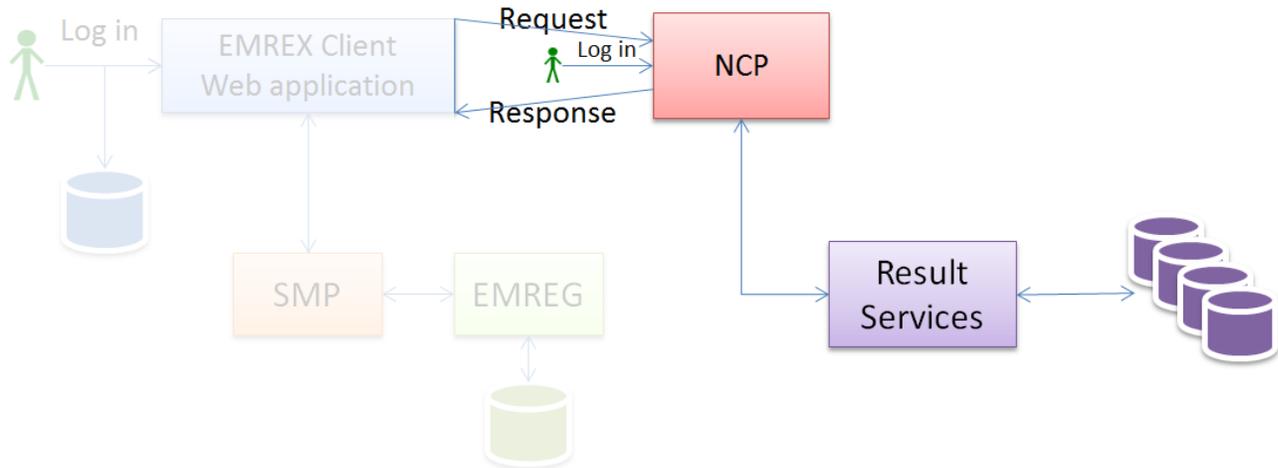


Implementation details: NCP

NCP is short for National Contact Point, and will be the entry point that Emrex will use to fetch data from a country.



NCP tasks

1. The NCP receives a request to initiate fetching results.
2. The NCP initiates a login. This means that the NCP must be a web application that can implement a secure login.
3. The NCP fetches results for the student that has logged in. This part cannot be standardized, as it varies from country to country.
 - a. **Example from Norway:** In Norway there is a national web service that can fetch results for a student in two ways:
 - i. Call the web service with a HEI-id, and the results are fetched only from this HEI
 - ii. Call the web service without any id. The web service will then ask every HEI if there are any resultsThe web service will return ELMO-xml see [Format example - Norway](#) for an example of an XML
4. The NCP presents the collected results to the student and allows him/her to select which results will be transferred
5. Based on the selected results, generate an ELMO document. Based on the ELMO document, generate a PDF, sign this PDF and attach the signed PDF to the ELMO document.
6. The NCP returns the ELMO to the requester, signed with its private key using the XML-DSig standard.

NCP data in EMREG

The NCP has registered some data about it in a central registry, called EMREG:

1. **URL:** The URL that the requester should post the request on
2. **Public key:** The public key that the requester uses to verify the signed XML document
3. **Institutions:** A list of institutions the NCP is responsible for.
4. A couple of other parameters (see page [Implementation details: EMREG](#) for details)

Request

The request is sent from a requester as HTTP POST and has two parameters. Note that the form must be of the default type, not "multipart/form-data".

The request HTML form looks like this:

NCP Request

```
<form action="http://virtawstesti.csc.fi/norex/" method="POST">
  <input type="hidden" name="sessionId" value="mysessionid12345">
  <input type="hidden" name="returnUrl" value="https://fswb.no/studentweb">
</form>
```

1. **Session Id:** A generated unique session id from the requester (max 32 characters). This session id is not used by the NCP but it is returned as part of the reply so that the requester can check that the response comes from the correct NCP
2. **Return URL:** The URL that the NCP shall use to post the reply (max 2000 characters).

Login

The NCP must provide a login function. This login type should be the same as the students use to log in to the country's student applications. In Norway this is Feide, in Finland this is Haka, in Sweden this is Swamid and Denmark has Wayf.

Presenting the collected results

The NCP should present a list of all results with name, code, result and credits. If the results are collected from several HEIs, the results should be grouped by HEI.

The list should contain a check box so that the student can deselect the courses he/she does not wish to transfer.

Response

The generated XML document includes the list of all chosen results, as well as personal information about the student (first name(s), family name(s), birthday, gender...). It must also include a signature generated using the XML-DSig standard, containing the certificate paired to the private key used to generate the signature, to make it possible to verify it again at a later point. Note: Java supports natively only usage of private keys in PKCS#8 format.

The response is sent as HTTP POST and has two parameters - the sessionId received earlier by the requester, and the elmo XML (first compressed with gzip, then Base64-encoded). Note that the form must be of the default type, not "multipart/form-data".

NCP Response, example in an HTML form

```
<form action="https://fswb.no/studentweb" method="POST">
  <input type="hidden" name="sessionId" value="mysessionid12345">
  <input type="hidden" name="returnCode" value="NCP_OK">
  <input type="hidden" name="returnMessage" value="">
  <input type="hidden" name="elmo"
value="H4sIAJSMF1YAA7Oxr8jNUShLLSrOzM+zVTLUM1BSSM1Lzk/JzEu3VQoNcdO1ULK347JJzcnNVwAqzSu
2VcooKSmw0tcvKC3K0csvStfPSy3RB8kr2Sl06IGAp0JNcGZ6XmJJaVEqkpg+kqANWIcdFwDFthEMgAAAAA=="
  >
</form>
```

The following return codes are supported (the list is subject to change):

- NCP_OK: Everything went well, results have been transferred
- NCP_ERROR: Something went wrong, please give a detailed textual message in this case if the client wants to show it to the user
- NCP_NO_RESULTS: There were no results to import into the client
- NCP_CANCEL: The user has cancelled

Note: no elmo document should be delivered unless NCP_OK is returned.

Logging - for field trial

As part of the field trial, each NCP must provide a common log, which includes some data (no personal information) about the use of the NCP.

We suggest logging to a tab separated file, with one row for each HEI the student have results from. So one session for one student can generate one or more rows in this log. The first five variables will be identical within the same session.

The log should contain the following information

Variable	Description	Example
Sessionid	Sessionid from the SMP. (If we at a point want to do the same kind of logging in the SMP, with the sessionid it should be possible to join these logs)	ijklsd8890sa256
Sessiondate	Date/time (UTC) for when the application get the request from SMP (before logging in)	2015-11-15 12:32
NCP Minutes	Number of minutes spent in the NCP	3.2
Return URL	Return URL to the SMP (EMREX client). This is the only information we have about the system retrieving data from NCP. It should at least give country for SMP	studweb.fi/xxx
Country code	Country for the NCP	NO
Success	Successful return of ELMO document to SMP (yes/no)	yes
HEI id	SCHAC ID (the primary domain name) of the HEI which has delivered the data	uio.no
Courses imported	Number of courses imported from HEI	5
Credits imported	Number of credits imported from HEI	37.5
Courses exported	Number of courses exported to SMP	3
Credits exported	Number of credits exported to SMP	22.5

For a session retrieving data from two HEIs, the log could look like this:

```
ijklsd8890sa256<tab>2015-11-15 12:32<tab>3.2<tab>studweb.sf/xxx<tab>no<tab>uio.no<tab>5<tab>37.5<tab>3<tab>22.5
```

```
ijklsd8890sa256<tab>2015-11-15 12:32<tab>3.2<tab>studweb.sf/xxx<tab>no<tab>uib.no<tab>2<tab>20<tab>0<tab>0
```