MtS-ISL-SUD-SDNS for ARM

Transaction Reporting (Article 26 of MiFIR)
Commodities Position Reporting (Article 58 of MiFID II)

This tutorial describes how to send Transaction or Commodities Reports in ISO 20022 format to the CNB data collection system via the web service interface.

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Changelog:

Version	Date	Author	Changes
0.1	2017-05-15	Jan Diviš	Structure and initial content
0.2	2017-05-30	Jan Diviš	Added chapter with internal codes for submissions
0.3	2017-06-07	Jan Diviš	Chapter on Feedback message, SOAP Request Example
0.4	2017-06-08	Jan Diviš	Distinction between test/production, formatting
0.5	2017-06-19	Jan Diviš	Ready for distribution
0.6	2017-12-13	Jan Diviš	Link to the SFTP HUB documentation

Introduction

If you operate the ARM service with the intention to send data to the Czech National Bank, this document is a great place to start for the web service interface. Before you continue reading, please be sure that you are interested solely in web services – there is also the possibility to use an FTP interface, which is <u>described here</u> and might also fit your needs.

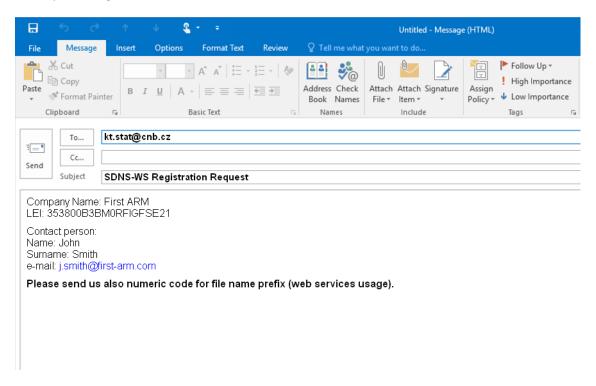
Our comprehensive system called MtS-ISL-SUD-SDNS is ready to accept ISO 20022 files containing Transaction Reports and Commodity Derivatives Reports under MiFID II/MiFIR legislation. Although our system provides several channels and formats suitable for common national reports, this document focuses on the web service method designed for ISO 20022 files only. There are several steps you need to take to be able to send us your submissions – registration, building the header, calling the service with valid parameters and receiving the feedback message file.

Prerequisites - registration

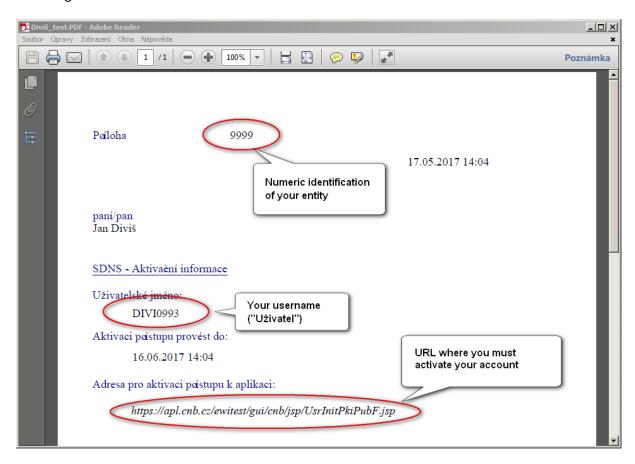
First, we want to know you and we need to store your public key of the certificate you will use to sign the messages containing your reports. The web portal supporting these functions is called SDNS and can be reached at

https://apl.cnb.cz/ewi/

Send us a registration request (to mailto:kt.stat@cnb.cz) with basic information about your company and the person who will be in charge (whose certificate will be used for signing your submissions). We specifically require: company name and LEI, first name and last name, e-mail and a short note that you would like to use web services, expressed as a request for an extra numeric code for file name prefix; e.g.:



We will register you and you will receive an automatic e-mail with a PDF attachment containing the following information:



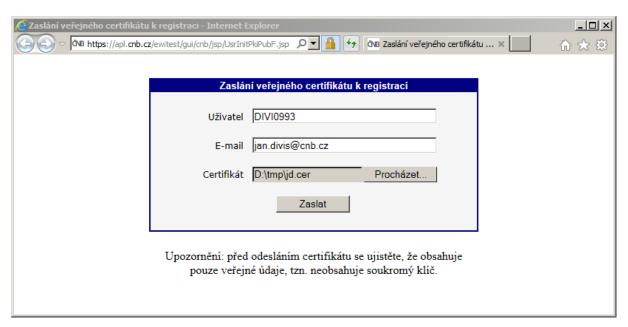
The numeric code for the file name prefix (hereinafter referred to as NNN) is not part of the PDF attachment and you will find it directly in the body of the e-mail.

Then go to the URL address in the attachment (please note the address in the example is for testing purposes only and you must use the actual address you will receive, which will be **for the production environment only**¹). Unfortunately, the user interface of SDNS is available only in Czech, but we have prepared a number of screenshots to help you go through the registration process smoothly.

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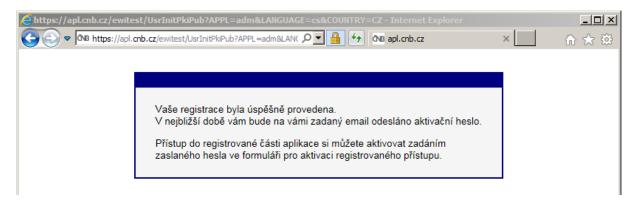
¹ All tests are performed in the production environment and the distinction between test and production data is given by the value of attribute KOD of element FUNKCE-ZPRAVY – see the chapter called MtS–header structure.

In your favorite browser, fill in the opened form with the information you have just received and add the exported public key of the certificate you intend to use for singing:



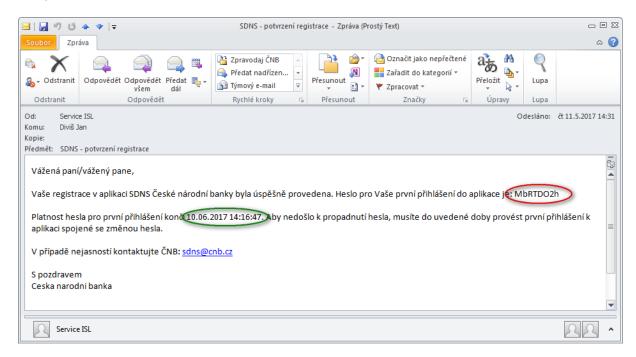
Use the same e-mail address as you provided in the registration request.

Press the "Zaslat" (Send) button, and if everything goes well, you should see following message:



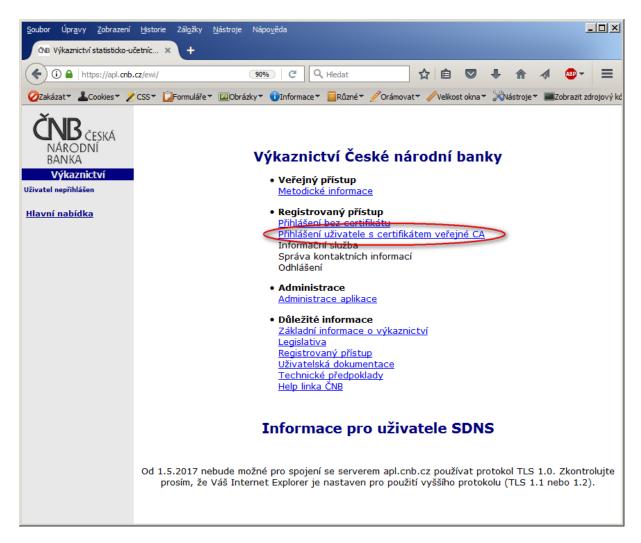
It says that your registration was successfully finished and you will receive an activation password soon.

You password is then sent in an e-mail which looks like this:

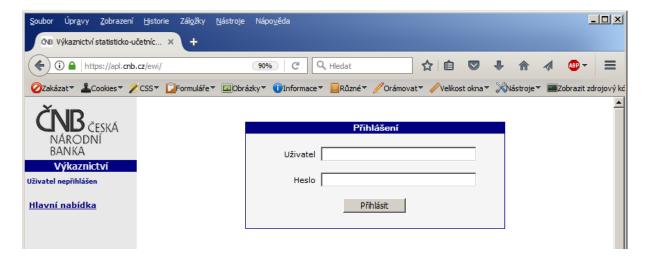


The red circle indicates where you should look up your password. There is also information regarding the time limit within which you should go through first login (the green circle), but do not worry, it is roughly one month from the time of your registration.

Now open https://apl.cnb.cz/ewi/ and find the longest link, which serves for login of users with certificates:



The next screen will prompt you for the login ("Uživatel") and password ("Heslo") you have just received via e-mail.



After successful login, you will be prompted to change your password. Be careful – you must not use the same password as the initial one; it must be 8–20 characters long and must contain a combination of letters and capital letters, and at least one number.

Although you won't work directly with the SDNS portal, you are now ready to send your reports signed with the certificate you used during the registration.

Available reports - codes

There are only two reports for which ISO 20022 is supported. Please use the appropriate codes to identify the report you are sending to us – these codes are used within the MtS-header in elements <METODIKA> and <DATOVY-SOUBOR>.

MiFID/MiFIR report	Master Code <metodika></metodika>	Full Report Code <datovy-soubor></datovy-soubor>
Transaction Report	MKT20180103.01	TRAFIM10.01.00
Commodities Report	MKT20180103.01	KOMFIM10.01.00

Table 1 – list of internal codes for ISO 20022 submissions

Web service

Now you are ready to send us a file through the web service interface. The method is called "loadData" and can be reached at https://apl.cnb.cz/ewi-isows/ZaslaniDatlSOSoapHttpPort. You can find the appropriate WSDL at https://apl.cnb.cz/ewi-isows/ZaslaniDatlSOSoapHttpPort?WSDL.

Request

The calling of the method must be implemented as a standard SOAP request send over the HTTP(S) protocol. Please see the chapter called SOAP Request Example for a full example.

The parameters are as follows:

```
<filename xsi:type="xsd:string">
```

The following pattern is required: ws<NNN><XXXXXXX>.xml, where NNN is the key assigned to you during the registration process and XXXXXXX is a unique number; you can number your files from 0000001 to 9999999.

```
<username xsi:type="xsd:string">
```

Use the username we provided to you as a login for the SDNS portal.

```
<password xsi:type="xsd:string">
```

Use the password you set up in the previous steps.

```
<zipMethod xsi:type="xsd:string">
```

The options are ZIP / GZIP / NONE. We strongly recommend that you use the ZIP or GZIP option.

```
<signatureMethod xsi:type="xsd:string">
```

If you signed the file for us, use <u>PKCS7</u>. Otherwise NONE can be used (for testing purposes only).

```
<mtsHeader xsi:type="xsd:base64Binary">
```

Enter a metadata file according to the structure described in the <u>MtS-header structure</u> chapter, encoded as a base64 string.

```
<inputData xsi:type="xsd:base64Binary">
```

This is the place for your ISO 20022 XML report according to ESMA specification. Enter it encoded as a base64 string.

```
<language xsi:type="xsd:string">
```

Use "cs" or "en" for the localization of the response.

```
<country xsi:type="xsd:string">
```

Use "CZ" or "US" for the localization of the response.

Response

There are various error responses, but hopefully you will see only the following structure indicating that we received your report (SOAP Envelope omitted):

In case of error, you will also receive an e-mail with a TXT attachment including a detailed log – please note that there is a time lapse and you won't receive the log immediately. For downloading the ISO 20022 feedback file, see the next chapter.

See the chapter called <u>DTD for ZaslaniDatISO response</u> for a description of *ZaslaniDatOdpoved.dtd*.

Feedback message

The web service for getting the feedback message file (also status advice file) is published under https://apl.cnb.cz/ewi-isows/ProtokollSOSoapHttpPort?WSDL. It is named *getProtocol* and expects the following parameters:

```
<filename xsi:type="xsd:string">
```

Name of the source file of the reported submission (e.g ws9990005117.xml).

All other parameters:

```
<username xsi:type="xsd:string">
<password xsi:type="xsd:string">
<language xsi:type="xsd:string">
<country xsi:type="xsd:string">
```

are the same as for the "loadData" method, please see the Request chapter.

MtS-header structure

Although there is a Business Application Header (BAH) section in your ISO 20022 message, another header needs to be placed in a separate file (MtS-header). There are two ways to prepare the MtS-header file. You can either modify the structure according to Attachment 1 or, if you want to be sure that the header is correct, download it via the SDNS portal.

The structure of the MtS-header file

```
<?xml version="1.0" encoding="UTF-8"?>
<VYDANI>
       <IDENTIFIKACE-ZPRAVY>
              <ZASLAL>9999</ZASLAL>
              <CISLO-ZPRAVY>20150430030523</CISLO-ZPRAVY>
              <NAZEV-DOKUMENTU KOD="Vydání-výskytu-výkazu"></NAZEV-DOKUMENTU>
              <METODIKA>MKT20180103.01
              <FUNKCE-ZPRAVY KOD="Testovac1"></funkCE-ZPRAVY>
              <DATUM>20170512
       </IDENTIFIKACE-ZPRAVY>
       <ADRESA STRANA="Odesilatel">
              <KOD-SUBJEKTU>9999</KOD-SUBJEKTU>
              <NAZEV-SUBJEKTU>Name of your entity</NAZEV-SUBJEKTU>
              <MESTO>City</MESTO>
              <PSC>zip code</PSC>
              <ULICE>Street name</ULICE>
              <KONTAKT KOD-FUNKCE="Osoba-odpovědná-za-obsah">
                     <JMENO-OSOBY>Name and Surname/JMENO-OSOBY>
              </KONTAKT>
       </ADRESA>
       <IDENTIFIKACE-VYKAZU>
              <DATOVY-SOUBOR>TRAFIM10.01.00/DATOVY-SOUBOR>
              <VYSKYT>
                      <SUBJEKT>9999</SUBJEKT>
                      <ROZSAH-SUBJEKTU>S BCPZB</ROZSAH-SUBJEKTU>
                     <STAV-KE-DNI>20180103/STAV-KE-DNI>
              </VYSKYT>
              <STATUS KOD="Nová-data"></STATUS>
              <DUVOD KOD="Na-základě-metodiky"></DUVOD>
              <AUDIT KOD="Data-před-auditem"></AUDIT>
       </IDENTIFIKACE-VYKAZU>
</VYDANI>
```

Comments for selected elements:

<zaslal>9999</zaslal> - numeric identification of your entity, see the chapter called Prerequisites.

<metodika>мкт20180103.01</metodika> — internal identification — please see table 1 in the chapter called Available reports — codes

<DATUM>20170512</DATUM> - date when the report is submitted (referenced as "R" in ESMA specification), the format is YYYYMMDD

<punkce-zpravy kod="testovací"></punkce-zpravy> - use the KOD attribute value set to "Testovací"
for testing purposes and "Ostrá" for production use.

<Datovy-souBor>Trafim10.01.00</patovy-souBor> - identification of report - please use table 1 in the
chapter called Available reports - codes

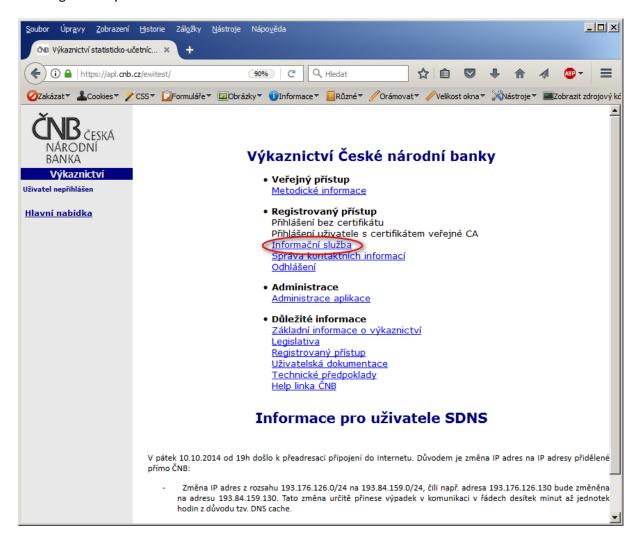
<subject>9999</subject> - numeric identification of your entity, same as <ZASLAL>

<stav-ke-dni>20180103</stav-ke-dni> - date when the transaction is executed (T). We are aware that you may submit transactions executed over several days and the appropriate dates are part of the submitted data, so just use the same value as for <datum>, the format is YYYYMMDD.

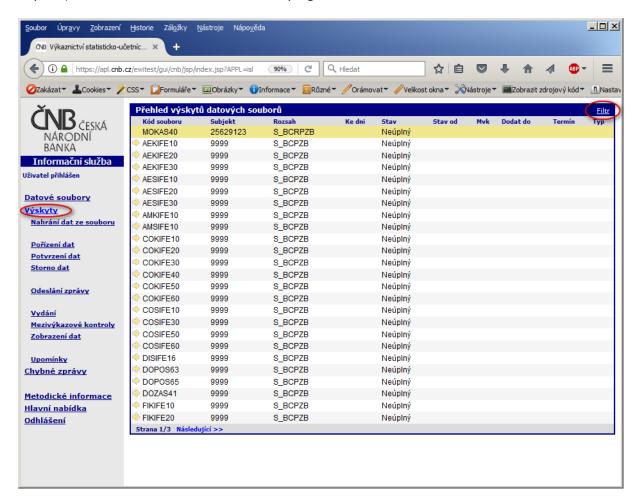
How to generate a header using the SDNS portal

If you are not sure whether your header file is correct, there is also possibility to download such a file from the SDNS portal.

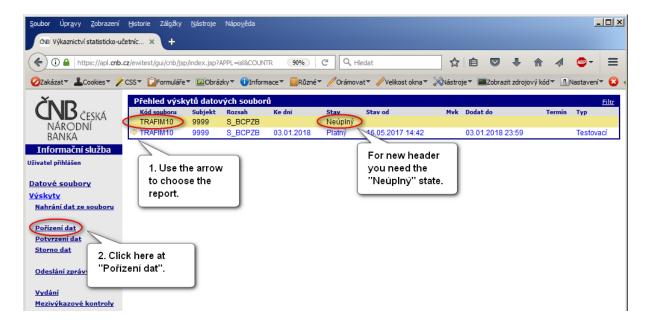
First log in with you credentials and choose the link "Informační služba":



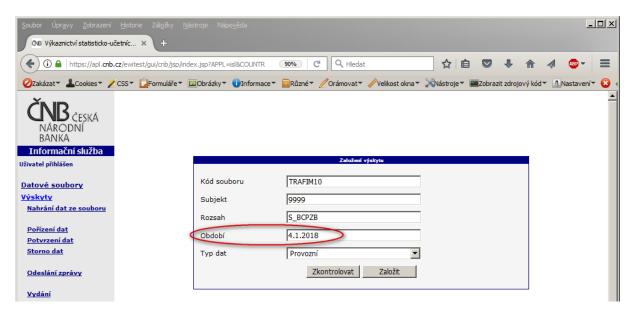
Then click on "Výskyty" and find the report you want to send us (e.g. TRAFIM10 for Transaction Reports). You can use the "Filtr" link in the top right corner:



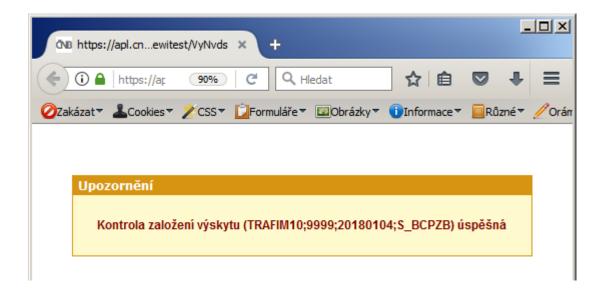
Select the report with the yellow arrow (unless it is already selected) and then choose "Pořízení dat" from the left menu:



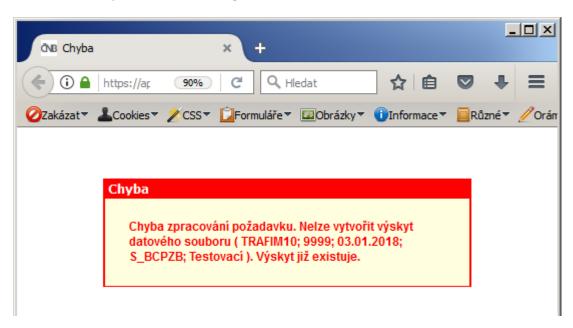
Now fill in the date assigned to the report (the day you want to send the data):



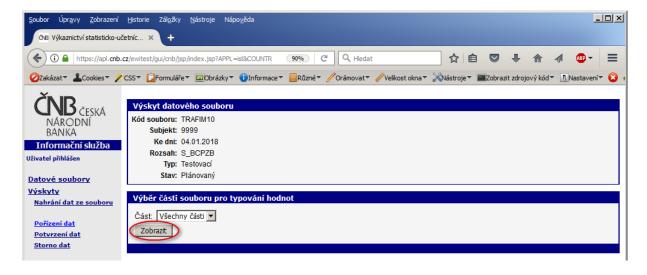
You can check whether everything is correct with the "Zkontrolovat" ("Check") button and you should see a message similar to this one:



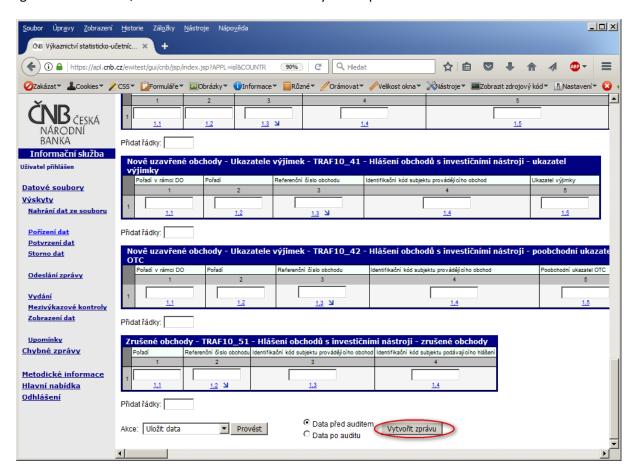
In case of error, you will see a message similar to this one:



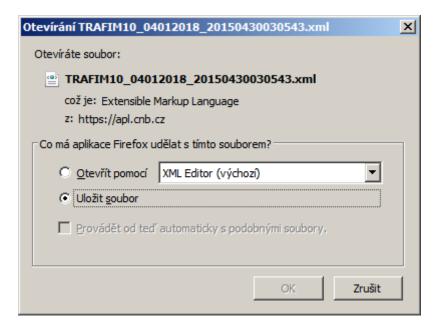
In most cases like this, you have entered the wrong date for the day already used. Try another date and if you are successful, just close the confirmation window and click on the "Založit" button. It brings you to the following form:



You only need to click on the "Zobrazit" button and now you can see the report visualization. Please ignore all the fields, scroll down and click on the "Vytvořit zprávu" button:



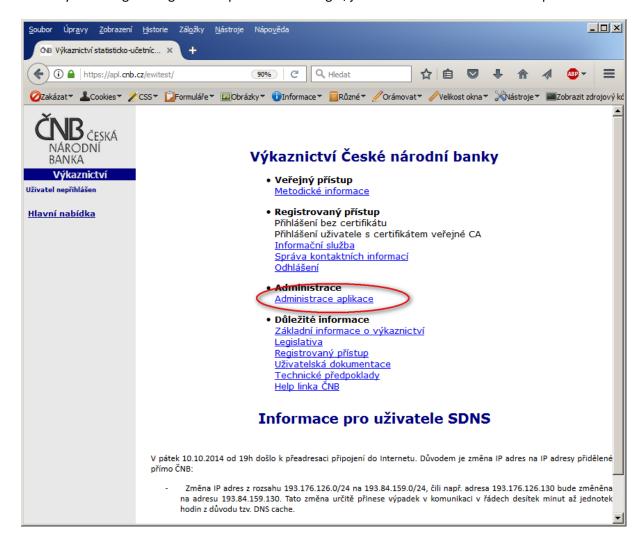
Your header is now ready and you will be prompted to save it as an XML file:



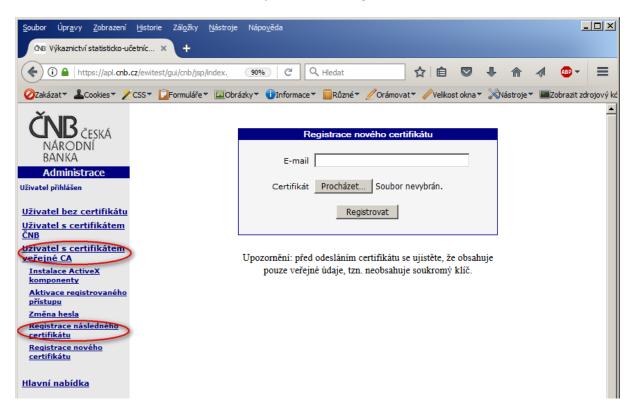
The downloaded header is now ready to be used directly in the web service.

Renewing you certificate

If your certificate has expired or you would like to use a different one, you can easily upload one similarly as during the registration process. After login, just click on the "Administrace aplikace" link...



...and choose "Uživatel s certifikátem veřejné CA" and "Registrace nového certifikátu".



Type your e-mail and upload the *.cer file containing the public key of your certificate (the "Procházet" button opens the File dialog). Please use the CER option (.cer extension) for exporting the certificate. Finish with the "Registrovat" button.

References

ESMA guidelines on transaction reporting under MiFID II and MiFIR https://www.esma.europa.eu/press-news/esma-news/esma-provides-guidance-transaction-reporting-order-record-keeping-and-clock

DTD for ZaslaniDatISO response

```
<?xml version="1.0" encoding="UTF-8"?>
<!ELEMENT status ((messages?))>
<!ATTLIST status
category CDATA #IMPLIED
code CDATA #IMPLIED
>
<!ELEMENT messages ((message*))>
<!ELEMENT message EMPTY>
<!ATTLIST message
type (error | warn | info) #REQUIRED
value CDATA #REQUIRED
>
<!ELEMENT responseSent (#PCDATA)>
<!ELEMENT requestReceived (#PCDATA)>
<!ELEMENT filename (#PCDATA)>
<!ELEMENT LoadDataResponse ((filename, requestReceived, responseSent, status))>
```

SOAP Request Example

loadData

Full SOAP request taken from SoapUI.

```
<soapenv:Envelope</pre>
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:wsim="http://wsimpl.ewiautom.cz.ness.com/"
xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
   <soapenv:Header><wsse:Security xmlns:wsse="http://docs.oasis-</pre>
open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd"
xmlns:wsu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-
wssecurity-utility-1.0.xsd"/></soapenv:Header>
   <soapenv:Body>
      <wsim:loadData</pre>
soapenv:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/">
         <filename xsi:type="xsd:string">ws9990005122.xml</filename>
         <username xsi:type="xsd:string">DIVI4672</username>
         <password xsi:type="xsd:string">*******</password>
         <zipMethod xsi:type="xsd:string">GZIP</zipMethod>
         <signatureMethod
xsi:type="xsd:string">PKCS7</signatureMethod>
         <mtsHeader
xsi:type="xsd:base64Binary">PD94bWwqdmVyc2lvbj0iMS4wIiBlbmNvZGluZz0i
d2luZG93cy0xMjUwIj8+DQo8IURPQ1RZUEUgVllEQU5JIFNZU1RFTSAidnlkYW5pLmR0
ZCI+DQo8V11EQU5JPq0KCTxJREVOVE1GS...
//shortened for clarity
</mtsHeader>
         <inputData id="inputData"</pre>
xsi:type="xsd:base64Binary">PD94bWwgdmVyc2lvbj0iMS4wIj8+DQo8Qml6RGF0
YSB4bWxuczp4c2k9Imh0dHA6Ly93d3cudzMub3JnLzIwMDEvWE1MU2NoZW1hLWluc3Rh
bmNlIiB4bWxucz0idXJuOmlzbzpZ1R4UnB0Pq0KICA8L0RvY3VtZW50Pq0KICA8L1B5b
GQ+DQo8L0JpekRhdGE+DQo=...
//shortened for clarity
</inputData>
         <language xsi:type="xsd:string">en</language>
         <country xsi:type="xsd:string">US</country>
      </wsim:loadData>
   </soapenv:Body>
</soapenv:Envelope>
```

getProtocol

SOAP request for *getProtocol* method:

```
<soapenv:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-</pre>
instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/"
xmlns:wsim="http://wsimpl.ewiautom.cz.ness.com/">
   <soapenv:Header/>
   <soapenv:Body>
      <wsim:getProtocol</pre>
soapenv:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/">
         <filename xsi:type="xsd:string">ws9990005122.xml</filename>
         <username xsi:type="xsd:string">DIVI4672</username>
         <password xsi:type="xsd:string">******</password>
         <language xsi:type="xsd:string">en</language>
         <country xsi:type="xsd:string">US</country>
      </wsim:getProtocol>
   </soapenv:Body>
</soapenv:Envelope>
```