liquidity management service will be responsible for the management of credit lines, provided by the CBA, and probably for the management and distribution of available liquidity. The example of interconnection could be the request of extra liquidity for execution of some urgent payments in RTGS based on provisioning of liquidity from LMS.

10. QUESTION FOR CLARIFICATION

Request to clarify the use cases covered by DD (Direct Debits) instruments.

CLARIFICATION

The CBA currently does not support a DD schema, but would like have the possibility to introduce this at a later stage. Therefore, the question here is if the system can support DD messages as well as the related processes like mandate management and cancellations/revocations in a flexible way without customization.

11. QUESTION FOR CLARIFICATION

Request to clarify which message format sets are assumed for non-ISO outbound messages—current RTGS message formats or other sets as well.

CLARIFICATION

The legacy local formats (FIN/MT style messages) will be provided to the selected vendor during the detailed design phase.

Non-ISO outbound messages will be exchanged with the following scenarios:

- RTGS to CBA Gateway (ISO 20022 AM series messages, HT messages in XML envelope, e.g message type HT108, which is similar to MT103);
- RTGS to Core Banking System (API first; Non-ISO XML templates defined for Core Banking) (the information exchanged between Core Banking system and RTGS will mostly depend on Core Banking -RTGS selected interaction model which will be agreed with the selected vendor during the Detailed Design Phase).



12. QUESTION FOR CLARIFICATION

Request to clarify Stress-testing. What scope is assumed for stress-testing? Who provides test scenarios and test data? Who performs tests?

Request to clarify the scope of stress testing, including who provides the test scenarios and test data, and who is responsible for performing the tests.

CLARIFICATION

According to this requirement, the Bidder should demonstrate the test scenarios and stress testing approaches already in place in the solution, regarding participant default, liquidity shortage, system outage and any other relevant risks.

For the future, the CBA will choose certain KPIs, test scenarios and test cases based on which the system will allow to implement stress testing. At this stage, the Bidder should only provide details on the available stress testing tools with potential testing scenarios.

13. QUESTION FOR CLARIFICATION

Request to clarify a set of reports and analytics is required to be provided by RTGS. At the same time DW is considered to be implemented using SAP product. Request to clarify the scope of RTGS and the scope of DW in this regard, and where will data collection and data analysis be performed?

CLARIFICATION

To address the requirement, it is necessary to provide the details of which reports can be provided out of the box (/ configuration) by the RTGS system and what mechanism/options the Bidder has available or used in the past to interact with the DW.

14. QUESTION FOR CLARIFICATION

Various alerts are required from the RTGS system. Considering that, in Model 1, full information is available for only to the CBS, the RTGS system has limited capabilities to generate alerts without online dedicated interface to the CBS, which complicates a full solution, request to clarify what types of alerts (in more detail) are expected from the RTGS system.



CLARIFICATION

To address the requirement, it is necessary to provide the details of which alerts can be generated by the RTGS system out of the box (/configuration) even if the intraday balances are not maintained in the system. What would the RTGS system require to create those alerts?

15. QUESTION FOR CLARIFICATION

Cash forecasting is usually covered by liquidity management service which is outlined as out of scope. Request to clarify what functions of cash forecasting should be included into RTGS and what functions will be provided by this independent service.

CLARIFICATION

The requirement is not to provide full cash management services, but to use the information available in the RTGS system to identify potential issues due to high number of rejections, pending credits, abnormal behaviors, etc. and generate alerts based on that either to internal and/or external users.

16. QUESTION FOR CLARIFICATION

Request to clarify whether the Access to Dispute management service will be provided through Flow Orchestration Engine or directly via APIs to this service bypassing it.

CLARIFICATION

This is a nice-to have functionality. If the functionality is in place, the participants should be able to submit claims for dispute management through via GUI meaning also with APIs.

17. QUESTION FOR CLARIFICATION

Request to clarify the following:

- Whether the Help Desk is to be provided for Central Bank users only or for participant users as well.
- Whether access to the Help Desk service will be provided through the Flow Orchestration Engine or directly via APIs, bypassing it.
- Whether the Help Desk service is considered part of the RTGS Core or a separate service.



Note: The diagram does not contain the Help Desk as a separate service—Request to check.

CLARIFICATION

This is a nice-to have capability, to make it possible for all market participants (including the CBA) to submit and track requests via GUI, meaning also with APIs.

In the context of RTGS system, this service is part of the RTGS functionality, not a separate service.

18. QUESTION FOR CLARIFICATION

Co-existence of current message formats and future ISO20022 formats means that message conversion should be provided during message processing. Message format service is present on the diagram as a separate service and it is out of scope of RTGS (according to it). Request to clarify whether the RTGS system should provide a parallel service or the service shown at the diagram should be re-used.

CLARIFICATION

Ideally, the formatting will be implemented by the Central Bank Gateway System. But it also depends on whether the MS service can address the message authentication and security validation properly.

However, format validation, participant specific format rules, coexistence logic, and mapping between legacy and ISO 20022 messages remain the responsibility of the RTGS. The RTGS system only needs to ensure format coexistence (process and create messages of both formats), not the conversion capability itself.

19. QUESTION FOR CLARIFICATION

Request to clarify the use cases considered for standing orders to be implemented in the RTGS Core, and how rejections, cancellations, and failures of these orders are expected to be processed (business rules)?



CLARIFICATION

In the case of Model I, standing orders would be maintained in the core banking system, however as part of the Model II solution CBA would like to understand how the RTGS system supports the set up and maintenance of standing instructions. Use cases can include: liquidity transfers between participant accounts, reservations for different payment priorities, periodic payment instructions, etc.

20. QUESTION FOR CLARIFICATION

Request to clarify access to the DW, including the expected access frequency (online, scheduled, others) and the type of interface anticipated for communication with the DW. Additionally, request to confirm whether the DW implementation is expected to be aligned with the RTGS project schedule.

CLARIFICATION

Interfacing between the RTGS and DW will be part of the design phase of the implementation project. Current assumption is that selected RTGS uses its own persistency layer, which will then be integrated into the DW. With regards to this integration there are different options like data replication or database linkage available. If the RTGS requires a very specific database like Cinnober Database this information shall be provided under system requirements.

21. QUESTION FOR CLARIFICATION

Request to clarify the approvals workflow. In case of any shared GUI facility (e.g. installed at CBA premises will be provided for Participant for various purposes (monitoring, control, resilience etc.) should this GUI interacts with RTGS system via Flow Orchestration Engine only without using native RTGS interfaces?

CLARIFICATION

The RTGS GUI functionality is used for interaction with the RTGS only. Hence the GUI shall not connect / interact with the Flow Orchestration Engine. It is assumed that any interaction with the GUI only causes changes in the RTGS. In case such interactions lead to the creation of business events, it is appreciated if the RTGS "publishes" these events, e.g. in the simplest way



by storing such events in its database. For the future CB Web Portal, the RTGS solution should only be able to provide plugins for integration.

22.QUESTION FOR CLARIFICATION

Request to clarify the API for all GUI functions, whether these functions are provided directly through native RTGS APIs or they are proxied via Flow Orchestration Engine.

CLARIFICATION

The RTGS shall expose GUI functionality also as APIs, which is the case if the GUI makes use of APIs which are externally exposed. RTGS APIs can be used by market participants and central bank internal systems, including Flow orchestration engine. The purpose of this requirement is to make sure API endpoints are in place for the GUI.

23.QUESTION FOR CLARIFICATION

Request to clarify the Access channels. What are Use cases for file upload?

CLARIFICATION

File upload will serve as a contingency mechanism for example in case Messaging Service is not available, to make sure participants can submit instructions via file upload. In this regard, different communication channels are required to ensure flexibility while exchanging messages between participants and the RTGS system.

24.QUESTION FOR CLARIFICATION

Request to clarify the considerations for ADF and XBRL reporting requirements and to define the scope of the RTGS Core in this context.

CLARIFICATION

The clarification is published on the CBA website in the Tenders section as [Clarification No. 1](#) (Question No. 13).



25. QUESTION FOR CLARIFICATION

Request to clarify what are the use cases for file upload of 99MB size.

CLARIFICATION

In cases when the file contains lots of messages, this requirement is there to make sure sufficient size limits.

26. QUESTION FOR CLARIFICATION

As stipulated in the invitation under the section “Message Format Interoperability and Participant Format Identification” section:

“In the transition period the Payment Engine must determine compliance with the applicable format based on the participant (whether the participant has already migrated to ISO 20022 standard or still uses legacy format). Bidders must describe how coexistence between legacy and ISO 20022 messages is managed to ensure consistent validation, traceability, and interoperability.”

Request to clarify whether this functionality is expected to be covered by the Messaging Service (CBA-2025-062). If not, please clarify the following:

1. Please list the legacy message formats with which the RTGS is required to comply.
2. How should the RTGS determine which message format a given message should be mapped to?
3. Can a Participant use both ISO20022 messages and the legacy format messages at the same time?

CLARIFICATION

1. Ideally yes, but it depends on whether the MS service can address the message authentication and security validation properly.
However, format validation, participant specific format rules, coexistence logic, and mapping between legacy and ISO 20022 messages remain the responsibility of the RTGS. The legacy local formats (FIN/MT style messages) will be provided to the selected vendor during the detailed design phase.



At this stage, we anticipate only 2–3 message types that require logical mapping. For example, message type HT108, which is similar to MT103, will need to be mapped to the pacs.008 data model.

2. The RTGS should determine the correct message format using for example participant migration status flag stored in the system’s participant configuration. This includes:
 - a. The participant’s current format (legacy / ISO 20022)
 - b. A mapping rule to convert inbound legacy messages into the ISO 20022 internal processing format
 - c. A corresponding rule for outbound messages sent to participants who have not yet migrated
3. No. For operational clarity and to ensure consistent validation and processing, each participant must use only one active format at a time. Once a participant has migrated to ISO 20022 for payments, they will be required to use only the ISO 20022 message format.

27. QUESTION FOR CLARIFICATION

As stipulated in the invitation under the section “*Internal Message Format Interoperability*” section:

“The Payment Engine must support message exchange with internal systems (e.g. Core Banking and other CBA systems) using both ISO 20022-AM and non-ISO 20022-based XML formats according to predefined templates. The Payment Engine determines the required message type and initiates the appropriate message.”

Request to clarify whether this functionality is expected not be covered by the Messaging Service (CBA-2025-062).

1. Does CBA have a list of the Core Banking messages and formats, if so, request to provide them.
2. What other systems is the RTGS expected to Integrate with.
3. What are the messages and formats that the RTGS must integrate with those systems via.



4. Request to provide the integration methodology for each system.

CLARIFICATION

1. Ideally yes, but for integration with the Core Banking System, the CBA follows an API first approach, meaning most interactions will be API based. However, there may be specific processes where the exchange of messages is still required to minimize impact on existing workflows. The Payment Engine must therefore support:

- ISO 20022 AM messages
- Non-ISO local XML templates
- Generation of appropriate outbound messages based on predefined rules

2. The RTGS is expected to integrate with the Core Banking System as well as the CBA Gateway.

In the future, the RTGS will also be expected to integrate with Securities Settlement, Cash Management, and other CB internal systems. Ideally, these integrations can be performed via the CBA Gateway, although direct API integrations may also be used where applicable.

3. Integrations will primarily rely on the following:

- CBA Gateway (ISO 20022 AM series messages, HT messages)
- Core Banking System (API first; Non-ISO XML templates defined for Core Banking) (the information exchanged between Core Banking system and RTGS will mostly depend on Core Banking-RTGS selected interaction model which will be agreed with the selected vendor during the Detailed Design Phase)
- File based XML extracts for reporting systems
- Event based XML notifications for monitoring and compliance systems

4. The following integration methods are currently foreseen:

- API based XML message exchange
- Message queue-based XML message exchange
- Secure file-based integration for batch-oriented reporting
- Event driven push mechanisms for real time notifications
- Synchronous request–response patterns for Core Banking interactions requiring immediate confirmation.



28. QUESTION FOR CLARIFICATION

As stipulated in the invitation under the section “*KYC Assessment*” section:

“The Payment Engine should support integration of KYC data for participant onboarding and, where relevant, transaction screening. The system must enable validation and maintenance of KYC information, support integration with external compliance systems, and ensure secure storage with full audit trails. Bidders must describe how KYC data is managed and applied in payment processing and oversight.”

Request to clarify whether the CBA already have an existing KYC and /AML platform that will be expected to integrate with the RTGS system.

If the CBA could elaborate a bit further on what information would be exchanged e.g. payment details, new participants on bordered etc.

CLARIFICATION

The CBA already operates an existing KYC and AML/TM solution, which is currently part of the existing Core Banking system. The KYC and AML/TM workflows themselves will not be performed by the new RTGS. These workflows will be orchestrated by the Orchestration function within the CBA Gateway. However, the initiation of KYC/AML/TM checks may be triggered by the RTGS as part of payment processing or participant lifecycle events (e.g. new participants onboarding). Accordingly, the scope of this requirement is limited to the RTGS Payment Engine’s ability to:

- Send requests to the AML/TM system (via the CBA Gateway),
- Receive, capture, store, and maintain the results of KYC, AML, and TM processes
- Manage related reference and status data required for payment processing, controls, and oversight,
- Ensure secure storage and full auditability of all received compliance outcomes

No direct KYC, AML, or transaction screening logic is expected to be implemented within the RTGS itself.



29. QUESTION FOR CLARIFICATION

As stipulated in the invitation under the section “*Billing & Invoicing*” section:

“The Payment Engine should include usage-based billing and invoicing capabilities, with customizable rate structures, reporting, and integration with external accounting systems. Bidders must describe billing logic, invoicing frequency, and reconciliation features, as well as describe how the Payment Engine billing function can support billing for transactions and services provided outside of the Payment Engine.”

Request to elaborate more on which systems would the RTGS receive additional billing information from and in what format e.g. a camt.077.

CLARIFICATION

Ideally, in the future, the CBA will operate a centralized billing system, which will utilize all the information received from different internal systems (including Core Banking, RTGS, GSASS, etc.) and manage invoicing and billing processes. Since currently no dedicated billing system is in place, the new RTGS system is expected to implement basic billing functionalities. The configuration of the billing function and the data needed to come from other systems, like the CBA Gateway and Core Banking System, and how, needs to be defined during the solutioning phase. In the meantime, the RTGS system should be capable of integrating with the dedicated billing system in the future.

30. QUESTION FOR CLARIFICATION

As stipulated in the invitation under the section “*Reference Data Management (RDM)*” section:

“The Payment Engine must provide user interaction capabilities for the creation, amendment, validation, and authorization of standing and reference data (e.g. participants, users, accounts, static data tables). The solution must enforce role-based access controls, support maker-checker approval workflows, and provide full audit trails. It must integrate with the designated master source, ensuring automatic synchronization, validation, and consistency of shared data across all integrated components. The system must support both import and export of reference data allowing seamless updates between the Payment Engine and external systems. Bidders must



describe how reference data is maintained, updated, and propagated across the system in real time, and data integrity is ensured.”

Request to provide examples of data imports and exports of reference data, and whether the CBA already have existing formats for these imports and exports.

CLARIFICATION

The CBA’s assumption is that the RTGS system will require/allow the use of reference data, e.g. FX rates, settlement accounts, RMAs, etc.). The CBA’s assumption is also that the RTGS system will optimize the efficiency of obtaining and managing such reference data.

This requirement invites the Bidders to comment on their approach to sourcing and maintaining reference data.

31. QUESTION FOR CLARIFICATION

As stipulated in the invitation under the section “*Infrastructure Requirements and Associated Costs*” section:

“Bidders must provide a clear summary of the hardware, storage, network, and operating system requirements to deploy the solution. The proposal must distinguish between primary and disaster recovery environments and state whether Bidders offer cloud or on-premises deployment options. If cloud deployment is proposed, it should primarily be positioned for testing, non-critical, or lower-tier environments. Associated costs for each infrastructure model should be outlined clearly, including third-party software licenses if applicable.”

With regard to third-party license pricing, request to confirm whether local pricing is required?

CLARIFICATION

With regard to third party licence pricing, bidders are not required to provide locally negotiated pricing specific to Armenia at this stage. Bidders may include estimated pricing based on their existing regional or European licensing agreements.



32. QUESTION FOR CLARIFICATION

Request to clarify the timeframe applicable to the reference projects to be submitted under the “Professional Experience” requirements.

In particular:

- page 4 of the Tender Invitation refers to the successful completion of at least three similar contracts within the last ten (10) years;
- whereas the relevant Appendix refers to successfully implemented systems within the last five (5) years prior to the submission date.

Please confirm which of these timeframes should be applied for the three reference projects to be proposed.

CLARIFICATION

With the reference in the Appendix to a five (5) year timeframe was a misprint. The correct requirement is as stated on page 4 of the Tender Invitation, namely the successful completion of at least three (3) similar contracts within the last ten (10) years.

33. QUESTION FOR CLARIFICATION

Bank Guarantee

Request to clarify whether the Beneficiary is willing to receive a SWIFT message issued by a correspondent bank, or whether a paper issuance from a local bank supported by an ISP guarantee (counter-guarantee) is required.

CLARIFICATION

As stipulated in Point 7.3 of the Invitation, the bid security, in the form of a bank guarantee, must be provided by the Issuing Bank through an authenticated SWIFT message.



Furthermore, in accordance with Point 7.4 of the Invitation, in the event of a demand for payment under the bank guarantee, the Purchaser shall submit such demand to the Issuing Bank via an authenticated SWIFT message.

34. QUESTION FOR CLARIFICATION

Bid Opening Session

Request to clarify whether it will be possible to attend the proposal opening session (scheduled for the 26th of February, 2026, 4:00 p.m. (GMT+4)) remotely (online), or if participation is exclusively in person.

CLARIFICATION

With regard to the proposal opening session scheduled for 26 February, as per Point 6.18 of the Invitation, bidders or their representatives may attend the proposal opening and award notification sessions by emailing the **Procurement Coordination Service at procurement@cba.am at least one (1) day in advance**. The email should include the attendee's name, surname, and organization.

Attendance may be either in person or remotely (online). In the case of remote participation, it is mandatory for the attendee to turn on their camera and display their name, surname, and company name during the session. The attendee must be the same individual whose details were submitted in advance.

35. QUESTION FOR CLARIFICATION

As stipulated in the invitation under the section "*High Throughput*" section:

"The solution must support high volumes of messages (60k payments processing per hour), including large-format and nested structures, with proven benchmark results (i.e. maximum number of messages processed per hour). Performance must remain consistent regardless of



message size or complexity. Bidders must provide benchmark details and describe optimization techniques and any limitations when handling complex message types.”

Request to clarify whether the CBA can add more information on the average transactions per day, weekly and month as well as the peak period and off-peak transactions per hour.

CLARIFICATION

Average daily transaction volume: around 120 000 (30-40% increase during peak days).

Average yearly transaction volume: around 29.7 mln.

However, note that under this requirement the CBA would like to understand the capabilities of the Bidder’s solution as confirmed by volume and stress testing situations.

36. QUESTION FOR CLARIFICATION

As stipulated in the invitation under the section “*Ancillary Systems Settlement*” section:

“The Payment Engine must support continuous (24/7/365) clearing and settlement with designated ancillary systems, including ArCa and STAK. This includes the processing of defined ISO 20022-AM net settlement messages, execution of daily clearing cycles, management of liquidity reservations, and integration with each ancillary system’s settlement mechanism. Bidders shall describe how their solution implements and supports ancillary system settlements, what types of settlement procedures are supported, how settlement reconciliation workflows are configured and monitored, and which types of ancillary systems their solution currently supports, such as card-based or other retail payment system, as well as DvP or Pvp settlements.”

Request to clarify whether Pvp is a mandatory functionality for Armenia, or this is a function that can be handled as an additional change request I.e. the cost not included as part of this project.



CLARIFICATION

PvP functionality is not a mandatory requirement; however, if supported, the Bidder is encouraged to describe how this functionality is implemented in the proposed solution.

If the functionality is not within standard product offering and implies additional costs, it should not be included in the financial proposal. However, further details on these costs are required to be revealed, this information will be considered by the CBA for the Bidder's overall evaluation.

37. QUESTION FOR CLARIFICATION

This requirement item seems to embed two distinct requirements. Request to clarify what code should be used in the "Delivery Approach" and how the CBA expects the answer to this item if for "Model II" the application supports the requirement out-of-the box, while under "Model I" the application requires customization.

CLARIFICATION

In such cases, the CBA recommends explicitly mentioning the delivery approach for each model in the Response; however, for the overall "Delivery Approach" of the requirement, please select "Requires customization for CBA."

38. QUESTION FOR CLARIFICATION

Direct Debit is mentioned in this requirement. The Direct Debit is an Automated Clearing House financial instrument. Real-time Gross Settlement (RTGS) functions as a credit-push system. Request to clarify how the CBA sees this being used in an RTGS.

RTGS uses the debit instrument (e.g. pacs.010) but this is used in Central Bank only flow to debit the participant accounts and credit Central Bank account.



CLARIFICATION

The CBA currently does not support DD schema in general, the only case currently being used is direct debit for CB operations, where the initiation of transactions comes from CB, debiting the participant account and crediting the CB account. Another case is the ancillary systems settlements, where the operator of the system initiates the settlement order resulting in debits and credits of the participants' accounts. Nevertheless, the CBA would like have the possibility to introduce DD on participant level at a later stage (e.g. TARGET system also supports DD functionality within the RTGS service). Therefore, the question here is whether the system can support DD messages as well as the related processes in a flexible way.

39. QUESTION FOR CLARIFICATION

This item seems to embed two distinct requirements. Request to clarify what code should be used in the "Delivery Approach" and how to respond to this item if for "Model II" the application supports the requirement out-of-the box, but for "Model I" "account validation" & "funds checking" are not integral part of the RTGS according to CBA description.

CLARIFICATION

The CBA recommends explicitly mentioning the delivery approach for each model in the Response. For the overall "Delivery Approach," please select the option corresponding to the Model I Delivery approach, which indicates that, to meet the requirement completely, the solution must be customized (or a feature needs to be newly developed) for the CBA.

40. QUESTION FOR CLARIFICATION

The recall of a payment is normally handled outside RTGS flows in dedicated systems, while only payment returns are processed within RTGS. Request to clarify whether the CBA intends to implement this recall request flow in RTGS.



CLARIFICATION

There is no final decision on how the recall request flow will be organized: via RTGS or another system. It will depend on the solutions suggested by bidders as well as other factors.

41. QUESTION FOR CLARIFICATION

Request to clarify the CBA sees this integration between RTGS and a Helpdesk.

Request to provide an example flow where this integration is used.

CLARIFICATION

The CBA does not expect the RTGS to replace an enterprise Incident Management or Help Desk system. Instead, the expectation is that the RTGS will be able to integrate with a Help Desk / Incident Management solution, either provided by the bidder or already used by CBA.

Currently, the CBA does not operate a dedicated Help Desk system for RTGS participants. If the bidder's solution includes such functionality, this may be considered as part of evaluation. However, the CBA anticipate integration with its existing Help Desk and Incident Management systems.

- The Help Desk remains the primary interface for Incident reporting, Service requests, Tickets creation, escalation, resolution, closure.
- The RTGS can trigger tickets automatically, provide relevant operational data, receive status updates from the Help Desk.

Example integration flow

1. A market participant experiences an issue (e.g. a liquidity transfer is delayed).
2. The participant submits an incident via the Help Desk portal (if this is not part of the RTGS portal).



3. The RTGS provides relevant transaction or event details to support investigation.
4. The Help Desk manages investigation, escalation, and communication with the participant.
5. Once resolved, the resolution status may be sent back to the RTGS for audit and reporting purposes.

42. QUESTION FOR CLARIFICATION

With reference to the point that “The interface must support annotations and free-text correspondence on individual messages” and given that this is an unusual requirement for an infrastructure payment system feature (e.g., Real-Time Gross Settlement) whose main role is to settle payments.

Request to clarify whether the CBA can provide an example flow where this would be necessary in a Real-Time payment system.

CLARIFICATION

Yes, the RTGS is primarily an infrastructure payment system. However, message level annotations and free text correspondence are considered an operational support feature, not a business function. Annotations can allow operators and participants to record contextual explanations, maintain payment related operational communication, and support post incident analysis. The intent of this requirement is to support operational handling, investigation, auditability, and controlled communication during the lifecycle of payments, without impacting validation, processing, or settlement logic.

43. QUESTION FOR CLARIFICATION

Request to clarify what is the expected technology landscape.

CLARIFICATION

The CBA’s current technology landscape is predominantly based on Microsoft technologies, with extensive use of .NET / .NET Core frameworks and related Microsoft platforms across existing systems.



Nevertheless, the CBA remains open to alternative technology stacks, provided they are enterprise grade, widely adopted, well supported, and capable of seamless integration with CBA's existing and future environment. Any proposed technology must demonstrate equivalent capabilities in terms of performance, security, scalability, maintainability, and integration.

The solution is therefore expected to:

- Support API based architectures (REST and SOAP)
- Support the use of MQs for asynchronous and event driven communication
- Use open standards to ensure interoperability and security
- Avoid vendor lock in and support long term evolution and extensibility

44. QUESTION FOR CLARIFICATION

With reference to the point that “The solution must support CBA approved hardware and software-based electronic signature management tools”, request to clarify what are the approved hardware and software-based electronic signature management tools.

CLARIFICATION

The CBA currently operates a special Hardware Security Module (HSM) that is used for message content level electronic signing and verification, ensuring message integrity and non-repudiation at the payment message level. In addition, CBA uses PKI based security mechanisms for message transportation. Accordingly, the RTGS solution is expected to support:

- Integration with the existing HSM for message level digital signature generation and verification
- PKI based security frameworks for transport level protection



45. QUESTION FOR CLARIFICATION

Request to clarify what are the plans to integrate with OAuth/OpenID.

CLARIFICATION

At this stage, the CBA does not mandate a single identity or authorization framework for all APIs. Instead, the expectation is that the solution:

- Is capable of integrating with OAuth 2.0 / OpenID Connect based identity providers, where required.
- Supports token-based authentication and authorization (e.g. JWT/JWS).
- Can operate with mutual TLS for system-to-system communication.

46. QUESTION FOR CLARIFICATION

With reference to the point “Operating System & Hardware Compatibility”, request to provide the current indicative RTGS payment volumes (average and peak) per day and per year, as well as the expected forecast for the next five (5) years. The RFP currently specifies only the peak hourly throughput requirement of up to 60,000 payments/hour. The daily and annual volume estimates are needed to provide accurate sizing and capacity planning.

CLARIFICATION

Average daily transaction volume: around 120 000 (30-40% increase during peak days).

Average yearly transaction volume: around 29.7 mln.

47. QUESTION FOR CLARIFICATION

With reference to the point “Operating System & Hardware Compatibility”, request to confirm the required environments to be installed (e.g. DEV, SIT, UAT, Pre-Production, Production) and indicate which of these (other than Production) must be configured as a two-site deployment (e.g. Pre-Production).



CLARIFICATION

Production: Must be configured as a two-site deployment to support high availability, resilience, and disaster recovery.

Pre-Production: Is also expected to be configured as a two-site deployment, in order to validate production-like behavior, failover mechanisms, and operational procedures prior to go-live.

SIT, and UAT: These environments are not required to be deployed across two sites. A single-site deployment is considered sufficient for development and testing purposes.

48. QUESTION FOR CLARIFICATION

With reference to the point "A transparent commercial offer with itemized costs for software, services, licenses, training, and long-term support, and any required localization or customization", request to clarify whether the understanding is correct that the Bidders are required to provide a list of all necessary licenses along with the associated costs, and that these costs are not included in the financial offer nor considered during the evaluation of the financial proposals.

CLARIFICATION

Yes, the understanding is correct. The Central Bank of Armenia requires an itemized list of all third-party licenses and other associated costs, in order to ensure transparency and to assess the overall cost structure of the proposed solution. However, for the purposes of financial evaluation, only the Implementation fee and the 10-year Support and Maintenance fee will be taken into consideration.

*The Secretary of the Tender Committee of the Central Bank of the Republic of Armenia:
Siran Yeganyan*

Purchaser: The Central Bank of the Republic of Armenia