

**MOLDOVA: POLICY ADVICE AND SUPPORT IN LEGISLATIVE DRAFTING FOR EPROCUREMENT REFORM**

**Assignment: MTender Pilot Phase 2**

**Deliverable: Completion report for MConnect integration for MTender**

February 2020

**APPROVAL PAGE**

Chisinau, February 2020

The development completion report for Assignment: MTender Pilot Phase 2 Deliverable: Completing MConnect integration for MTender as well as technical documentation was submitted on the 30th of January 2019 by the TC Project team. Deliverables have been examined by the EBRD OL and are hereby recommended for approval and acceptance.

|  |  |
| --- | --- |
| **Client Name** | EBRD |
| **Project** | MConnect integration for MTender |
| **Date of delivery according to the agreed plan** | 30th January 2019 |
| **Date of submission for Acceptance** | 4th February 2020 |

|  |  |  |
| --- | --- | --- |
| **The output is specified in the table below and includes a list of delivered deliverables.**  **The output is in accordance with approved specifications and complies with all conditions defined in the Contract, as per the Terms of Reference.** | | |
| **Deliverable** | **Deliverable Description** | **Acceptance Date** |
| Deliverable | Development completion report for Assignment: MTender Pilot Phase 2 Deliverable: Completing MConnect integration for MTender |  |
| **All deliverables were prepared in required quality and time and are accepted without open points.**  **Other comments** | | |

|  |  |  |
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**LIST OF ABBREVIATIONS**

|  |  |
| --- | --- |
| Terms / abbreviations | Description |
| API | Application Programming Interface |
| CA | Contracting Authority |
| CDU | Central database unit |
| CPV | Common Procurement Vocabularly |
| CTIF | Center of Informational Technologies in Finance |
| EBRD | European Bank for Reconstruction and Development |
| eGov Agency | Agency for Electronical Governance |
| eProcurement | Electronic Procurement |
| ESPD | European Single Procurement Document |
| IBAN | International Bank Account Number |
| MConnect | Middleware platform which is used by government of Moldova for ensure the interoperability of data. |
| MF | Ministry of Finance of the Republic of Moldova |
| MLog | Government platform for log management |
| MTender | The e-platform is launched by the Ministry of Finance |
| NEPP | Networking Electronic Procurement Platform |
| PSA | Public Service Agency |
| RM | Republic of Moldova |
| SRLE | State Registry of Legal Entities (RSUD in MD) |
| SRP | State Registry of Population (RSP in MD) |

# Document objective

The objective of this document is to present the main results of the European Bank for Reconstruction and Development (EBRD) Project Moldova: “MConnect integration for MTender” that is prepared by Esempla Systems SRL (the Consultant). This report includes project objectives, achievements, development as well as implementation phases and the overall description of the developed software.

# Background

The project is designed to facilitate the integration of the Central Database Unit 2 (CDU\_2) component with 3rd party state registries in order to collect and cross check data via MConnect. The verification was requested for MTender user’s identification and data validation. This was to be done through the development of a set of web services aimed at extracting data from 4 external state registries, export logs in MLog and by providing an Application Programming Interface (API) to facilitate CDU integration via MConnect. The aim of these services was to enable a digital process of data consumption by the final users of MTender through Networking Electronic Procurement Platforms (NEPPs). The role of NEPPs is to facilitate the front office processes, such as tender announcing, offer submission, etc.

The legal framework supporting system integrations and data consumption from 3rd party systems consist of:

1. Collaboration Agreement nr. 3009-99 regarding the usage of interoperability platform MConnect, between Ministry of Finance and eGov Agency (signature date 11.08.2016);
2. Official request nr. 02/2018-1 of Ministry of Finance to eGov Agency to connect to interoperability platform MConnect in order to enable data consumption from 3rd party state systems (signature date 07.08.2018);
3. Additional agreements nr. 4 and its nr. 4 annex regarding data consumption of MTender form State Registry of Population (SRP) and State Registry of Legal Entities (SRLE);
4. Additional agreements nr. 5 and its nr. 5 annex regarding data consumption of MTender from State Treasury (International Bank Account Number (IBAN), Contracting Authority’s (CA) amount availability, etc);
5. Additional agreement nr. 6 and its nr. 6 annex regarding data consumption and data providing of details about acquisitions contracts form MTender system to the State Treasury.

The project also aimed to produce a convenient European Single Procurement Document (ESPD) data validation service for end-users. However, the analysis of data available in the national registers revealed a number of issues which have prevented the full automation of ESPD.

An agreement (the Agreement) between Ministry of Finance of the Republic of Moldova (MF) and Agency for Electronical Governance (EGOV) was signed to provide a legal framework for existing MConnect data consumption via MTender. The development of the integration tools was done in compliance with the official agreement.

# Project objectives

The objective of the Consultant’s assignment is to work with EGOV, MF, Treasury and the CDU developers to design and to develop an integration of the MTender functionality with MConnect to provide:

* stakeholder’s teams’ coordination and facilitating the Agreement between MF and eGov regarding data consumption via MConnect;
* granting data access according to the signed Agreement;
* Web services development, testing and deployment;
* MTender Integration with MLog - the government audit platform.

The MTender – MConnect integration is required to deliver the following features:

1. Get the following data available online:

* GET Citizen – access private individuals data available in the State Register;
* GET Public Organization – access public entities data available in the State Register;
* GET Private Organization – access commercial entities data available in State Register;
* GET IBAN List – receive dedicated International Bank Account Number (IBAN) accounts related to budget allocations from State Treasury;
* GET Budget – access available amounts related to budget allocations from State Treasury;
* GET - Check Budget – verify available amounts related to budget allocations from Treasury;
* POST - Register Contract – transmit contract data to State Treasury;
* GET Contract Queue – check the contract status in the State Treasury;
* PATCH - Confirm Contract – confirm contract registration by the State Treasury.

1. MTender’s logs registration in MLog service:

* POST log
* GET log

Technical features are aimed to be compliant with following project business requirements:

* Suppliers data validation;
* Contracting authorities data validation;
* Budgeting data validation;
* Send contracts to State Treasury
* Contract Registered in State Treasury;
* MTender logs registration.

Testing results show that project objectives have been achieved, requirements have been met and the MConnect integration has been designed, built and implemented, considering the limited availability of data.

# Assumptions and risks

The assumptions made regarding the development objective were:

1. the EGOV supports MConnect data consumption, and the Ministry of Finance, supports integration with MTender;
2. the requested data are not fully available.

The main risk identified was the impossibility to make an automatic ESPD verification for the full data set, as some registers are not electronic, or not yet integrated with MConnect and data cannot be accessed. However, existing data can be used for partial ESPD verification, users identification, budgets validation and contracts registration processes partially used in MTender processes.

The integration of new state registers to MConnect depends on too many factors (law adjustments, available budgets for new state registers implementation), and there are no deadlines or official road map we can rely on.

# Project performance

The business analysis, design and development according to the scope of work, including project management, has been undertaken by the Esempla Systems development team in collaboration with the Center of Informational Technologies in Finance (CTIF) and EGOV, and provided to the UStudio team for MTender integration.

The development efforts were preceded by the analysis of the availability of the necessary data set together with eGov Agency . Hence, MF and the EBRD teams were informed (eGov Agency official letter to EBRD representative in Moldova; nr. 3004-61 from 14.02.2019) about the partially missing data. An agreement between MF and eGov regarding MConnect interoperability platform access was signed (02/2018-1 dated 07.08.2018), together with 3 additional agreements (specified in Background section), listing the available data for consumption by MTender and usage rationale. Based on the agreement eGov Agency published the endpoint for data access.

As was planned, the web services for MTender integration were developed by the Esempla team as follows:

* Work package 1. MTender to consume data about citizen and legal entities from PSA, SRP) and SRLE through MConnect;
* Work package 2. MTender to consume data about IBAN, CA’s debts / available amount, etc. from State Treasury information systems.
* Work package 3. MTender to consume and provide data about acquisition contracts to and from State Treasury information systems;
* Work package 4. MTender to integrate with MLog system.
* Work package 5. API documentation provided to uStudio (EBRD consultant developing the CDU platform) to integrate with developed web services.

All web services were developed accordingly and deployed on the MConnect Testing platform to be tested and validated by the uStudio team. uStudio confirmed via email the readiness of web services to be deployed and the technical documentation. EGOV confirmed the testing results via an official letter addressed to EBRD Moldova (nr. 3004-61 from 14.02.2019).

All services were deployed in the production environment in January 2019 , are available to be used by the MTender platform and can be accessed by NEPPs and be provided to final users during the procurement process.

Legal entities and private individual’s data are accessed for MTender user’s identification during the registration process. Despite the lack of full automated ESPD validation, data from the Tax authority and State registers are accessed online (via MTender) and used by Contracting Authorities (CA) for Economic Operator’s verification during the evaluation process. The request for available IBAN list and funding is submitted by CA from MTender during the planning stage, so data are automatically filled in the planning forms avoiding human errors and additional efforts.

MLog integration Web services were developed according to eGov integration procedure (MLog Integration Guide).

This diagram from Figure 1. represents the architecture of integrations within MTender projects as follows:

1. Integration of MTender / CDU system and MConnect as to consume data from 3rd party state systems ( SRP / RSP, SRLE / RSUD, Tax Service and State Treasury) are done through the MT2Connect connector.
2. Integration of MTender / CDU with MLog service is done through a separate connector, MLog.

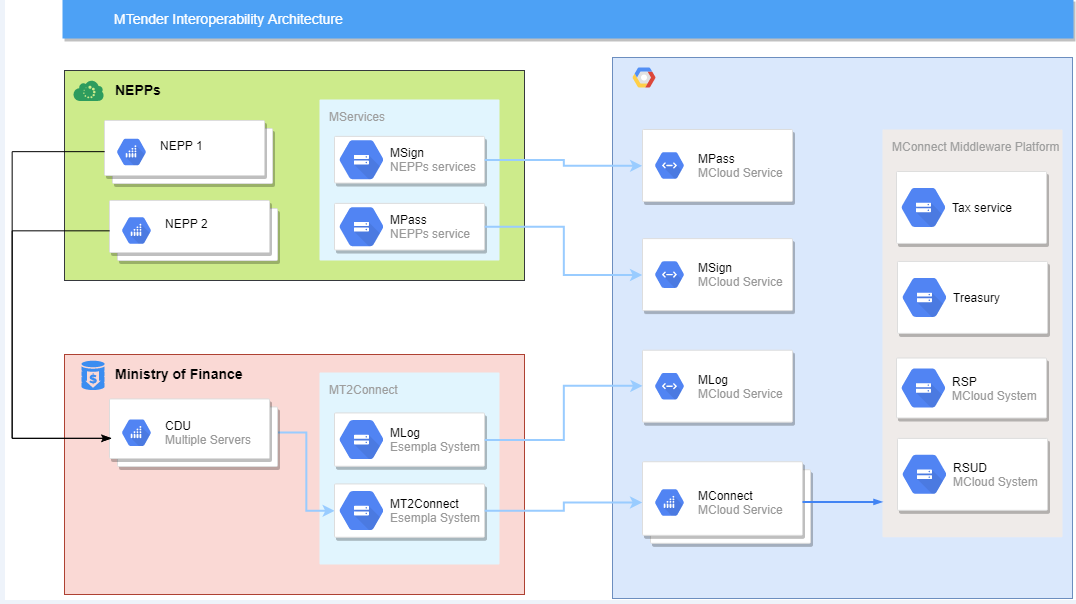


Figure MTender Interoperability Architecture

Table 1 are lists the main deliverables of the project and their status.

Table Project elements

|  |  |  |  |
| --- | --- | --- | --- |
| # | Deliverables | Completion | Stakeholder |
| 1 | Business Analysis | 100% | Esempla Systems, Moldova |
| 2 | Project management | 100% | Esempla Systems, Moldova |
| 3 | Documentation | 100% | Esempla Systems, Moldova |
| 4 | Web services development and testing | 100% | Esempla Systems, Moldova |
| 5 | Web services validation | 100% | uStudio, LCC |
| 6 | MLog integration | 100% | Esempla Systems, Moldova |
| 7 | Legal framework for data interoperability (agreement) | 100% | EGOV and Ministry of Finance, Moldova |

# Project phases and documentation

This section provides an overview of the phases which were performed during the project.

Table Project main phases and their outputs

| # | Phase | Goal | Completion Timeframe | Result/ deliverable |
| --- | --- | --- | --- | --- |
| 1 | Preliminary estimate | A rough estimate presented for works and their costs. It made possible for project sponsor to decide whether to start project execution or not. | July, 2018 | Project budget |
| 2 | Business Analysis | Business analysis investigation was completed and documented to serve as base for official agreement for data access. | July, 2018 | Data availability report |
| 3 | Legal framework | Agreement between MF and eGov regarding MConnect interoperability platform access, request for MTender to access the MConnect interoperability platform (02/2018-1 from 07.08.2018) | August, 2018 | Signed agreement between MF and eGov |
| 6 | Data exposure and access | Endpoints published by eGov and accessed by Esempla | August, 2018 | Published endpoints |
| 7 | Web services development | All (11) web services developed accordingly and deployed on MConnect Testing platform. | August 2018 – November 2018 | Web service functionalities |
| 8 | Integration/ testing | MTender was integrated with MConnect using the web services, tested and deployed on production. | December, 2018 | Integration between CDU and MConnect.  Test run report. |
| 9 | MTender Integration with MLog | Web services developed according to eGov integration procedure described in document (MLog Integration Guide) | December, 2018 | Web services |
| 10 | Containerization, deployment automation and CI/CD enabling | * All developments containerized (dockers) * Deployment automation and CI/CD (Continuous integration and continuous delivery) enabled on MCloud test and production environments based on the following tools (GitLab, GitLab registry, Jenkins) * Technical documentation ready to provide (API, Swagger UI, DockerFile, CI/CD - gitlab-ci.yaml, testing - docker-compose.yml | January, 2019 | Dockers  Technical documentation |
| 11 | Operational services | All services are available to be accessed on MTender by NEPPs |  | The service is in usage. The Project completion report. |

## Project documentation

* Report on the requested versus the available data needed for automated qualification criteria is provided in the following document:



* API documentation for the MConnect integration functionality is available in the following document:



* The source code deposited for this functionality is available at:

https://github.com/MTendereProcurementSystem/MConnect

# Lessons learned

The important lesson learnt during the period of project implementation are as follows:

* The coordination meeting and close contact among teams’ members did avoid misunderstandings, reduce the issues number and accelerate implementation processes.
* The requirements need to be developed taking into consideration the real technical and legal possibilities and constraints.
* Project implementation efficiency depends on stakeholder’s involvement and collaboration.

# Summary

The integration of the MTender platform (CDU\_2 component) with the MConnect interoperability platform successfully achieved the project objectives and met business requirements, as summarized in Project objectives section. Although the MConnect integration was intended initially to allow full ESPD automation, the analysis demonstrated that due to the partial availability of data this automation was not possible. The data usage process had to be adjusted in order to provide maximum opportunities for MTender users to avoid additional efforts and to make another step towards a fully paperless procurement process.

The involvement of project teams during development and implementation stages brought the project to the closure. The integration was designed and developed using modern technologies and in compliance with technological standards. All developments are containerized (dockers) and technical documentation has been provided.

All services are running on production environment, data are available and already used during the procurement process improving MTender users' experience.

# Annex 1 Web services data structure

1. Get Citizen
2. Public Organization
3. Private Organization
4. Get IBAN List
5. Get Budget
6. Check Budget
7. Register Contract
8. Get Contract Queue
9. Confirm Contract
10. Get log
11. Register log

## Get Citizen

Table Receive data about a citizen from the state register of population

|  |  |
| --- | --- |
| Name | Get Citizen |
| URL | https://[<SERVER\_DOMAIN>]/api/v1/citizen/get?idnp={idnp} |
| CURL | curl -X GET "http://127.0.0.1:8800/api/v1/citizen/get?idnp=423654897456" -H "accept: application/json;charset=UTF-8" |
| Request | **GET** /api/v1/citizen/get?idnp=423654897456 HTTP/1.1  Host: 127.0.0.1:8800  User-Agent: curl/7.63.0  accept: application/json;charset=UTF-8 |
| Response | HTTP/1.1 200 OK  Server: nginx  Date: Mon, 14 Jan 2019 15:03:14 GMT  Content-Type: text/html; charset=UTF-8  Transfer-Encoding: chunked  Connection: keep-alive  Strict-Transport-Security: max-age=15768000  {  "IDNP": "423654897456",  "FirstName": "NICU",  "LastName": "ANDREI",  "SecondName": "",  "BirthDate": "1989-05-16T00:00:00.000Z",  "BirthDateStatus": {}  } |

## Public Organization

Table Receive legal entities data from the state register of legal entities

|  |  |
| --- | --- |
| Name | Public Organization |
| URL | https://[<SERVER\_DOMAIN>]/api/v1/organization/public/?idno={idno} |
| CURL | curl -X GET "http://127.0.0.1:8800/api/v1/organization/public?idno=1008400111879" -H "accept: application/json;charset=UTF-8" |
| Request | **GET** /api/v1/organization/public?idno=1008400111879  HTTP/1.1  Host: 127.0.0.1:8800  User-Agent: curl/7.63.0  accept: application/json;charset=UTF-8 |
| Response | HTTP/1.1 200 OK  Server: nginx  Date: Mon, 14 Jan 2019 14:56:46 GMT  Content-Type: text/html; charset=UTF-8  Transfer-Encoding: chunked  Connection: keep-alive  Strict-Transport-Security: max-age=15768000  {  "IDNO": "1008400111879",  "FiscalCode": "1008400111879",  "Name": "Societatea cu Răspundere Limitată TEST SYSTEMS",  "ShortName": "TEST SYSTEMS S.R.L.",  "LegalFormCode": "530",  "PropertyFormCode": "2",  "RegistrationDate": "2010-09-18T00:00:00.000Z",  "Address": {  "Country": {},  "Region": "CHIŞINĂU CENTRU",  "Locality": "mun. Chişinău",  "LocalityCode": {},  "Street": "Stefan Cel Mare",  "StreetCode": {},  "House": "5",  "Block": {},  "Flat": {}  },  "Activities": {  "Activity": [  {  "ActivityCode": "51900",  "ActivityType": "0",  "OrderNumber": "1"  },  {  "ActivityCode": "52480",  "ActivityType": "0",  "OrderNumber": "2"  },  {  "ActivityCode": "51840",  "ActivityType": "0",  "OrderNumber": "3"  },  {  "ActivityCode": "72500",  "ActivityType": "0",  "OrderNumber": "4"  },  {  "ActivityCode": "72200",  "ActivityType": "0",  "OrderNumber": "5"  },  {  "ActivityCode": "64204",  "ActivityType": "0",  "OrderNumber": "6"  }  ]  },  "Founders": {  "Founder": {  "PersonType": "1",  "PersonShortData": {  "IDNP": "423654897456",  "LastName": "NICU",  "FirstName": "ANDREI"  }  }  },  "Conductors": {  "Conductor": {  "PersonalData": {  "IDNP": "423654897456",  "LastName": "NICU",  "FirstName": "ANDREI"  },  "RoleCode": "18"  }  },  "ChefAccount": {  "PersonalData": {  "IDNP": "2005498433030",  "LastName": "ANDRU ELENA",  "FirstName": {}  }  }  } |

## Private Organization

Table Receive data from the state register of legal entities and state tax service (VAT code and budget debts).

|  |  |
| --- | --- |
| Name | Private Organization |
| URL | https://[<SERVER\_DOMAIN>]/api/v1/organization/private?idno={idno} |
| CURL | curl -X GET "http://127.0.0.1:8800/api/v1/organization/private?idno=1009600026622" -H "accept: application/json;charset=UTF-8" |
| Request | GET /api/v1/organization/private?idno=1009600026622 HTTP/1.1  Host: 127.0.0.1:8800  User-Agent: curl/7.64.0  accept: application/json;charset=UTF-8 |
| Response | HTTP/1.1 200 OK  Server: nginx  Date: Thu, 04 Apr 2019 06:28:13 GMT  Content-Type: text/html; charset=UTF-8  Transfer-Encoding: chunked  Connection: keep-alive  Strict-Transport-Security: max-age=15768000  {  "IDNO": "1009600026622",  "FiscalCode": "1009600026622",  "Name": "Societatea cu Răspundere Limitată ESEMPLA SYSTEMS",  "ShortName": "ESEMPLA SYSTEMS S.R.L.",  "LegalFormCode": "530",  "PropertyFormCode": "2",  "RegistrationDate": "2009-08-19T00:00:00.000Z",  "VATCode": "0505949",  "BudgetDebt": "false",  "Address": {  "Country": {},  "Region": "CHIŞINĂU BUIUCANI",  "Locality": "mun. Chişinău",  "LocalityCode": {},  "Street": "Calea Ieşilor",  "StreetCode": {},  "House": "10",  "Block": {},  "Flat": {}  },  "Activities": {  "Activity": [  {  "ActivityCode": "51900",  "ActivityType": "0",  "OrderNumber": "1"  },  {  "ActivityCode": "52480",  "ActivityType": "0",  "OrderNumber": "2"  },  {  "ActivityCode": "51840",  "ActivityType": "0",  "OrderNumber": "3"  },  {  "ActivityCode": "72500",  "ActivityType": "0",  "OrderNumber": "4"  },  {  "ActivityCode": "72200",  "ActivityType": "0",  "OrderNumber": "5"  },  {  "ActivityCode": "64204",  "ActivityType": "0",  "OrderNumber": "6"  }  ]  },  "Founders": {  "Founder": {  "PersonType": "1",  "PersonShortData": {  "IDNP": "XXX",  "LastName": "GRIŢCAN",  "FirstName": "DORIN"  }  }  },  "Conductors": {  "Conductor": {  "PersonalData": {  "IDNP": "XXX",  "LastName": "GRIŢCAN",  "FirstName": "DORIN"  },  "RoleCode": "18"  }  },  "ChefAccount": {  "PersonalData": {  "IDNP": "XXX",  "LastName": "DELITANAS ELENA ALEXANDRU",  "FirstName": {}  }  }  } |

## Get IBAN List

Table Receive IBAN list based on CPV code and Contracting Authority IDNO.

|  |  |
| --- | --- |
| Name | Get IBAN List |
| URL | https://[<SERVER\_DOMAIN>]/api/v1/budget/iban?idno={idno}&cpv={cpv}&year={year} |
| CURL | curl -X GET "http://127.0.0.1:8800/api/v1/budget/iban?idno=1006601243057&cpv=30000000-9&year=2018" -H "accept: application/json;charset=UTF-8" |
| Request | **GET** /api/v1/budget/iban?idno=1006601243057&cpv=30000000-9&year=2018 HTTP/1.1  Host: 127.0.0.1:8800  User-Agent: curl/7.63.0  accept: application/json;charset=UTF-8 |
| Response | HTTP/1.1 200 OK  Server: nginx  Date: Mon, 14 Jan 2019 14:39:27 GMT  Content-Type: text/html; charset=UTF-8  Transfer-Encoding: chunked  Connection: keep-alive  Strict-Transport-Security: max-age=15768000  {  "getIbanList\_response":  {  "iban": [  "MD67JDUPEJ347483D11090PD",  "MD16KDPFUP222400A01225GD"  ]  }  } |

## Get Budget

Table Receive data about budget based on IBAN and budget year.

|  |  |
| --- | --- |
| Denumire | Get Budget |
| URL | https://[<SERVER\_DOMAIN>]/api/v1/budget/get?iban={iban}&year={year} |
| CURL | curl -X GET  "http://127.0.0.1:8800/api/v1/budget/get?iban=MD67JDUPEJ347483D11090PD&year=2018" -H "accept: application/json; charset=UTF-8" |
| Request | **GET** /api/v1/budget/get?iban=MD67JDUPEJ347483D11090PD&year=2018 HTTP/1.1 Host: 127.0.0.1:8800  User-Agent: curl/7.63.0  accept: application/json;charset=UTF-8 |
| Response | HTTP/1.1 200 OK  Server: nginx  Date: Mon, 14 Jan 2019 14:45:56 GMT  Content-Type: text/html; charset=UTF-8  Transfer-Encoding: chunked  Connection: keep-alive  Strict-Transport-Security: max-age=15768000  {  "sum":"29850.00"  } |

## Check Budget

Table Receive data about budget from State Treasury based on IBAN, year and amount

|  |  |
| --- | --- |
| Name | Check Budget |
| URL | https://[<SERVER\_DOMAIN>]/api/v1/budget/check?iban={iban}&year={year}&sum={sum} |
| CURL | curl -X GET "http://127.0.0.1:8800/api/v1/budget/check?iban=MD67JDUPEJ347483D11090PD&year=2018&sum=500" -H "accept: application/json;charset=UTF-8" |
| Request | **GET** /api/v1/budget/check?iban=MD67JDUPEJ347483D11090PD&year=2018&sum=500 HTTP/1.1 Host: 127.0.0.1:8800  User-Agent: curl/7.63.0  accept: application/json;charset=UTF-8 |
| Request | **GET** /api/v1/budget/check?iban=MD67JDUPEJ347483D11090PD&year=2018&sum=500 HTTP/1.1 Host: 127.0.0.1:8800  User-Agent: curl/7.63.0  accept: application/json;charset=UTF-8 |

## Register Contract

Table Register the contract in State Treasury

|  |  |
| --- | --- |
| Name | Register Contract |
| URL | https://[<SERVER\_DOMAIN>]/api/v1/contract/register |
| CURL | curl -X POST "http://[<SERVER\_DOMAIN>]/api/v1/contract/register" -H "accept: application/json;charset=UTF-8" -H "Content-Type: application/json" -d "{ \"header\": { \"id\_dok\": \"id123123\", \"nr\_dok\": \"123\", \"da\_dok\": \"2019-01-13T14:16:59+00:00\", \"suma\": 10, \"kd\_val\": \"123\", \"pkd\_fisk\": \"string\", \"pkd\_sdiv\": \"string\", \"pname\": \"string\", \"bkd\_fisk\": \"string\", \"bkd\_sdiv\": \"string\", \"bname\": \"string\", \"desc\": \"string\", \"reg\_nom\": \"123\", \"reg\_date\": \"2019-01-01T14:15:59\", \"achiz\_nom\": \"123\", \"achiz\_date\": \"2019-01-13T14:15:59+00:00\", \"avans\": 5, \"da\_expire\": \"2020-01-14T14:15:59+00:00\", \"c\_link\": \"string\" }, \"benef\": [ { \"id\_dok\": \"string\", \"bbic\": \"string\", \"biban\": 0 } ], \"details\": [ { \"id\_dok\": \"string\", \"suma\": 0, \"piban\": \"string\", \"byear\": 0 } ]}" |
| Request | **POST** /api/v1/contract/register HTTP/1.1 Host: 127.0.0.1:8800 User-Agent: curl/7.63.0 accept: application/json;charset=UTF-8 Content-Type: application/json Content-Length: 604  {  "header":  {  "id\_dok":"id123123",  "nr\_dok":"123",  "da\_dok":"2019-01-13T14:16:59+00:00",  "suma":10,  "kd\_val":"123",  "pkd\_fisk":"string",  "pkd\_sdiv":"string",  "pname":"string",  "bkd\_fisk":"string",  "bkd\_sdiv":"string",  "bname":"string",  "desc":"string",  "reg\_nom":"123",  "reg\_date":"2019-01-01T14:15:59",  "achiz\_nom":"123",  "achiz\_date":"2019-01-13T14:15:59+00:00",  "avans":5,  "da\_expire":"2020-01-14T14:15:59+00:00",  "c\_link":"string"  },  "benef":  [  {  "id\_dok":"id123123",  "bbic":"string",  "biban":0  }  ],  "details":  [  {  "id\_dok":"id123123",  "suma":10,  "piban":"string",  "byear":2019  }  ]  } |
| Response | HTTP/1.1 200 OK  Server: nginx  Date: Mon, 14 Jan 2019 14:23:59 GMT  Content-Type: text/html; charset=UTF-8  Transfer-Encoding: chunked  Connection: keep-alive  Strict-Transport-Security: max-age=15768000  {  "id\_dok":"string",  "num\_row":"1"  } |

## Get Contract Queue

Table Receive data about contracts queue to be registered in State Treasury.

|  |  |
| --- | --- |
| Name | Get Contract Queue |
| URL | http://[<SERVER\_DOMAIN>]/api/v1/contract/queue?status={status} |
| CURL | curl -X GET "http://[<SERVER\_DOMAIN>]/api/v1/contract/queue?status=3001" -H "accept: application/json;charset=UTF-8" |
| Request | **GET** /api/v1/contract/queue?status=3001 HTTP/1.1  Host: 127.0.0.1:8800  User-Agent: curl/7.63.0  accept: application/json;charset=UTF-8 |
| Response | HTTP/1.1 200 OK  Server: nginx  Date: Mon, 14 Jan 2019 14:01:06 GMT  Content-Type: text/html; charset=UTF-8 T  ransfer-Encoding: chunked  Connection: keep-alive  Strict-Transport-Security: max-age=15768000  {  "contract": [  {  "id\_dok": "id123",  "id\_hist": "1006",  "status": "3001",  "st\_date": "2019-01-11T16:15:39.000+02:00",  "reg\_nom": "string",  "reg\_date": "2019-01-11+02:00",  "descr": {}  },  {  "id\_dok": "id144",  "id\_hist": "1007",  "status": "3001",  "st\_date": "2019-01-11T16:16:31.000+02:00",  "reg\_nom": "string",  "reg\_date": "2019-01-11+02:00",  "descr": {}  }  ]  } |

## Confirm Contract

Table Confirm the contract reception by NEPPs

|  |  |
| --- | --- |
| Name | Confirm Contract |
| URL | http://[<SERVER\_DOMAIN>]/api/v1/contract/confirm |
| CURL | curl -X POST "http://[<SERVER\_DOMAIN>]/api/v1/contract/confirm?id\_dok=id123" -H "accept: application/json;charset=UTF-8" |
| Request | **POST** /api/v1/contract/confirm?id\_dok=id144 HTTP/1.1  Host: 127.0.0.1:8800  User-Agent: curl/7.63.0  accept: application/json;charset=UTF-8 |
| Response | HTTP/1.1 200 OK  connection: keep-alive  content-encoding: gzip  content-type: text/html; charset=UTF-8  date: Mon, 14 Jan 2019 14:04:12 GMT  server: nginx  strict-transport-security: max-age=15768000  transfer-encoding: chunked  {  "id\_dok":"id123",  "num\_row":"1"  } |

## Register log

Table Register critical events in MLog service.

|  |  |
| --- | --- |
| Name | Register log |
| URL | http://[<SERVER\_DOMAIN>]/api/v1/mlog |
| CURL | curl -X POST "http://[<SERVER\_DOMAIN>]/api/v1/mlog" -H "accept: application/json;charset=UTF-8" -H "Content-Type: application/json" -d "{ \"event\_time\": \"2019-01-14T23:12:37.334+02:00\", \"event\_type\": \"MTender.Bid.Open\", \"event\_source\": \"string\", \"event\_message\": \"string\", \"legal\_entity\": \"string\", \"user\_session\": \"string\", \"user\_address\": \"string\", \"amount\": \"string\", \"documents\": [ \"url1|id1|hash1\" ]}" |
| Request | **POST** /api/v1/mlog HTTP/1.1  Host: 127.0.0.1:8800  User-Agent: curl/7.63.0  accept: application/json;charset=UTF-8  Content-Type: application/json  Content-Length: 268  {  "event\_time": "2019-01-14T23:12:37.334+02:00",  "event\_type": "MTender.Bid.Open",  "event\_source": "string",  "event\_message": "string",  "legal\_entity": "string",  "user\_session": "string",  "user\_address": "string",  "amount": "string",  "documents": [  "url1|id1|hash1"  ]  } |
| Response | Http-Code: 200  Server: nginx  Date: Tue, 15 Jan 2019 09:52:59 GMT  Content-Type: application/json;charset=UTF-8  Transfer-Encoding: chunked  Connection: keep-alive  Vary: Accept-Encoding  Strict-Transport-Security: max-age=31536000  {  "timestamp":"1547545979199",  "UID":"e2c57431-0a53-4b2b-b235-27f4944ed3bf"  } |

## Get Log

Table Receive data about critical events registered through MLog service.

|  |  |
| --- | --- |
| Denumire | Get Log |
| URL | http://[<SERVER\_DOMAIN>]/api/v1/mlog |
| CURL | curl -X GET "http://[<SERVER\_DOMAIN>]/api/v1/mlog?legal\_entity=Test&legal\_basis=Test&legal\_reason=Test&user=Test&event\_time\_from=2019-01-14&event\_time\_to=2019-01-15" -H "accept: application/json;charset=UTF-8" |
| Request | **GET** /api/v1/mlog?legal\_entity=Test&legal\_basis=Test&legal\_reason=Test&user=Test&event\_time\_from=2019-01-14&event\_time\_to=2019-01-15 HTTP/1.1  Host: 127.0.0.1:8800  User-Agent: curl/7.63.0  accept: application/json;charset=UTF-8 |
| Response | Http-Code: 200  Server: nginx  Date: Tue, 15 Jan 2019 09:58:14 GMT  Content-Type: application/json;charset=UTF-8  Transfer-Encoding: chunked  Connection: keep-alive  Vary: Accept-Encoding  Strict-Transport-Security: max-age=31536000 {"timestamp":"1547546294631","result":[{"user\_session":"string","amount":"string","event\_type":"MTender.Bid.Open","subject\_type":"Organization","documents":["url1|id1|hash1"],"user\_address":"string","event\_level":"info","event\_source":"string","legal\_entity":"string","event\_message":"string","event\_time":"2019-01-14T23:12:37.334+02:00","@uid":"e2c57431-0a53-4b2b-b235-27f4944ed3bf"},{"user\_session":"string","amount":"string","event\_type":"MTender.Bid.Open","subject\_type":"Organization","documents":["url1|id1|hash1"],"user\_address":"string","event\_level":"info","event\_source":"string","legal\_entity":"string","event\_message":"string","event\_time":"2019-01-14T23:12:37.334+02:00","@uid":"219c594b-a8eb-4ab3-943d-128c5bd41225"}],"pagination":{"record-count":2,"page-size":50}} |