

Micro Data Management Department
Data Collection Unit Service – Central Balance Sheet Office
Bd de Berlaimont - 1000 Brussels - BELGIUM
tel. 02 221 30 01 - fax 02 221 32 66
e-mail: helpdesk.ba@nbb.be - website: www.nbb.be
Company number: 0203.201.340 – RPR Brussel

CENTRAL BALANCE SHEET OFFICE **WEBSERVICES**

TECHNICAL GUIDE

VERSION 0.94.00 (03/12/2021)

CONTENT

1. ABOUT THIS DOCUMENT	3
1.1. ABOUT	3
1.2. DOCUMENT HISTORY	3
1.3. REFERENCES	3
2. ARCHITECTURAL OVERVIEW.....	4
2.1. API ORGANIZATION	4
2.2. PRODUCTS AND SUBSCRIPTION.....	5
3. GETTING ACCESS TO THE WEBSERVICES	5
3.1. REGISTER ON THE API DEVELOPER PORTAL	5
3.2. MANAGE THE KEYS	7
4. WEBSERVICES SPECIFICATIONS	7
4.1. ORGANISATION OF DATA	7
4.2. EXECUTE OPERATIONS	8
5. SUPPORT	10

1. ABOUT THIS DOCUMENT

1.1. ABOUT

This document is targeted to integrators and users of the Central Balance Sheet Office (hereafter CBSO) webservices. The document describes the organization of the API and the procedure to access and test the webservices deployed on the CBSO platform.

Description of the webservices offer and Terms and Conditions are resp. found in *R01* and *R02*. Technical description of the API operations and responses is documented on the *Developer Portal* located at *R03*, description of data representations returned by the webservices is found in *R04*.

1.2. DOCUMENT HISTORY

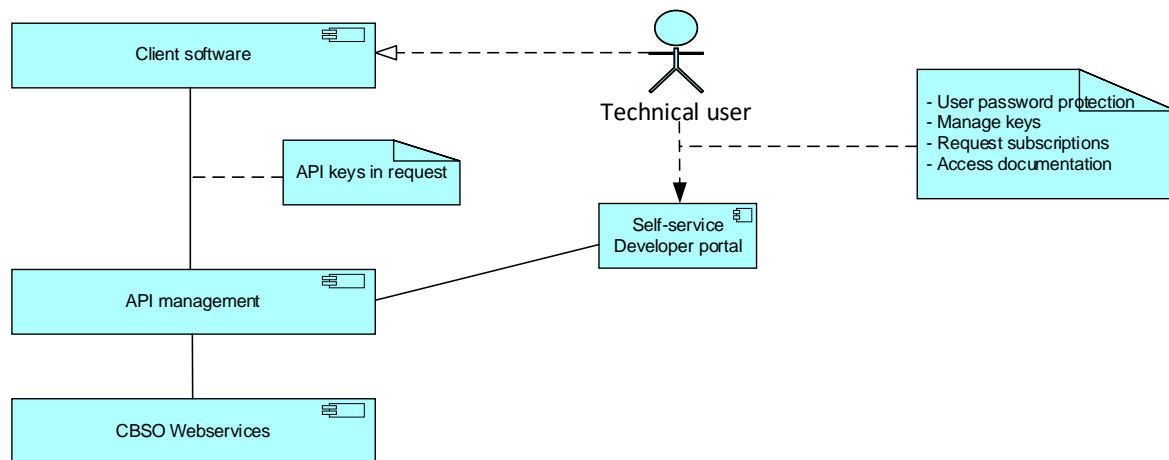
Version	Date	Author	Comment
0.94.00	03/12/2021	Galli G.	Updated for release 0.94.00
0.53.01	08/10/2021	Galli G.	Initial version

1.3. REFERENCES

Id	Description	Resource
R01	Webservices offer description	Webservices nbb.be (FR) and Webservices nbb.be (NL)
R02	Terms and conditions of subscription	Conditions (FR) and Voorwaarden (NL)
R03	Technical description of the API	Developer portal (UAT2) Developer portal (PROD)
R04	Technical description of the representations and codes lists	Webservices - docs nbb.be (FR) and Webservices - docs nbb.be (NL)

2. ARCHITECTURAL OVERVIEW

CBSO webservices give access to data exposed via a REST interface. Several key components are deployed to support the solution.



In this diagram:

- The API Management is a layer between the external user software and the CBSO webservices. This layer manages and controls the access to the different operations exposed by CBSO
- The external users manage their API keys and subscriptions with the CBSO Developer Portal.
- The external users configure their software to provide the API key in the requests sent to the API management.

2.1. API ORGANIZATION

APIs are groups of operations exposed by the CBSO application. 3 API's are currently exposed:

API name	Description	Operations
authentic	Query-based access to authentic data	/legalEntity/{legalEntityId}/references /deposit/{referenceNumber}/reference /deposit/{referenceNumber}/accountingData
extracts	Daily extracts of authentic data	/batch/{date}/references /batch/{date}/accountingData
improved	Query-based & daily extracts of improved annual accounts	/legalEntity/{legalEntityId}/references/improved /deposit/{referenceNumber}/references/improved /deposit/{referenceNumber}/accountingData/improved/corrected /deposit/{referenceNumber}/accountingData/improved/pdf_extracted /deposit/{referenceNumber}/accountingData/improved/euro_converted /batch/{date}/accountingData/improved /batch/{date}/references/improved

Each of the API is exposed by the API management with an URL based on the following naming convention:

https://<env>/<apiName>/operation

Where:

- <env> corresponds to the environment:
 - Test environment: ws.uat2.cbso.nbb.be
 - Production environment: ws.cbso.nbb.be

- <apiName> is the name of the API as mentioned in the previous table, in lower case. Allowed values are “authentic”, “extracts”, “improved”

Example for *production* environment, *authentic* api and */legalEntity/{legalEntityId}/references* operation:

https://ws.cbso.nbb.be/authentic/legalEntity/{legalEntityId}/references

2.2. PRODUCTS AND SUBSCRIPTION

Products are used to structure the commercial offer of the CBSO webservices. Products are also the assets to which a user can subscribe directly from the developer portal. A product is defined for each exposed API to allow direct subscription by end users.

Product name	API name
Query authentic data	authentic
Daily extracts	extracts
Improved data	improved

Subscription represents the access granted to a technical user to an API or to a product. The subscription may be active or inactive and API keys are provided to the user for calling the API in the context of a subscription.

3. GETTING ACCESS TO THE WEBSERVICES

Getting access to the webservices requires two steps.

The first step is contractual and is about obtaining a subscription with the NBB. Procedure and Terms & Conditions are given in *R02*, subscriptions details are given in *R01*.

The second step is technical and is about obtaining API keys. Once the subscription is active, the subscriber can inform the technical user(s) who will obtain API key(s) via the CBSO API developer portal. Only registered users can obtain API keys.

3.1. REGISTER ON THE API DEVELOPER PORTAL

On the developer portal, the webservices user can:

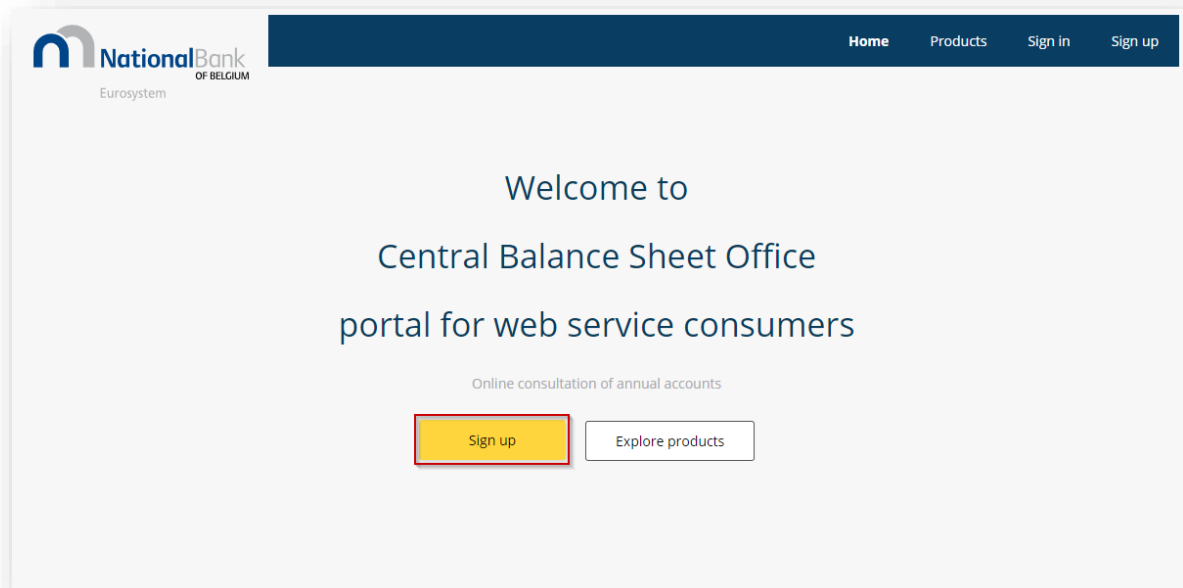
1. Create a profile
2. Request and collect the API keys
3. Manage the API keys

3.1.1. CREATE A PROFILE

As external user:

- Connect to the developer portal:
 - Test environment: <https://developer.uat2.cbso.nbb.be/>
 - Production environment: <https://developer.cbso.nbb.be>
- Sign up and provide email, password, first name, last name, captcha
- Receive email from apimgmt-noreply@mail.windowsazure.com¹ and confirm with the provided link

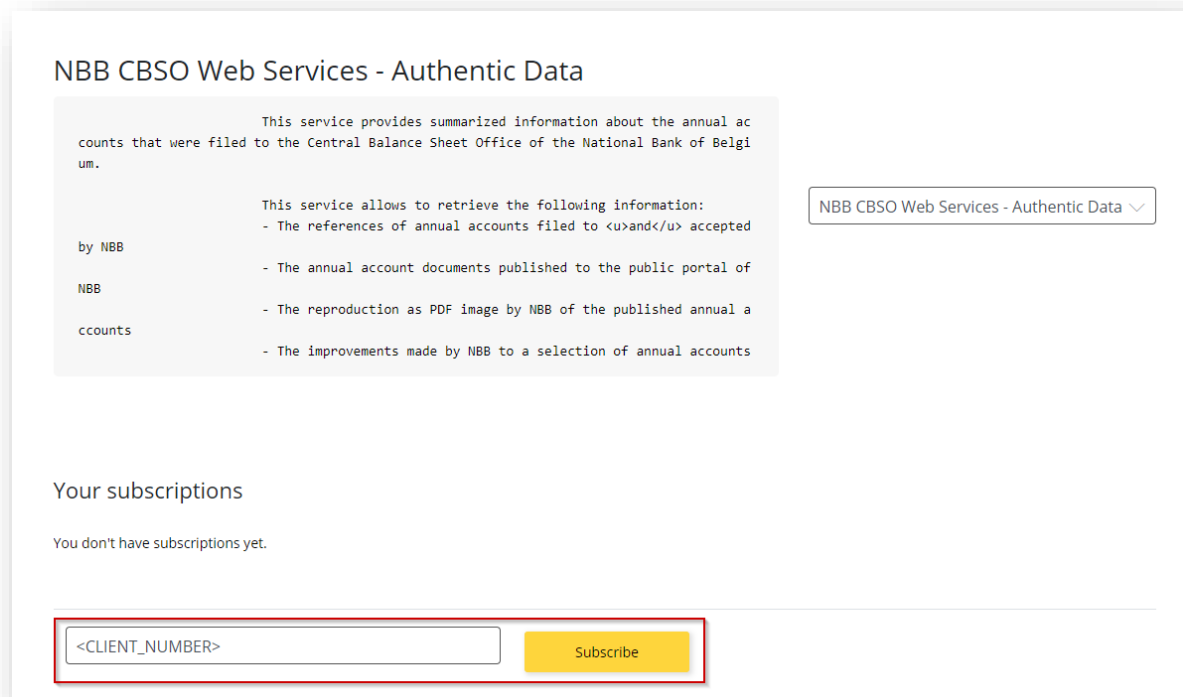
¹ This url may change in a future release



3.1.2. REQUEST AND COLLECT THE API KEYS

As external user:

- Sign-in to the developer portal
- Browse and apply for one or more products
- Fill in the subscription request with the CLIENT_NUMBER. This number is communicated by the NBB to the subscriber of the contract after approval of the Terms & Conditions. The client number is then transferred by the subscriber to the technical user. When using the test environment, any value can be set into the CLIENT_NUMBER field



- Receive *Request confirmation* and *Request approval* emails from apimgmt-noreply@mail.windowsazure.com

- In user profile, find the keys, after approval from NBB

The screenshot shows a user profile page with a dark blue header containing 'Home', 'Products', and 'Profile' (highlighted). The main content area is titled 'User profile' and is divided into two sections: 'Account details' and 'Subscriptions'.

Account details: This section displays user information: Email (gregory.guill@nbb.be), First name (Gregory), Last name (Guill), and Registration date (09/08/2021). Below this information are three buttons: 'Change name', 'Change password', and 'Close account'.

Subscriptions: This section contains a table with columns for 'Subscription details', 'Product', 'State', and 'Action'. The table lists one subscription with the following details:

Subscription details	Product	State	Action
Name: CLIENT_0000 Started on: 09/09/2021 Primary key: [Redacted] Secondary key: [Redacted]		Active	Cancel Show Regenerate Show Regenerate

Access request will be granted by NBB:

- If the CLIENT_NUMBER specified upon request relates to an active client number (prod only)
- After approval from NBB staff member²

Notice that API keys are delivered per *Product*. When accessing several *Products*, several access requests must be performed in the Developer portal to obtain the keys for each of the required *Product*.

3.2. MANAGE THE KEYS

In the user profile, for each subscription, the technical user can:

- Access two keys (primary and secondary): it allows rollout and revocation of the keys without breaking the existing accesses (when a key is used, the second one can be replaced in the portal)
- Regenerate the keys (e.g.: to cope with own policy or in case the key would be compromised)

4. WEBSERVICES SPECIFICATIONS

4.1. ORGANISATION OF DATA

Data made available through the webservises are data related to the deposits filled to the NBB Central Balance Sheet Office. Data consists in:

- *References* of deposits: the unique reference number assigned by the NBB and the main key-data linked to the deposit (e.g.: legal entity number, deposit date ...)
- *Representations* of deposit: representations of the deposit data in XBRL, PDF and JSON. Each representation is linked to the unique reference number of the deposit. The representations are described in more details in *R04*

When accessing the webservises, two data retrieval modes are considered:

- Query mode, typically used in two steps:
 - First, obtain the (list of) reference(s) for a given legal entity
 - Then, obtain one or more representations for a given reference
- Batch mode, used in one step:

² In case of need, please contact NBB helpdesk at helpdesk.ba@nbb.be

- Obtain all data of one kind (all references or all XBRL representations or all PDF representations or all JSON representations) as a zip of files for a given date

Here is the retrieval mode approach for each operation:

API name	Retrieval mode	Operations
authentic	Query-based	/legalEntity/{legalEntityId}/references /deposit/{referenceNumber}/reference /deposit/{referenceNumber}/accountingData
extracts	Batch	/batch/{date}/references /batch/{date}/accountingData
improved	Query-based	/legalEntity/{legalEntityId}/references/improved /deposit/{referenceNumber}/references/improved /deposit/{referenceNumber}/accountingData/improved/corrected /deposit/{referenceNumber}/accountingData/improved/pdf_extracted /deposit/{referenceNumber}/accountingData/improved/euro_converted
improved	Batch	/batch/{date}/accountingData/improved /batch/{date}/references/improved

Description of the content of data as well as restrictions regarding availability of historical data are documented in *R02*. Technical information over the API operations, parameters and responses can be retrieved from the *Developer portal* in different formats (openAPI, Swagger ...), see reference *R03*.

4.2. EXECUTE OPERATIONS

The CBSO webservices are exposed via a REST interface. To be able to retrieve data via the webservices, the user will:

- Setup a client software
- Configure the API operation with:
 - The API Key:
 - Obtained via the Developer portal
 - Set into “**NBB-CBSO-Subscription-Key**” (query parameter or HTTP header)
 - The request ID:
 - Client-side generated UUID. The request ID is used to log the information related to the request. In case of debugging required, the communication of the UUID will help to identify the logs related to the request
 - Set into “**X-Request-Id**”
 - The media-type for the returned object
 - See documentation in *R04* for allowed values per operation
 - Set into “**Accept**”
 - If any, the parameters required for the selected operation
- Execute the request:
 - The UUID should be unique for each request
 - Request timeout is set to 120 sec

4.2.1. SAMPLE 1 - QUERY BY LEGAL ENTITY AND OBTAIN THE PDF REPRESENTATION

1) The 1st operation connects to the API “authentic” and requests all references for legal entity 0203201340:

```
#-- Get references for legal entity 0203201340
GET https://ws.cbso.nbb.be/authentic/legalEntity/0203201340/references
X-Request-Id: 1c55dcd8-2fbc-9523-fc23-9655c35e2e3f
NBB-CBSO-Subscription-Key: 6df61219188728ebb78db5c0cc9aeb2f
Accept: application/json
```


The response is a JSON object containing the list of references, each reference is identified by a unique reference number. Here, only one reference is returned, having 2021-00000148 as reference number:

```
[
  {
    "ReferenceNumber": "2021-00000148",
    "DepositDate": "2021-12-07",
    "ExerciseDates": {
      "startDate": "2020-01-01",
      "endDate": "2020-12-31"
    },
    "ModelType": "m02-f",
    "DepositType": "Initial",
    "Language": "NL",
    "Currency": "EUR",
    "EnterpriseNumber": "0203201340",
    "EnterpriseName": "Nationale Bank van België",
    "Address": {
      "Box": null,
      "City": "Bruxelles",
      "CountryCode": "BE",
      "Number": "14",
      "PostalCode": "1000",
      "Street": "Boulevard de Berlaimont"
    },
    "LegalForm": "014",
    "LegalSituation": "000",
    "FullFillLegalValidation": true,
    "ActivityCode": null,
    "GeneralAssemblyDate": "2021-06-01",
    "AccountingDataURL": "https://ws.cbso.nbb.be/authentic/deposit/2021-00000148/accountingData",
    "DataVersion": "Authentic",
    "ImprovementDate": null,
    "CorrectedData": null
  }
]
```

2) The 2nd operation connects to the API "authentic" and requests the PDF representation for the reference number 2021-00000148:

```
#-- Get image as PDF for reference 2021-00000148
GET https://ws.cbso.nbb.be/authentic/deposit/2021-00000148/accountingData
X-Request-Id: dc4e66d7-4fff-1223-dc37-1235c36e1e4c
NBB-CBSO-Subscription-Key: 6df61219188728ebb78db5c0cc9aeb2f
Accept: application/pdf
```

The response is the PDF representation of the deposit having 2021-00000148 as reference.

4.2.2. SAMPLE 2 – QUERY ALL XBRL REPRESENTATIONS FOR DATE D

This operation connects to the API “extracts” and requests all XBRL published by NBB-CBSO on date 16/09/2021:

```
#-- Get all images as a zip file for date 2021-09-16
GET https://ws.cbso.nbb.be/extracts/batch/2021-09-16/accountingData
X-Request-Id: 1c55dcd8-2fbc-9523-fc23-9655c35e2e3e
NBB-CBSO-Subscription-Key: f87721d9f8af4fc5c4d5b5fd3b8f4766
Accept: application/x.zip+xbrl
```

The response is a zip file with all XBRL of deposits published on date 16/09/2021.

5. SUPPORT

Incidents and technical questions can be reported to helpdesk.ba@nbb.be. See *R02* for support organization.

--- End of document ---