

Approved

_____/_____
«__» _____ 2021

**Terms of Reference for development and
implementation of the digital financial platform
“Marketplace”**

Version: 1.0
Date: April 8, 2021

1. INTRODUCTION	4
1.1. Purpose of the document	4
1.2. Scope	4
1.3. List of abbreviations	4
1.4. References	5
2. GENERAL DESCRIPTION	5
2.1. Purpose and goals of the system	5
2.2. Interaction (with other products and components)	6
2.3. User characteristics	7
3. DETAILED REQUIREMENTS	7
3.1. Requirements for the structure	7
3.1.1. System software	8
3.2. Requirements for external interfaces	8
3.2.1. User interfaces	8
3.2.2. Hardware interfaces	8
3.2.3. Interaction interfaces	9
3.3. Functional requirements	9
3.3.1. System modules	9
3.3.1.1. RD management module	11
3.3.1.2. Web platform module	12
3.3.1.3. Constructor module	14
3.3.1.4. Data exchange module (API)	16
3.3.1.5. Administration module	17
3.3.1.6. Security module	17
3.3.2. Performance requirements	19
3.3.3. Design constraints and standards	19
3.4. Non-functional requirements	20
3.4.1. Reliability	20
3.4.2. Security	21
3.5. Development, control and acceptance procedure	22
3.5.1. Acceptance	22
3.5.2. Testing	22
3.6. Training	24
3.7. Documentation	25

3.8.	Other requirements	25
3.8.1.	Intellectual property	25
3.8.2.	Patent purity	25
4.	COMPOSITION AND CONTENT OF IMPLEMENTATION	26
5.	APPENDICES	29
5.1.	New partner registration business process	29
5.2.	New service creation business process	30
5.3.	Information request service business process	31
5.4.	Service as a router business process	32
5.5.	Application service business process	33

1. Introduction

1.1. Purpose of the document

This Terms of Reference Task defines the basic requirements for the development and implementation of the digital financial platform “Marketplace” (System).

Customer – Union of Banks of Kyrgyzstan.

1.2. Scope

The Terms of Reference (ToR) for AIS “Marketplace” describes the requirements for the System in the organizational and functional scope of the Project and is the main document in the set of project documentation that defines the requirements and the procedure for creating the System. All other documents developed during the creation of the System should be consistent with this document and its amendments.

1.3. List of abbreviations

AIS	Automated Information System
DB	Database
DBMS	Database management system
ES	Electronic signature
ICT	Information and Communication Technology
IE	Individual entity
IEIS	Interagency Electronic Interaction System
IS	Information System / Information Systems
IT	Information Technology
JSON	JavaScript Object Notation
LAN	Local Area Network
LE	Legal entity
REST	Representational state transfer (software architecture for distributed systems)
RD	Reference data
SOA	Services Oriented Architecture

ToR	Terms of Reference
UB	Union of Banks of Kyrgyzstan
XML	eXtensible Markup Language

1.4. References

The basis for the performance of work is:

- Charter of the association of legal entities “Union of Banks of Kyrgyzstan”;
- Digital Transformation Concept “Digital Kyrgyzstan” for 2019-2023.

2. General description

2.1. Purpose and goals of the system

The main purpose of the financial platform is to support the digitalization of financial products and services for small- and medium-sized enterprises (SMEs) and citizens. Moreover, the financial platform would be in line with the global trends associated with the digitalization of financial products and services. On other hand, UB continues to work on resolving issues of creating a system for remote retail distribution of financial products and services, as well as registering financial transactions (digital contracts).

The Marketplace project would be designed to ensure equal access of service users to the financial market and to create preconditions for the development of a competitive environment and optimization of financial services. The major advantage of the proposed digital financial platform would be the improvement of the situation with the financial accessibility of both individuals and legal entities (i.e. SMEs) by removing geographic limitations and simplifying procedures. At the same time, users would receive remote access to financial services in 24/7 mode and a wide range of financial products. The product range is expected to include bank deposits, government, and corporate bonds, insurance, and mortgage loans.

The financial platform will be built on a system infrastructure that operates on a “plug & play” principle, i.e. connect, and start working immediately and will unite such participants as:

- Electronic platforms, where financial institutions and clients interact to conclude transactions. The task of the platform will automate the interaction of the parties and ensure the convenience of financial transactions.
- Providers of financial products and services, including banks, microfinance, and insurance companies, issuers of corporate and government bonds, and others.
- Showcases aggregators - internet resources and mobile applications that provide the client with the opportunity to choose a financial product by organizing and visualizing its characteristics. The showcase is designed to provide a presentation of the parameters of a financial product (term, interest rate, rating, etc.);
- Online Bots - automated consultants for financial products and services in the conclusion and execution of transactions.

The infrastructure of the system will be integrated with a platform for remote identification, which has recently begun functioning following one of the development directions of the National Bank of the Kyrgyz Republic, which will allow transferring financial services to a digital environment and increasing the level of their availability for consumers.

2.2. Interaction (with other products and components)

The system will have to interact with the following systems:

- Software of commercial and state banks;
- Software of insurance companies;
- Stock exchange software;
- Portal of government services; and
- Other services connected according to the standard defined by the System.

2.3. User characteristics

This System is being developed for the Union of Banks of Kyrgyzstan. The main users of the system will be partners connected through API and users of the web platform.

All users of the system can be divided into the following roles:

- System administrators;
- Partners. Partner's administrator;
- Partners. Partner's user;
- An ordinary system user.

3. Detailed requirements

3.1. Requirements for the structure

The software of the System should provide functioning according to a three-level architecture and should consist of the following components:

- Data storage level (DB);
- Application server;
- Client application.

Data storage tier provides data storage and access.

The application server provides the implementation of the business logic of the application.

The client web application provides the user with an interface for viewing and editing data, generating reports and executing procedures.

To store all information arrays of the System, should be used a unified relational database management system (DBMS).

DBMS should have effective protection against unauthorized access and allow to differentiate access rights to data of various categories of users.

3.1.1. System software

It is necessary to use well-known, with extensive experience in implementing architectural solutions and software products. The system must use client-server technology, in accordance with the criteria:

- access to real data, access operations and data modifications should be based on the data in the server itself, and not on the procedures for loading or unloading data files;
- client software should not be resource intensive;

The System should include tools for configuring screen forms and generating queries;

The system should be created on a modular basis, making it easy to add, change the functionality of the System.

The system should provide authentication and separate access to data using a unique username and password for each user.

The system should ensure the adjustment of all necessary reporting forms, composition and presentation of data available for viewing or editing. All operations that lead to a change in the state of the System should be reflected in a special journal.

3.2. Requirements for external interfaces

3.2.1. User interfaces

Visual interaction between the user and the System should be based on an intuitive interface. Various subsystems should be designed in the same style, with the possibility of group and individual settings of interface elements. The printing system should contain means of customization and appearance of documents. The help system should provide a hint to the user at any stage of the task.

3.2.2. Hardware interfaces

To ensure information exchange, System components must work as part of a single corporate network.

TCP / IP must be used for network and internetworking.

3.2.3. Interaction interfaces

The interconnection of the system with other information systems should be carried out through web services or intermediate files (in XML, JSON).

To implement interaction with related systems, the System should provide for the creation of customizable integration services that allow information exchange in automatic or manual mode with the recording of import / export results in special technology journals.

In the case of importing information that cannot be uniquely identified or processed during the import operation, the System should provide mechanisms for resolving conflicts.

3.3. Functional requirements

The following are the technological requirements for destination indicators:

- The system should provide the ability to store historical data for unlimited time;
- The system should support the work of users located on geographically distributed objects;
- It should be possible to increase the number of simultaneously working users at different levels of the hierarchy of the automation object;
- A phased increase in both productivity and the functional composition of the system should be ensured;
- The principle of an open architecture for building a system should be implemented, providing the ability to embed and interact with any other systems.

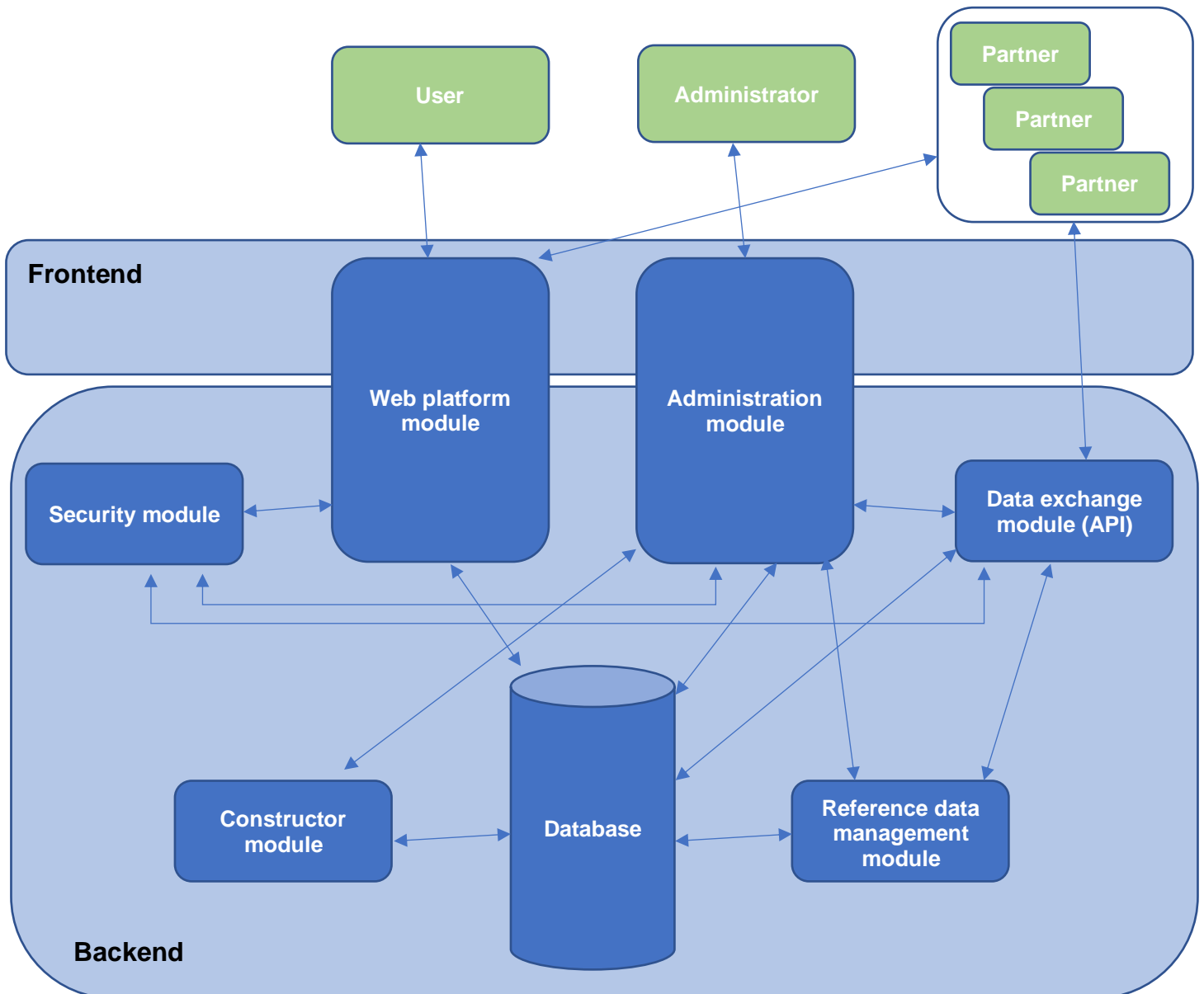
3.3.1. System modules

The system should consist of the following modules:

1. Reference data (RD) management module
2. Web platform module

3. Constructor module
4. Data exchange module (API)
5. Administration module
6. Security module
7. Mobile application module

The module interaction flow is shown below.



3.3.1.1. RD management module

The RD maintenance subsystem is intended for maintaining databases, timely updating information in databases and maintaining the System.

Regulatory and reference data refers to a set of directories containing input, output and intermediate stored data, which should be sufficient to perform the automated functions of the System.

The system should provide the user with the ability to work with directories - navigation, viewing, editing, adding new and deleting existing directory entries, in accordance with access rights.

The system must maintain a hierarchical structure of directories.

All modules of the System must use a single database of regulatory and reference data, all used reference data must be present in the System in a single copy.

RD directories can be of the following types:

- a. Versioned (supporting change history) and nonversioned;
- b. Approved (undergoing approval by users) and non-approved.

The vendor must ensure the import of their reference data from existing systems.

The following types of reference data should be implemented in the System:

By administration method:

- System reference data is used in the core of the System and implies its editing only by the Developer or by the system's administrators.
- Reference background information is used in the work of the System and for the construction of summary reports, it is meant to be edited by the people responsible for maintaining a single RD, with the subsequent automatic distribution of changes to all levels of the organizational and technical structure of the System.

By way of organization:

- Directory - a flat set of records of the same type.
- Classifier - a hierarchical set of records of the same type.
- Applied directory - a directory implemented by means of expanding the system.

Main objects:

- Countries.
- Currencies.

3.3.1.2. Web platform module

The web platform is the “cover” of the entire System and the entry point for users. The main functions of the web platform are:

- Personal account;
- Advertising platform;
- Information from partners;
- News and articles;
- Checking service status.

Since the external interface and organization of space is of great importance in this module, the Supplier is obliged to provide mock-ups before the implementation. Implementation should begin after the Customer’s approval.

Personal account:

The personal account is the most important function of the web platform, because it is through the personal account that most users interact with the System - create applications, receive responses, give approvals, etc.

The System should provide for two ways to register users:

- Through the System Administrator by creating a new user. In this case, the employee of the Customer personally checks the documents and verifies the identity;
- Through an API hosted in mobile banking applications. The mobile banking user will be able to use the link to the registration service in the System. The mobile application will contact the System via the web service (data: full name, TIN, mobile phone). The system will create a user and send a link and a code to the mobile phone. The user will follow the link, enter the code, see his login and create a password.

- Another way to guarantee identity verification (to be determined during implementation). For example, an electronic digital signature or the use of authorization from other third-party services, where the identity has already been verified - banking applications, mobile wallets, etc.

Authorization should also allow both methods to be used. EDS must be used to sign documents.

Personal account functions:

- Authorization;
- Messages (notifications);
- Create an application (from available services), with the attachment of documents;
- View the status of the application;
- Approve the application for the route (for partners);
- Templates of documents for signing;

Advertising platform:

The advertising platform is important for the entire System, as it is one of the sources of profit. Therefore, it must have a “friendly” interface and convenient form of information organization. Content will be managed from the administration module.

Information from partners:

Useful information from partners - exchange rates, stock quotes, etc.

News and articles:

Content will be managed from the administration module.

Checking service status:

The web platform should be able to check the status of the service. For unauthorized users, it should display information only about the current status of the service with no personal data. The user can get extended information about his/her application in the Personal Account.

3.3.1.3. Constructor module

Constructor of services and routes for their approval. A basic template should be designed from which services could be created in the constructor. The constructor would make it possible to select the required fields from the basic template, give them the “mandatory” filling status and names.

A route constructor is needed when a service goes through several stages (points), for example, an application for a loan. Routes are configured based on roles.

Types of possible services:

- Request-response information services. Used when a request is initiated on the System side. For example, a user in his/her personal account makes a request for the availability of deposits in all banks.
- Service as an application. It is necessary when a request on the System side initiates some processes. For example, a user in his/her personal account creates an application for a loan in a certain bank. In this case, the user fills out an application, attaches scanned documents, an employee on the bank side checks all the information provided and approves the application.
- Service as a router. In this case, the service allows third-party services to receive data from the request-response services. The service acts as a single entry point for third-party services. For example, the portal of government services initiates a request to the System for the presence of active accounts in banks using TIN. The System receives the request and initiates the request-response services. The System returns the received answers to the initiator - the portal of government services.

Example of the basic template:

Name	Type	Description
SERVICE_NAME	Text	Name of service. For example, LOAN, DEPOSIT, MORTGAGE, INSURANCE, etc.
PARTNER_NAME	Text	Name of partner
REQUEST_DATE	Date and time	Date and time of request

PARENT_REQUEST	Text	Parent request (ID), in case of response
TEXT_1	Text	Text field
TEXT_2	Text	
...	Text	
TEXT_30	Text	
NUMBER_1	Number	Number field
NUMBER_2	Number	
...	Number	
NUMBER_20	Number	
DATE_1	Date and time	Date field
DATE_2	Date and time	
...	Date and time	
DATE_20	Date and time	
DETAILS:	Tag	Tag for a nested table
DETAILS_1	Nested tag	Entry 1 tag in nested table
TEXT_1	Text	Text field
...	Text	
TEXT_10	Text	
NUMBER_1	Number	Number field
...	Number	
NUMBER_10	Number	
DATE_1	Date and time	Date field
...	Date and time	
DATE_10	Date and time	
DETAILS_2		Entry 2 tag in nested table
...		Entry N tag in nested table
DETAILS_N		Entry N tag in nested table

An example of a service built for a TIN request-response for deposits:

Template field	Name in service	Value
SERVICE_NAME	Name of service	"DEPOSITS"
PARTNER_NAME	Name of bank	The bank that responds to the service

REQUEST_DATE	Date and time of request	
PARENT_REQUEST	ID of parent request	
TEXT_1	Full name of client	Client data
TEXT_2	Client TIN	
DETAILS:		Deposit data
DETAILS_1	Deposit #1	
TEXT_1	Type of deposit	
NUMBER_1	Amount of deposit	
DATE_1	Date of deposit	
DATE_2	End date of deposit	
...		
DETAILS_N	Deposit #N	

3.3.1.4. Data exchange module (API)

A module for interacting with other systems. Interaction via SOAP, REST protocols using XML/JSON messages.

Types of web services:

- Web service for broadcasting reference data. This web service is needed to publish the reference data.
- Web service for importing data. The web service should work on importing data according to the basic template.
- Web service for exporting data. The web service should work on exporting data according to the basic template.

Thus, once written web services should not require further support from programmers.

Every incoming and outgoing request must be logged. Old logs should be archived outside the online database.

3.3.1.5. Administration module

The administration module is required to manage services and the data exchange module. The module allows managing:

- Addition, modification, deletion and publication of the reference data;
- Publication of the service created in the constructor and access to it;
- Content of the web platform;
- User and partner accounts and roles.

Also, the module must have the functionality of analysis in the form of reports:

- Report on new users;
- Report on incoming and outgoing requests, with details by type of service.

3.3.1.6. Security module

The system should include software tools to ensure information security:

- *System User Identification and Authentication Requirements :*
- Identification and authentication of users;
- Identifier management, including the creation, assignment, destruction of identifiers;

System User Access Control Requirements:

- Management (establishment, activation, blocking and destruction) of user accounts;
- Implementation of the necessary methods (discretionary, mandatory, role-based or other method), types (read, write, execute, or other type) and access control rules;
- Separation of powers (roles) of users, administrators and persons ensuring the functioning of the system;
- Definition and provision of the minimum necessary rights and privileges to users, administrators and persons ensuring the functioning of the system;

- Limitations of unsuccessful login attempts (access to the information system);

Requirements for registering security events in the System :

- Definition of security events to be recorded and their storage periods;
- Determining the composition and content of information about security events to be recorded;
- Collection, recording and storage of information about security events during the set storage time;
- Monitoring (viewing, analyzing) the results of registration of safety events and responding to them;
- Protecting security event information;

System Integrity Requirements:

- Software integrity control;
- Providing the ability to restore software in case of emergency;
- Restriction of the rights of users to enter information into the system;
- Control of erroneous actions of users to enter and (or) transfer personal data and warning users about erroneous actions;

Incident detection and response requirements :

- Identification of persons responsible for identifying incidents and responding to them;
- Detection, identification and registration of incidents;
- Timely informing the persons responsible for identifying incidents and responding to them, about the occurrence of incidents in the information system by users and administrators;
- Analysis of incidents, including determining the sources and causes of incidents, as well as assessing their consequences.

3.3.1.7. Mobile application module

The mobile application must duplicate the functions of the web platform module. The application must be available to run on mobile phones on Android and iOS platforms.

3.3.2. Performance requirements

The following are additional requirements for destination indices:

Table 3-1

№	Index	Value	Expansion
1	Number of System Users	50	1000
2	Number of partners	20	100

3.3.3. Design constraints and standards

ES and cryptographic protection:

- The integrity control mechanism should be implemented by cryptographic control of the integrity of the data within the system (including during storage), as well as when exporting this data to other systems or subsystems and / or importing them from other systems or subsystems.
- The integrity of the data of the security subsystem should be ensured in the system (audit logs, information on the rights of users in the system, a list and settings of the functionality of application roles, tables with hash values of user passwords, etc.).
- If a violation of integrity is detected, the system administrator should receive a corresponding message and block the further operation of the system until the causes are clarified and the error is eliminated.
- The applied cryptographic algorithms must comply with the standards adopted in the Kyrgyz Republic, in addition, they must be certified by authorized bodies.
- The electronic signature system can be compatible with certification centers accredited by the authorized body.
- It should be possible to sign electronic files / messages with data uploaded to external systems
- It should be possible to carry out the procedure for checking the electronic signature when loading files / messages with data, NSI, etc. into the AIS (only files / messages that have the correct ES should be uploaded to the System).

- Possibility of using a hardware storage medium of type ES as a private key secret.
- Failure to accept the file / message for processing upon receipt of a negative result of checking the ES of the received file / message (“ES is not correct”, “ES is not registered”, “ES is absent”). The occurrence of this situation should be reflected in the audit log.
- The ability to use cryptographic procedures to protect against unauthorized changes to documents.
- Documents created, processed and transmitted to other subsystems or to external speakers should be signed by electronic signature.
- The technological process for the exchange of protected documents must be implemented in compliance with the principle of continuity at the intermediate stages of transmission or processing of a document (without re-signing procedures).
- The system can use either the user’s EP, entering, confirming or unloading information, or the automated system’s ES (ES AS), if the creation, modification or uploading processes are carried out automatically.

3.4. Non-functional requirements

3.4.1. Reliability

The system should work round the clock.

The time limit for the emergency recovery of the hardware and software of the System, of commercially important information is determined by the following table.

Table 3-2.

No	Parameter that defines the maximum permissible failure	Value
1	Emergency recovery of the System after general or special software failure	4 hours
2	Emergency recovery of the System after hardware failure	1 hour

Additional requirements :

- Using own and system means of backup and archiving of information;

- Monitoring the state of the System as a whole and its individual components

The safety of information in the System should be ensured in all emergency situations.

The system should ensure the storage of all data, both in the main storage and on backup copies for an unlimited time;

Data storage should be carried out in the most optimal way, excluding data duplication.

In the event of an accident or malfunction during the execution of user tasks, the database must be restored to the state at the time of the last transaction completed by the system.

3.4.2. Security

The system should include software tools to ensure information security :

- Identification and authentication of users of the System;
- User access control to the System;
- Registration of security events in the System;
- Ensuring the integrity of the System;
- Incident detection and response;

The system should provide control of user access levels to various groups of operations.

When working with each subsystem, users are divided into the following roles:

- *System Administrator* - is the administrator of each subsystem of the System. Has the right to determine the access level of other users.
- *Operator* - has the necessary rights, determined by his official duties, to add and edit information, and perform the functions of a subsystem or module.
- *User* - has the rights determined by his/her role in the business process to add and edit information, and perform the functions of a subsystem or a module.

The amount of information and functionality of the subsystems and modules of the System available for each user is agreed upon at the stage of setting up System rights.

3.5. Development, control and acceptance procedure

Adaptation and implementation of the System is carried out in stages. The list of works for each stage is determined by paragraph 3.3 of this ToR.

Acceptance of work for each stage is carried out as acceptance of reporting documentation.

After each stage is completed, the parties (DPP and the Contractor) draw up the acceptance report of the work stage.

For consideration and acceptance of documentation on the creation of the System the following documents must be presented:

- revised Terms of Reference;
- operational documentation.

3.5.1. Acceptance

Monitoring and acceptance of the System into operation is based on the results of tests of the System.

The following types of system tests should be carried out:

- preliminary testing (upon completion of stage No. 3 “System Development” in order to verify the compliance of the System with the Terms of Reference and to determine the possibility of putting it into operation).
- pilot operation (PO - stage No. 6).

3.5.2. Testing

Types, composition, amount, and test methods of the System are determined by the following documents:

- Test program and methodology, including:
 - object of testing.
 - purpose of testing.
 - System requirements.

- documentation requirements.
- test procedure.
- test methods.
- list of test reports.
- test case (test script).
- The concept of pilot operation, containing:
 - plan for conducting an PO.
 - the objectives and criteria of the PO.
 - organizational, functional framework of the PO.
 - preparation of the PO.
 - conducting an PO.

For testing, UB provides (according to the requirements of the terms of reference):

- creation of jobs for employees whose functional responsibilities will include work with the System;
- installation and commissioning of server equipment, LAN and communication channels that meet the requirements described in the section "Requirements for the technical support of the System";
- connection of workstations included in the computer network;
- installation of system software on servers and workstations in accordance with the requirements described in the section "Requirements for workstations".

At the stage of preliminary testing of the System, it is necessary to carry out:

- performance tests and compliance with the statement of work, in accordance with the test program and methodology (test scenario).
- draw up a test report of the System and a register of comments.
- eliminate malfunctions and amend the documentation for the System in accordance with the test report.
- At the stage of pilot operation, it is necessary to:
- develop a plan and concept for conducting an PO.

- carry out a cycle of work in the System.
- analyze the results of the PO.
- to complete (if necessary) the System.
- carry out additional adjustment (if necessary) of technical means.
- draw up and sign the act on the completion of the PO.
- draw up and sign an act on the readiness of the System for industrial operation.

3.6. Training

It includes the identification of the necessary resources, activities and methodologies by which knowledge for the operation of the system to be deployed will be transferred to various users. The vendor must develop a detailed training plan, which will be completed after the award of the Contract.

Training will be conducted in Russian or Kyrgyz.

The Vendor shall conduct a separate technical training program for the training of the technical personnel of the Buyer's IT department. The vendor must provide training in Russian and / or Kyrgyz on technical operations and configurations of the software supplied with the new system.

The provider must provide a detailed training plan at the end of the pilot implementation phase. The plan should include:

- Definition of goals and scope of study
- Definition of training materials
- Definition of logistics for training
- Development of training activities
- Names of courses to be provided;
- Course duration
- Who should attend each course (role / responsibility)
- Course orientation (functional or technical)
- Necessary skills

- Developing a training schedule and preparing a learning assessment.

The training program should cover:

- Customer Guide
- System users
- IT staff (up to 10 people)
- Trainers among employees of UB .

3.7. Documentation

All documents must be issued in Russian.

The composition of documents for general software supplied as part of the System may correspond to the delivery package of the manufacturer.

The documentation for the components of the system may be included as separate sections in the documentation for the system as a whole.

3.8. Other requirements

3.8.1. Intellectual property

The Contractor transfers to the Customer exclusive rights to all software developed under the contract. The Contractor does not have the right to exercise those rights that were transferred to the Customer, as well as to transfer these powers to other persons.

3.8.2. Patent purity

Patent purity of the System should be ensured in the territory of the Kyrgyz Republic.

The creation of the System provided for in this document shall not lead to a violation of copyright and related rights of third parties.

When using third-party programs and databases developed by third parties in the System, the conditions for the use of these software tools shall not impose restrictions that impede the use of the System by the Customer.

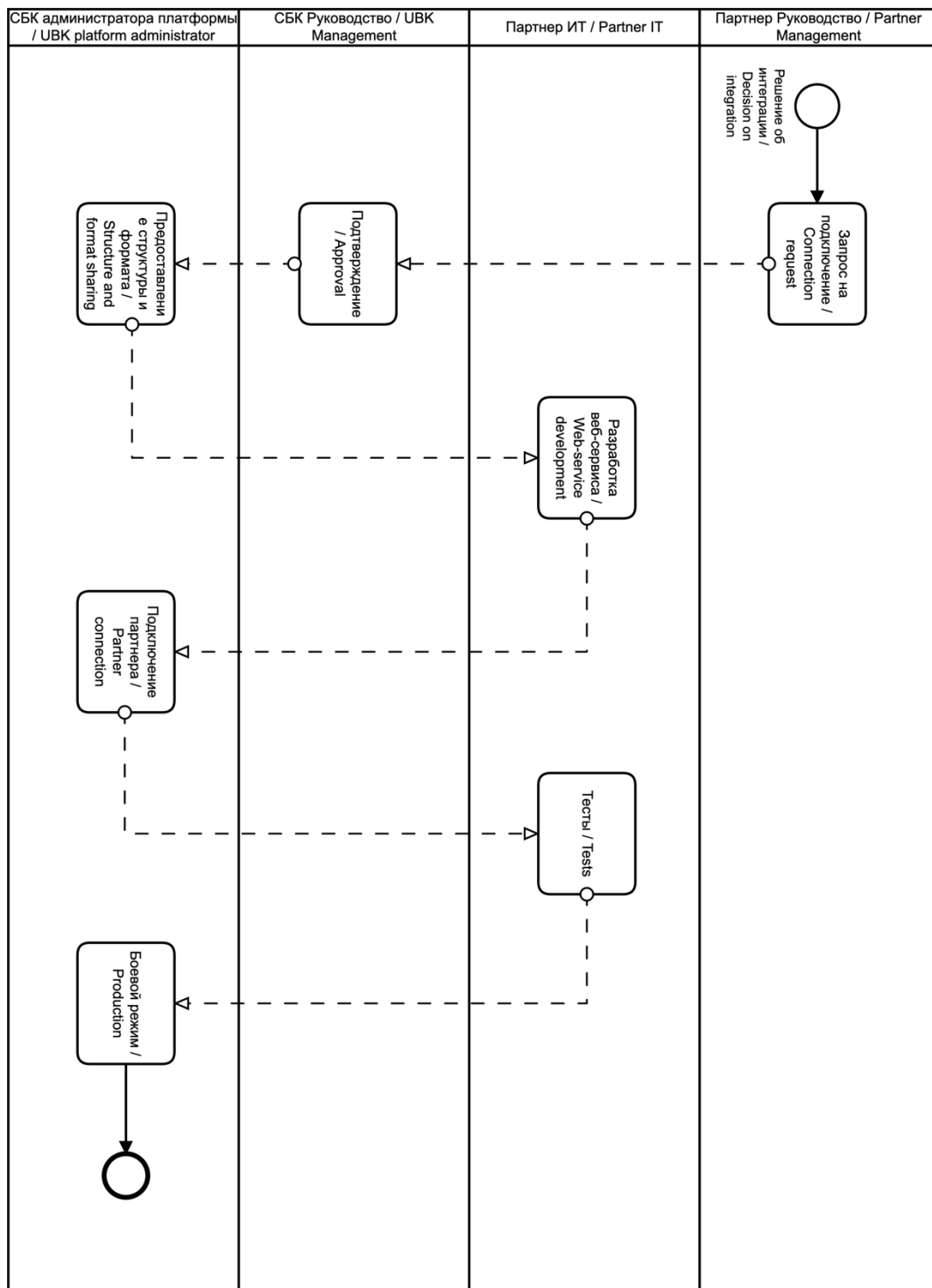
4. Composition and content of implementation

Work content	Work result
Stage number 1. Inspection of the objects of implementation and the preparation of updated ToR	
1. Field inspection 2. Clarification of ToR for the implementation of the system based on survey reports	
1. To conduct a full and high-quality inspection of automation objects under the Agreement; 2. To prepare the minutes of interviews with the employees; 3. To prepare documents on the inspection of objects of automation; 4. Clarify the project plan. 5. Prepare an updated Terms of Reference;	1. Survey report. 2. Terms of Reference, including applications: 2.1. Rules of work in the System (description of business processes); 2.2. Layouts of reporting forms required for the implementation of the System; 2.3. Unified methodologies for calculating System indicators.
Stage number 2. System Development	
1. Development of working documentation for the System 2. Adaptation and configuration of systems 3. Development of a regulation for the conduct of pilot operation 4. Development of a regulation for the training of employees	
1. 1. To carry out the development of the System, within the agreed time period for carrying out these works and notify about the completion; 2. 2. Develop a set of working documentation for the System. 3. 3. Develop, on the basis of the integration test, a program and methodology for testing the System. 4. 4. Conduct acceptance tests of the System on the Contractor's equipment, in accordance with the integration test. 5. 5. Prepare and coordinate with the DPP the protocol on the conducted tests	1. A set of revised working documentation: 1.1. Description of the database structure. 1.2. General Description of the System; 1.3. Rules of work with the System; 1.4. System Administrator Manual; 1.5. System User Guide; 1.6. Program and test procedure.
Stage number 3. System Deployment and Training	
1. Installation and configuration of the system on the object 2. Training of users and administrators	
1. In terms of deploying the System:	1. User training protocol; 2. The protocol for the deployment of the System.

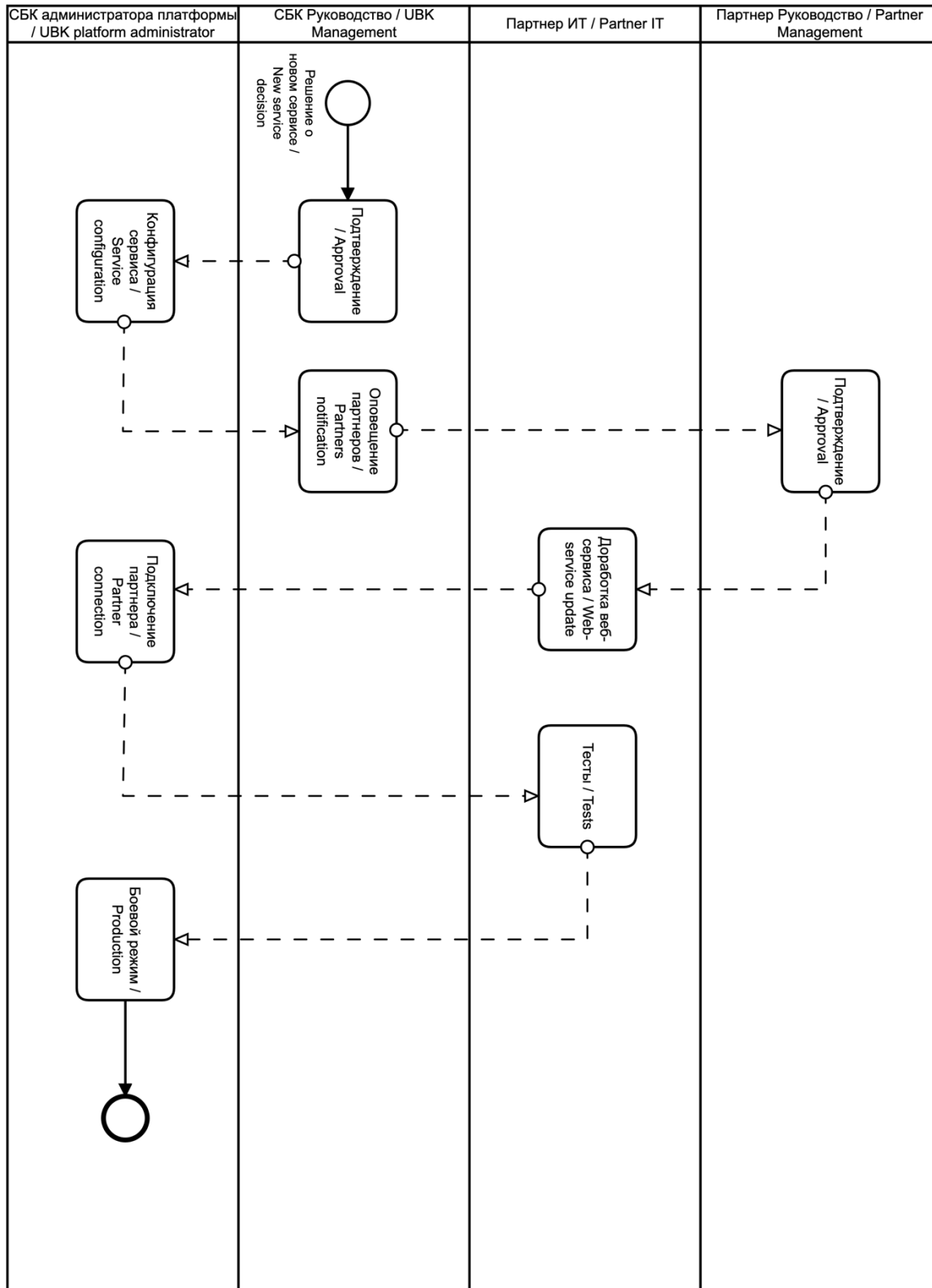
<ol style="list-style-type: none"> 1.1. Assistance in installing and configuring the System on user workstations and server. 2. In terms of training: <ol style="list-style-type: none"> 2.1. To prepare educational and methodical documentation, to prepare and coordinate with the Program and Training Plan; 2.2. Conduct user training; 2.3. Conduct final testing according to the results of the training course; 2.4. Analyze the test results and assess the readiness of the staff to work with the System. 	
Stage number 4. Preparation for pilot operation <ol style="list-style-type: none"> 1. Development and coordination of the program and methodology for conducting acceptance tests of the system 2. Conducting acceptance tests 3. Development of a concept for conducting an industrial exploitation System at pilot sites 4. Putting the System into trial operation 	
<ol style="list-style-type: none"> 1. On the basis of the integration test, develop a program and methodology for testing the System. 2. in accordance with the integration test, conduct acceptance tests of the System on the Contractor's equipment.. 3. Prepare and agree with the protocol on the conducted tests. 4. Develop a Concept for the pilot operation of the System at facilities. 5. Participate in the work of the commission to verify the readiness of the System for commissioning in pilot production. 	<ol style="list-style-type: none"> 1. The program and test procedure. 2. The protocol of the acceptance tests 3. Order on the launch of the System into trial operation at piloted facilities. 4. The concept of pilot-industrial operation of the System.
Stage number 5. Pilot operation <ol style="list-style-type: none"> 1. Correction of calculation results (comparison with existing or manual calculations) 2. Refinement of the System in accordance with the list of revisions. 3. Updating the working documentation on the system. 4. Logging changes. Elimination of comments on the journal. 5. Reconciliation of calculation results. Monitoring project performance. 6. Putting the system into commercial operation in pilot facilities 	
<ol style="list-style-type: none"> 1. Eliminate, within the agreed time frame, all comments identified as a result of the PSI; 2. Assistance to specialists when working with the System and when comparing the results of work; 3. Refinement (adaptation) of the System in accordance with the list of revisions displayed in the change log; 	<ol style="list-style-type: none"> 1. Protocol for achieving the criteria for pilot operation of the System; 2. Order on the launch of the System in industrial operation at the facilities; 3. The act of receiving and transmitting a software product, taking into account improvements.

5. Appendices

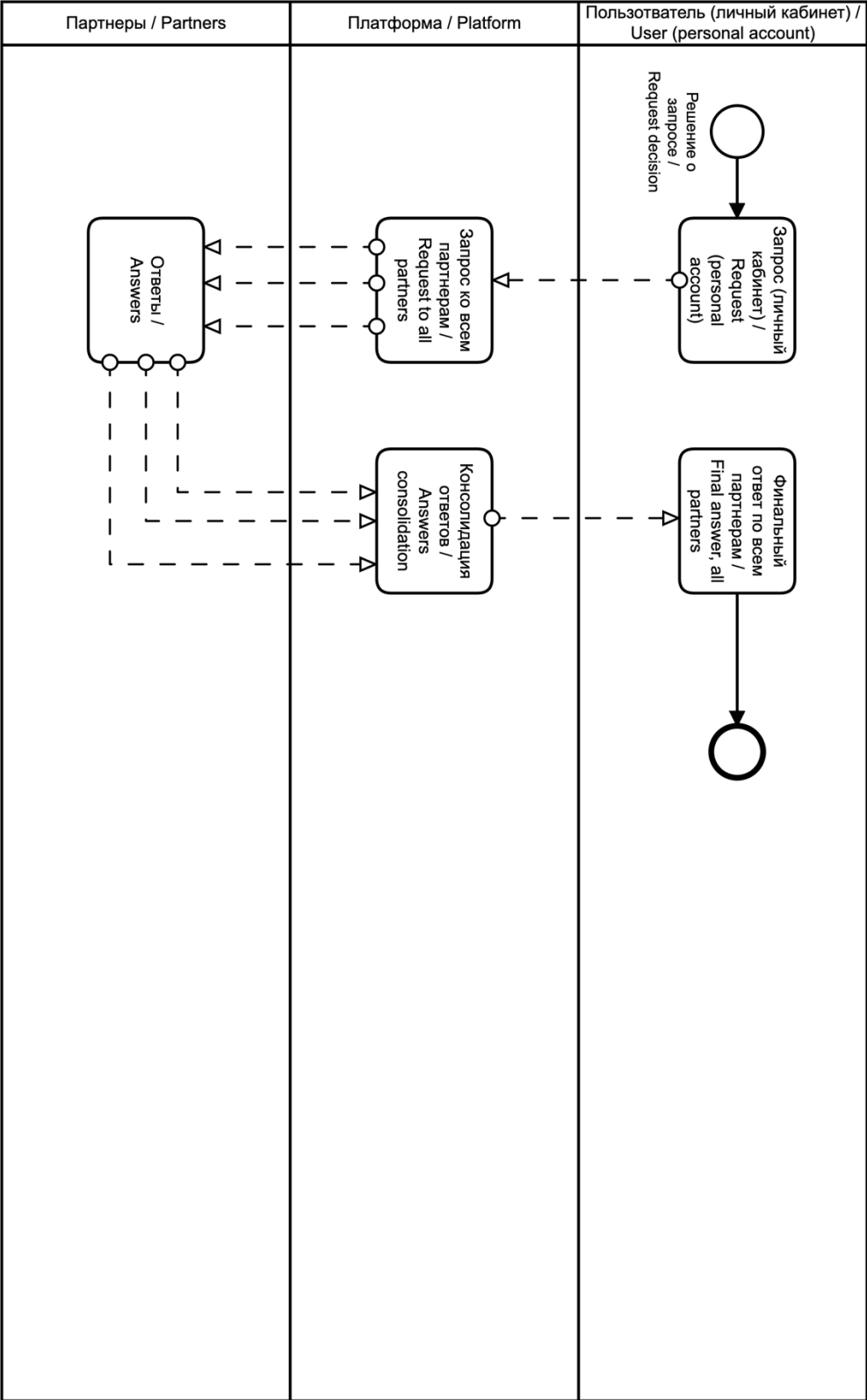
5.1. New partner registration business process



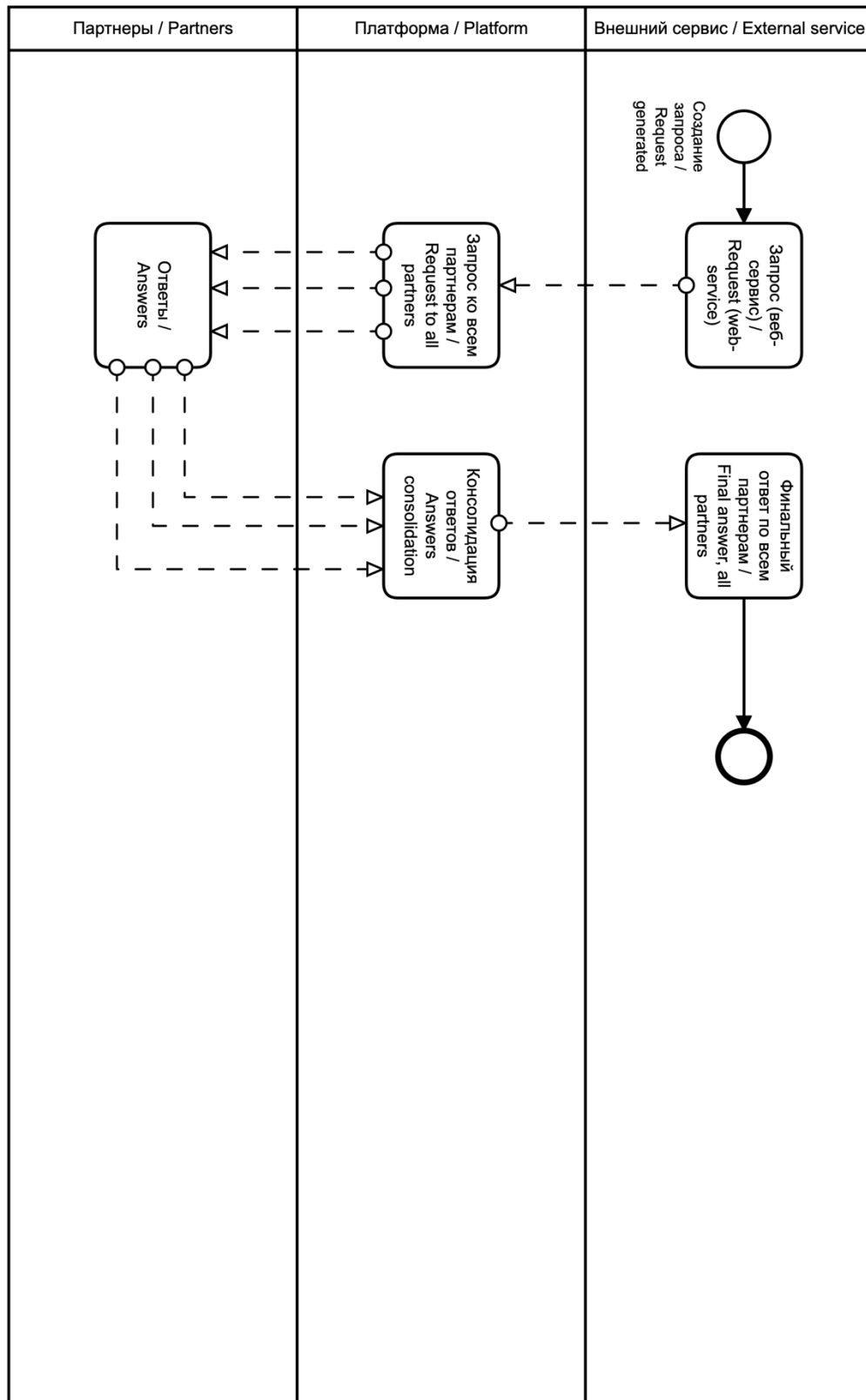
5.2. New service creation business process



5.3. Information request service business process



5.4. Service as a router business process



5.5. Application service business process

