



# EWP Network and User Scenarios

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**Digital Erasmus, FRSE, Warsaw, 28 May 2019**



Co-funded by the  
Erasmus+ Programme  
of the European Union

[erasmuswithoutpaper.eu](http://erasmuswithoutpaper.eu)



# Agenda

- What is the EWP Network?
- How to build the EWP node to get connected?
- How to get help on a technical level?
- What are possible user scenarios
- Connecting to Mobility Tool+
- Further development plans
- How to join the EWP Community?

Online DEMO, if time allows

# What is the EWP Network?

## Design

- Network architecture, protocols, services etc. fully described in **GitHub** which is **publicly** available repository of source code:
  - **ReadMe** part – high level description in „common” language.
  - **Flowcharts** explaining the mobility process – for „business” oriented people.
  - **XML, XSD files** – for technical staff.
- Available at: <https://github.com/erasmus-without-paper/>



## Erasmus Without Paper

A common space for all EWP-related Git projects.

<http://developers.erasmuswithoutpaper.eu/> [✉ usos@usos.edu.pl](mailto:usos@usos.edu.pl)

### [ewp-specs-mobility-flowcharts](#)

"EWP Mobility Process Explained" document.

Updated on 25 Jan

### [ewp-specs-api-discovery](#)

Specifications of EWP's Discovery API.

🔗 2 1 issue needs help Updated on 25 Jan

### [ewp-specs-architecture](#)

Description of EWP's Architecture and Security.

Updated on 24 Jan

# What is the EWP Network?

## Registry

- Address book which gathers in one place information about:
  - **who** – is connected,
  - **where** – how to find him,
  - **what** – services are offered.
- Registry is updated automatically.
- Available at:
  - PROD: <https://registry.erasmuswithoutpaper.eu/>
  - DEV: <https://dev-registry.erasmuswithoutpaper.eu/>
- Eventually PROD registry will have a couple of instances synchronized in real time (SLA, HA).



**erasmus without paper** **EWP Registry Service**

*Automated discovery service of APIs related to Higher Education in Europe  
Provided and supported by Erasmus Without Paper project*

At the following URL you will find the XML catalogue which describes all the institutions and APIs exposed by them:

<https://registry.erasmuswithoutpaper.eu/catalogue-v1.xml>

This catalogue is continuously refreshed. Read the *Architecture document* for more information. Also check out the *Developers Hub* for useful tools and documents.

[Manifest Importer Status](#) | [HEI/API Coverage Matrix](#) | [EWP Developers Hub](#)

**Uptime ratios**

- 100.00% - 24 hours
- 100.00% - 7 days
- 100.00% - 30 days
- 100.00% - 365 days

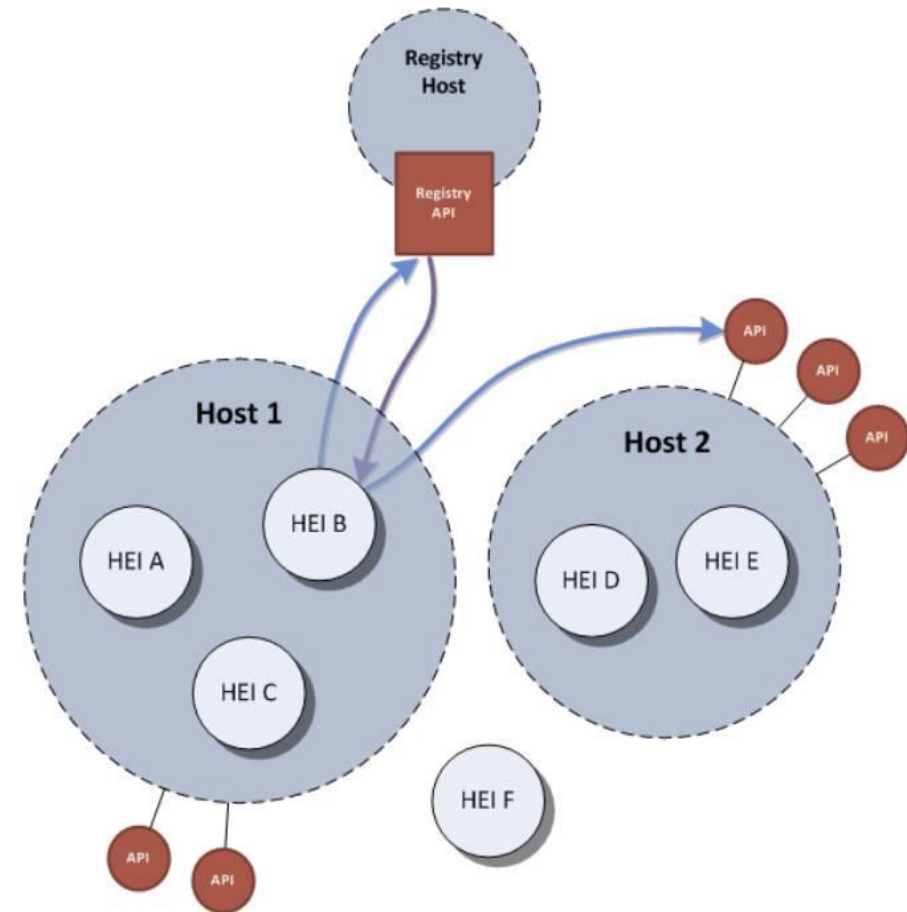
v1.6.2-SNAPSHOT

Contact: [usos@usos.edu.pl](mailto:usos@usos.edu.pl)

# What is the EWP Network?

## Connector (EWP server)

- Piece of software which is a SIS's **agent** in the EWP Network.
- Has to implement:
  - Security transport protocols (**ECHO**).
  - **Discovery** service (**Manifest** file).
- May implement some **business oriented** APIs.
- Exposed to the public by **URL** available in the Registry.
- One **EWP node** can host more than one HEI (recognized by domain names=SCHAC codes).



# Discovery API (Manifest file)



DEV Registry Service

## Manifest Importer Status

Currently defined manifest sources and their statuses:

<a href="https://dev-registry.erasmuswithoutpaper.eu/manifest.xml">https://dev-registry.erasmuswithoutpaper.eu/manifest.xml</a>	OK	<a href="#">details</a>
<a href="https://ewp.demo.usos.edu.pl/ewp/manifest">https://ewp.demo.usos.edu.pl/ewp/manifest</a>	OK	<a href="#">details</a>
<a href="https://ewp-hei.demo.usos.edu.pl/ewp/manifest">https://ewp-hei.demo.usos.edu.pl/ewp/manifest</a>	OK	<a href="#">details</a>

```
-<ns41:manifest>
  -<ns41:host>
    <admin-email>hostmaster@usos.edu.pl</admin-email>
  -<ns40:apis-implemented>
    -<ns15:discovery version="5.0.0">
      <ns15:url>https://ewp.demo.usos.edu.pl/ewp/manifest</ns15:url>
    </ns15:discovery>
    +<ns3:echo version="2.0.0"></ns3:echo>
    +<ns12:imobilities version="0.3.0"></ns12:imobilities>
    +<ns11:imobility-cnr version="0.1.1"></ns11:imobility-cnr>
    +<ns8:institutions version="2.1.0"></ns8:institutions>
    +<ns4:organizational-units version="2.1.0"></ns4:organizational-units>
    +<ns13:iiias version="2.1.0"></ns13:iiias>
    +<ns14:iiia-cnr version="2.0.2"></ns14:iiia-cnr>
    +<ns5:omobilities version="0.15.0"></ns5:omobilities>
    +<ns7:omobility-cnr version="0.4.1"></ns7:omobility-cnr>
    +<ns16:courses version="0.7.1"></ns16:courses>
    +<ns9:imobility-tors version="0.7.0"></ns9:imobility-tors>
    +<ns10:imobility-tor-cnr version="0.1.1"></ns10:imobility-tor-cnr>
  </ns40:apis-implemented>
  -<ns41:institutions-covered>
    -<ns40:hei id="demo.usos.edu.pl">
      <ns40:other-id type="erasmus">PL WARSZAW01</ns40:other-id>
      <ns40:other-id type="pic">999572294</ns40:other-id>
      <ns40:name xml:lang="pl">Uniwersytet Warszawski</ns40:name>
      <ns40:name xml:lang="en">University of Warsaw</ns40:name>
    </ns40:hei>
  </ns41:institutions-covered>
  +<ns41:client-credentials-in-use></ns41:client-credentials-in-use>
  +<ns41:server-credentials-in-use></ns41:server-credentials-in-use>
</ns41:host>
</ns41:manifest>
```

# Other APIs (offered services)



**DEV Registry Service**

```

<ns41:manifest>
  <ns41:host>
    <admin-email>hostmaster@usos.edu.pl</admin-email>
  </ns41:host>
  <ns40:apis-implemented>
    +<ns15:discovery version="5.0.0"></ns15:discovery>
    +<ns3:echo version="2.0.0"></ns3:echo>
    +<ns12:imobilities version="0.3.0"></ns12:imobilities>
    +<ns11:imobility-cnr version="0.1.1"></ns11:imobility-cnr>
    +<ns8:institutions version="2.1.0"></ns8:institutions>
    +<ns4:organizational-units version="2.1.0"></ns4:organizational-units>
    +<ns13:iias version="2.1.0"></ns13:iias>
    +<ns14:iia-cnr version="2.0.2"></ns14:iia-cnr>
    +<ns5:omobilities version="0.15.0"></ns5:omobilities>
    +<ns7:omobility-cnr version="0.4.1"></ns7:omobility-cnr>
    +<ns16:courses version="0.7.1"></ns16:courses>
    +<ns9:imobility-tors version="0.7.0"></ns9:imobility-tors>
    +<ns10:imobility-tor-cnr version="0.1.1"></ns10:imobility-tor-cnr>
  </ns40:apis-implemented>
  <ns41:institutions-covered>
    <ns40:hei id="demo.usos.edu.pl">
      <ns40:other-id type="erasmus">PL WARSZAW01</ns40:other-id>
      <ns40:other-id type="pic">999572294</ns40:other-id>
      <ns40:name xml:lang="pl">Uniwersytet Warszawski</ns40:name>
      <ns40:name xml:lang="en">University of Warsaw</ns40:name>
    </ns40:hei>
  </ns41:institutions-covered>
  </ns41:manifest>
  
```

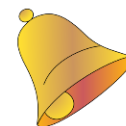
credentials-in-use>  
credentials-in-use>

**HEI/API Coverage Matrix**

Institution	General Purpose APIs				IIAs			OMobilities				IMobilities			IMobility ToRs		
	inst.	ounits	courses	course replic.	ver.	CNR		ver.	update types	CNR		ver.	CNR		ver.	CNR	
						sends	recv.			sends	recv.		sends	recv.		sends	recv.
demo.usos.edu.pl	2.1.0	2.1.0	0.7.1		2.1.0	yes	2.0.2	0.15.0	NN	yes	0.4.1	0.3.0	yes	0.1.1	0.7.0	yes	0.1.1
hei.demo.usos.edu.pl	2.1.0	2.1.0	0.7.1		2.1.0	yes	2.0.2	0.15.0	NN	yes	0.4.1	0.3.0	yes	0.1.1	0.7.0	yes	0.1.1
uw.edu.pl	2.0.0	2.0.0	0.7.0		2.0.0	yes	2.0.1	0.15.0	NN	yes	0.4.0	0.3.0	yes	0.1.0	0.7.0	yes	0.1.0
up.pt	2.1.0	2.1.0			2.1.0	no	2.0.2	0.15.0	NN	yes	0.4.1	0.2.0	no	0.1.1	0.7.0	no	0.1.1

# What is the EWP Network?

- **APIs** (***Application Programming Interfaces***) — a set of clearly defined methods of communication between various software components used to build applications.
- There are many APIs supporting the **EWP business model**:
  - **Primary Network** APIs (Discovery Manifest, Echo, Registry).
  - **General Purpose** APIs (Institutions, Organizational Units, Courses).
  - **Erasmus Mobility** APIs (Interinstitutional Agreements, Outgoing Mobilities, Incoming Mobilities, Nominations Approval, Mobility Arrival and Departure, Transcripts of Records, CNRs).
  - **MT+** APIs (Institutions, Projects, Dictionaries).
- Each API is relatively simple and can be implemented separately from the others.
- APIs may be implemented one by one, gradually building support for the whole process.
- There are APIs for **sending** (pushing) data and for **requesting** (pulling) data in response to **change notifications** (CNR). It is possible to handle EWP data exchange **automatically** by subscribing to notifications and firing triggers when they come.





# What is the EWP Network?

## EWP Client

- EWP functionalities spread over the **User Interface** of the Mobility module used by IRO.
- The most **business oriented** part of the project.
- Should be designed with close contact with the **business owner** (mostly IRO staff).
- May (will) change in time from less to more automated.

International cooperation > Arrival Nominations

New EWP notifications [Download](#) Pending nominations [Show](#) [Get data from EWP](#)

[+ Add](#) [Enter nominating entity's data](#) [Notify the partner](#) [Send a message](#) [Accept](#) [Reject](#)

<input type="checkbox"/>	No	D	Family nam	Given names	Country	Higher Education Instituti
<input type="checkbox"/>	1	2018	Cassio	Aguinaldo	Portugalia	Universidade do Porto
<input type="checkbox"/>	2	2018	Diogo	Diego	Portugalia	Universidade do Porto
<input type="checkbox"/>	3	2018	Fernando	Barnabe	Portugalia	Universidade do Porto

[Details](#) [Address](#) [Telephones](#) [External units](#) [External persons](#) [Logo](#) [Factsheet](#) [Mobility Tool](#)

[+ Add](#) [Get data from EWP](#)

No	Name in national language	Name in English	WWW
1	Katedra Białorusistyki	Department of Belarusian Studies	http://www.kfb.uw.edu.pl
2	Katedra Ukrainistyki	Department of Ukrainian Studies	http://www.ukraina.uw.edu.pl
3	Wydział Zarządzania	Faculty of Management	http://www.wz.uw.edu.pl

# How to build EWP node to get connected?

- Implement the **EWP connector** with ECHO and Discovery (or take it from OSUA).
- Send URL to the Registry administrator ([usos@usos.edu.pl](mailto:usos@usos.edu.pl)).
- Start testing.
- Implement other APIs as agreed with local users.
- Update your manifest file as new APIs become available.
- Test, test, test (using automated tests, reference connector, demo installations of the partners, or you own).

# How to build EWP node to get connected?

In the meantime:

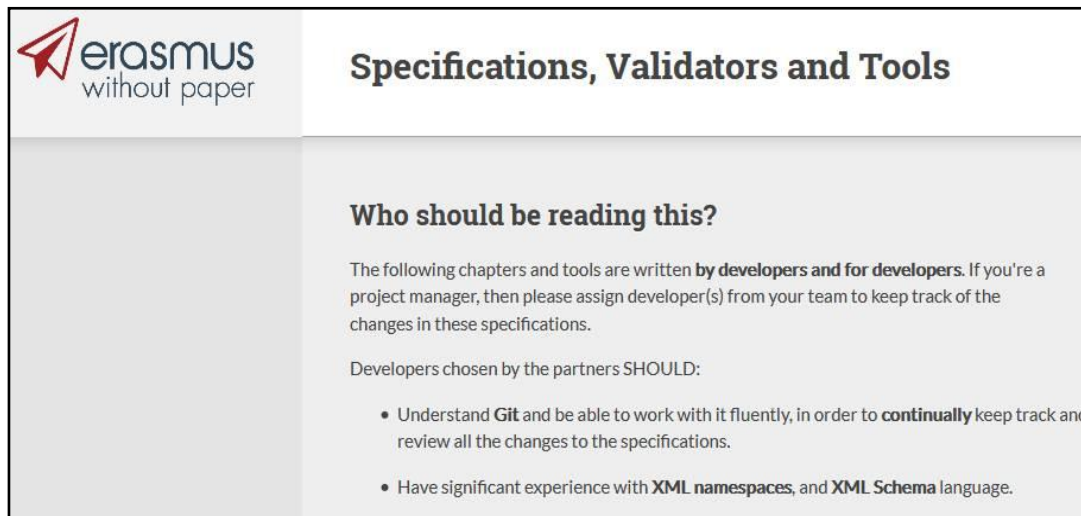
- Design the **EWP client** with your business clients.
- Search for inspiration looking at installations of the partners.
- Integrate EWP services into your local processes.
- Test, test, test in DEMO EWP Network.
- Go to production.


The image displays several screenshots from the MoveON EWP system interface:

- Top Right:** A window titled "New EWP Notifications" showing a table with columns for No., Date, Entity name, Gender, Warning, and Date of previous answer. It includes a "Send" button and a warning message: "Clicking the 'Send' button will send decisions on the following nominations."
- Middle Right:** A dashboard for "External institution: Universität Bremen" showing "EWP Organizational Units" with a list of units like "EM-LogDynamics", "EMBC - Marine Biologie", "FB01 Physics, Electrical Engineering", etc.
- Bottom Left:** A "Connect" page showing a list of institutions under "Institutions - (19 Entries found)". The list includes "ARISTOTELEIO PANEPISTIMIO THESSALONIKIS", "Demohochschule/Demoinstitution", "DIAKONIA-AMMATTIKORKEAKOULU", "FONTYS HOGESCHOLEN", "ZYVASKYLÄN YLIOPISTO", "Ozvegin University", "PÄDAGOGISCHE AKADEMIE DES BUNDES IN OBERÖSTERREICH", "TAMPEREEN TEKNILLINEN YLIOPISTO", "TAMPEREEN YLIOPISTO", "TURUN AMMATTIKORKEAKOULU - ÅBO YRKESHÖGSKOLA", "UNIVERSIDAD CARLOS III DE MADRID", "UNIVERSIDADE DO PORTO", "UNIVERSITÀ DEGLI STUDI DI SALERNO", "UNIVERSITÄT BREMEN", "UNIVERSITAT DE BARCELONA", and "UNIVERSITEIT GENT".
- Bottom Center:** A detailed view of an institution's data, including fields for "Algemeen", "Adres", "Contactgegevens", "Contactpersonen", "Uitselings DMO", and "Externe opleidingen".
- Bottom Right:** A "User notifications" panel showing a list of messages with "Date", "Message", and "Buttons" (Check Mobility, Mark as Read, Mark as Unread).

# How to get help on a technical level?

- Developers Guide:  
<https://developers.erasmuswithoutpaper.eu/>
- Self testing: API Validator, XML Validator.
- Much more to come.



 **Specifications, Validators and Tools**

**Who should be reading this?**

The following chapters and tools are written **by developers and for developers**. If you're a project manager, then please assign developer(s) from your team to keep track of the changes in these specifications.

Developers chosen by the partners SHOULD:

- Understand **Git** and be able to work with it fluently, in order to **continually** keep track and review all the changes to the specifications.
- Have significant experience with **XML namespaces**, and **XML Schema** language.

- ⊕ Chapter 1. Working with EWP Technical Documentation **v1.2.0**
- ⊖ Chapter 2. Introduction to EWP Network
  - ⊕ Chapter 2.1. Architecture and Common Datatypes **v1.10.0**
  - ⊕ Chapter 2.2. Authentication and Security **v2.0.2**
  - ⊖ Chapter 2.3. Client Authentication Methods
    - ⊕ Chapter 2.3.1. Handling Anonymous Clients **v1.1.0**
    - ⊕ Chapter 2.3.2. Authenticating Clients with TLS Certificate **v1.1.0**
    - ⊕ Chapter 2.3.3. Authenticating Clients with HTTP Signature **v1.0.1**
  - ⊖ Chapter 2.4. Server Authentication Methods
    - ⊕ Chapter 2.4.1. Authenticating Servers with TLS Certificate **v1.1.0**
    - ⊕ Chapter 2.4.2. Authenticating Servers with HTTP Signature **v1.0.1**

Validation result: **NOTICE**

### Basic information

- URL of the Echo API being tested: `https://ewp.demo.usos.edu.pl/ewp/echo`
- Datetime validation started: `2018-06-03T11:56:57.751Z`
- Datetime client keys regenerated: `2018-05-09T06:30:52.232Z` (2179565 seconds before validation)

### Tests performed

- |    |   |         |
|----|---|---------|
| 1. | Check if our client credentials have been served long enough.         | SUCCESS |
| 2. | Verifying the format of the URL. Expecting a valid HTTPS-scheme URL.  | SUCCESS |
| 3. | Verifying if the URL is properly registered.                          |         |
| 4. | Querying for supported security methods. Validating http-security int |         |

16.	Trying Combination[GSTTT] GET request with a list of echo values [a, b, a]. Expecting to receive a valid HTTP 200 Echo API response, with proper hei-id and matching echo values.	FAILURE
<b>HTTP 200 expected, but HTTP 401 received.</b>		

112.	Trying Combination[PHHTT] with additional "gzip" added in Accept-Encoding. Expecting the same response, but preferably gzipped.	NOTICE
<b>The client explicitly accepted gzip, but the server didn't compress its response. That's not an error, but it might be useful to support gzip encoding to save bandwidth.</b>		

Security  
ECHO API Validator  
(performs thousands of tests)

# Schema Validator

## </> XML Schema Validator

This tool will help you with writing EWP XML documents. For example, you can paste the contents of your [Manifest file](#) here before you upload it onto your production site. You should be able to validate any XML document described in all **RELEASED**, **DEPRECATED** and **OBSOLETE** specifications above (plus, perhaps, some of the **DRAFT** ones).

Note, that this tool will validate **against the schema only!** Even if such validation succeeds, your file **may still be invalid** (if, for example, you didn't adhere to the guidelines described in `<xs:documentation>` elements included in the XSD files).

Paste your XML document below and press

```
<courses-response
  xmlns="https://github.com/erasmus-without-paper/ewp-specs-api-courses/tree/stable-v1"
  xmlns:trm="https://github.com/erasmus-without-paper/ewp-specs-types-academic-term/tree/stable-v1"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:schemaLocation="
    https://github.com/erasmus-without-paper/ewp-specs-api-courses
    https://raw.githubusercontent.com/erasmus-without-paper/ewp-sp
"
>
<!--
IMPORTANT: Please see the response.xsd file for detailed requirements
descriptions of all the elements. You MUST NOT base your implementation
solely on the example file.
```

Validation result: **PASSED**

### Recognized element

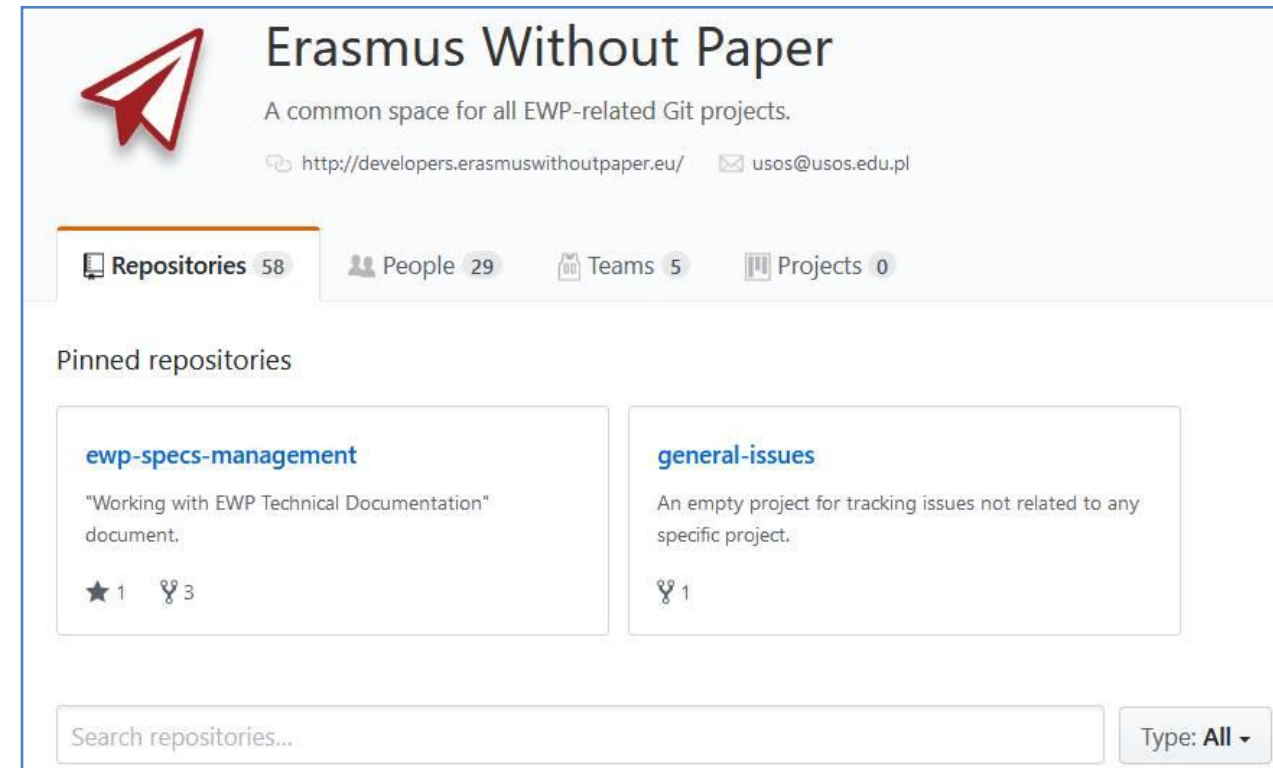
This seems to be a valid `courses-response` element (from `https://github.com/erasmus-without-paper/ewp-specs-api-courses/tree/stable-v1` namespace).

[Try again](#)

# Where to find technical stuff?

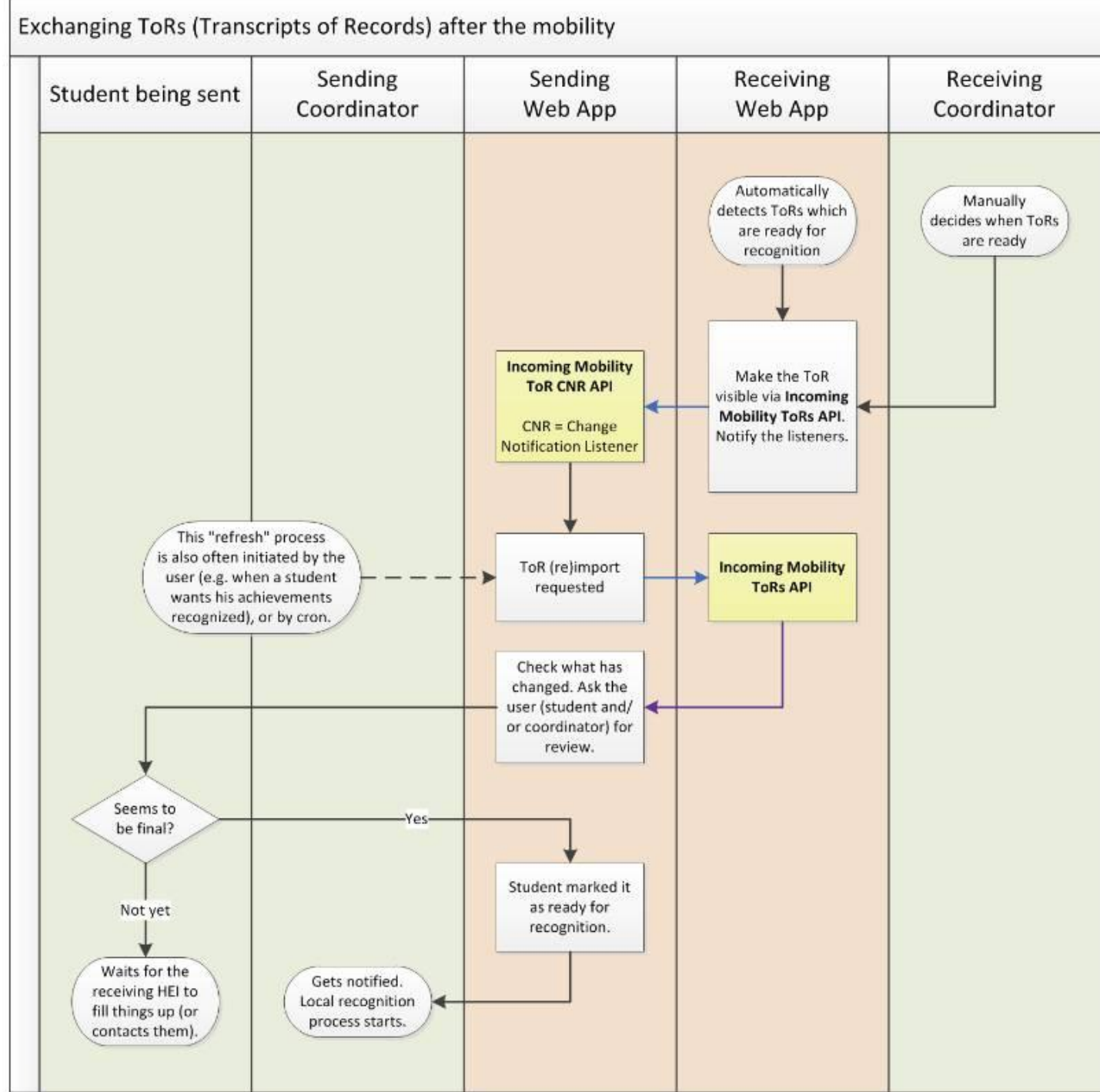
GitHub: <https://github.com/erasmus-without-paper>

- Specifications.
- Common data types.
- XSD Schemas.
- Examples of requests and responses in XML.
- Issue tracker.
- Libraries of code.



The screenshot shows the GitHub profile for the organization "Erasmus Without Paper". The profile includes a red paper airplane logo, the organization name, a description "A common space for all EWP-related Git projects.", and contact information: a website link "http://developers.erasmuswithoutpaper.eu/" and an email "usos@usos.edu.pl". Below this, there are statistics for "Repositories 58", "People 29", "Teams 5", and "Projects 0". The "Pinned repositories" section displays two items: "ewp-specs-management" with a description "Working with EWP Technical Documentation" document, 1 star, and 3 forks; and "general-issues" with a description "An empty project for tracking issues not related to any specific project." and 1 fork. At the bottom, there is a search bar for repositories and a filter dropdown set to "Type: All".

# GitHub Mobility process explained on flowcharts





# Mobility Tool+ Institutions API

- [What is the status of this document?](#)
- [See the index of all other EWP Specifications](#)

## Summary

This document describes the **Mobility Tool+ Institutions API**. It is assumed that this API is implemented by only one host managed by the Directorate-General Education and Culture Unit (DG EAC) of the European Commission. However, the specification itself does not limit the number of hosts.

Once implemented by the host, it allows external clients to retrieve general information on institutions known by this host.

## Request method

- Requests MUST be made with either HTTP GET or HTTP POST method. Servers MUST support both these methods. Servers SHOULD reject all other request methods.
- Clients are advised to use POST when passing large number of parameters (servers MAY set a limit on the string length).

## Request parameters

Parameters MUST be provided in the regular `application/x-www-form-urlencoded` format.

### **pic** (repeatable, required)

A list of institution PICs the client wants to retrieve information on (no more than `<max-ids>` items).

This parameter is *repeatable*, so the request MAY contain multiple occurrences of it. The server is REQUIRED to parse them.

Server implementers provide their own chosen value of `<max-ids>` via their manifest entry (see [manifest-entry](#)). Servers SHOULD parse this value (or assume it is equal to `1`).

Clients may retrieve proper PICs from other EWP APIs (most often, the [Registry Service](#)).

### **eche\_at\_date** (required)

A date in the `YYYY-MM-DD` format. The Erasmus Charter for Higher Education (ECHE) accreditation included in the response should be the one valid at this date.

GitHub  
Specification of the API  
request parameters  
Response example

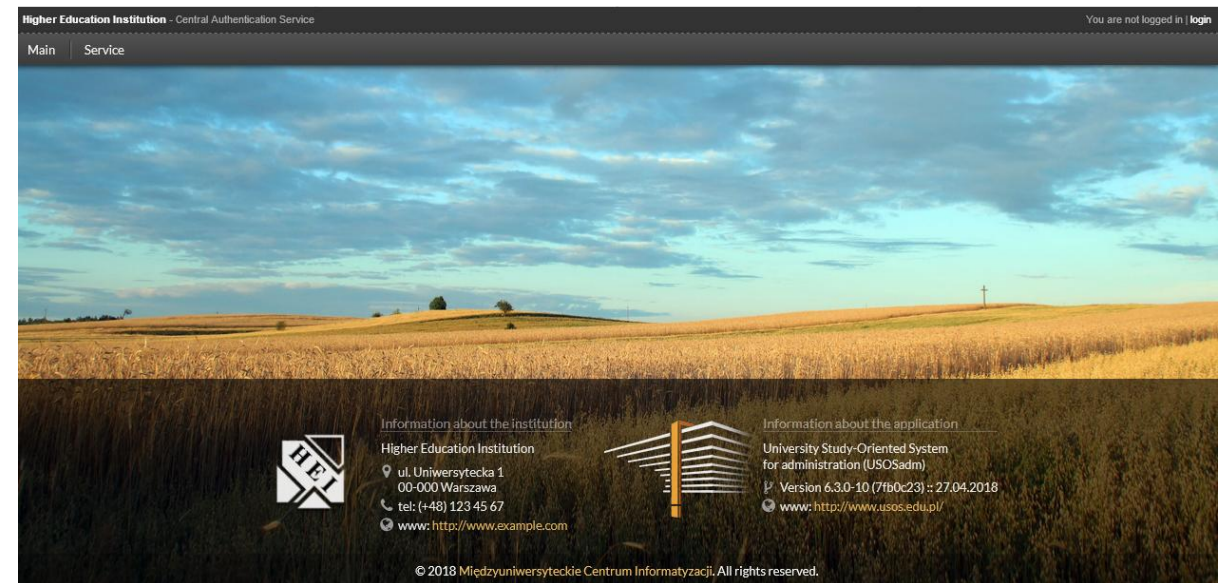
```
<mt-institutions-response>
  <hei>
    <pic>999975814</pic>
    <erasmus>N OSL001</erasmus>
    <erasmus-charter startDate="2014-01-01" endDate="2020-12-31">29714-EPP-1-2014-1-NO-EPPKA3-ECHE
    </erasmus-charter>

    <name xml:lang="en">University of Oslo</name>
    <name xml:lang="no">Universitetet i Oslo</name>

    <a:mailing-address>
      <a:addressLine>University of Oslo</a:addressLine>
      <a:addressLine>PROBLEMVEIEN 5-7 1073</a:addressLine>
      <a:postalCode>03313</a:postalCode>
      <a:locality>Oslo</a:locality>
      <a:country>NO</a:country>
    </a:mailing-address>
  </hei>
</mt-institutions-response>
```

# Mobility scenarios

- Two installations:
  - University of Warsaw at <https://usosadm.demo.usos.edu.pl/usosadm/>
  - HEI – new mobility partner of UW at <https://usosadm-hei.demo.usos.edu.pl/usosadm/>



# University of Warsaw Enters name and SCHAC code of the new mobility partner

[+ Add](#) [Set the filter](#) [? Help](#)

Institutions -- External units --  -- Factsheets --

No	Name in national language	Name in English	PIC	ERASM	POL-on	hei	Instituti	
1	Higher Education Institution					hei.demo.usos.edu.pl	UZ	

First     Last 1

[Details](#) [Address](#) [Telephones](#) [External units](#) [External persons](#) [Logo](#) [Factsheet](#) [Mobility Tool](#)

<b>Name in national language:</b> Higher Education Institution	<b>Legal status:</b> <input type="text"/>
<b>Name in English:</b>	<b>Legal status in English:</b> <input type="text"/>
<b>Type of institution:</b> Foreign university	<b>Grading scale:</b> <input type="text"/>
<b>Parent unit:</b>	<b>Grading scale in English:</b> <input type="text"/>
<b>Participant Identity Code:</b>	
<b>ERASMUS code:</b>	
<b>POL-on code:</b>	
<b>SCHAC code:</b> hei.demo.usos.edu.pl	
<b>Institution code:</b>	
<b>Institution code in HR system:</b>	
<b>NUTS region:</b>	
<b>WWW:</b>	
<b>E-mail:</b>	
<b>E-mail addresses for nominations:</b> <input type="text"/>	
<b>Display:</b> Yes	
<b>Is public entity:</b>	
<b>Is non-profit:</b>	

[Edit](#) [Get data from EWP](#)

University of Warsaw  
gets the rest of the  
institution data from  
the partner by calling  
**Institutions API**  
(data are copied to the  
appropriate fields)

Edit Institution ? Help

<u>Data from EWP</u>		<u>Data in USOS</u>
SCHAC code: hei.demo.usos.edu.pl		hei.demo.usos.edu.pl
Name in national language:* Higher Education Institution (pl)	↔	<input type="text" value="Higher Education Institution"/>
Name in English: Higher Education Institution	↔	<input type="text"/>
Participant Identity Code: 999642716	↔	<input type="text"/>
ERASMUS code: PL WARSAW50	↔	<input type="text"/>
Factsheet: <a href="https://usosapps-hei.demo.usos.edu.pl/services/fac/factsheet_get?fac_id=00000000">https://usosapps-hei.demo.usos.edu.pl/services/fac/factsheet_get?fac_id=00000000</a> (en)	↔	<input type="text" value="https://usosapps-hei.demo.usos.edu.pl/services/fac/factsheet_get?fac_id=00000000 (en)"/>
WWW: <a href="http://usos.edu.pl">http://usos.edu.pl</a>	↔	<input type="text"/>
Logo: <a href="https://usosapps-hei.demo.usos.edu.pl/res/fl/200x200/dd4b21e9ef71e1291183a46b913ae6f2-2840ce3d9caf44eb6db74e91499fdb234b29fb9.jpg">https://usosapps-hei.demo.usos.edu.pl/res/fl/200x200/dd4b21e9ef71e1291183a46b913ae6f2-2840ce3d9caf44eb6db74e91499fdb234b29fb9.jpg</a>		

Bytes remaining:2000  
Characters remaining:100

Correspondence address

Country:  Choose

Foreign code:

City/village:

Street:

House number:

Address type:\*

Building address

Country: PL

Foreign code: 02097

City/village: Warszawa (Ochota)

Street: Banacha

House number: 2

Not stored in USOS

\* - required fields

Save Cancel

University of  
Warsaw displays  
all obtained  
factsheets in  
the web portal  
for students  
and staff

**USOSweb**

NEWS DIRECTORY MY USOSWEB STUDENT'S SECTION **STAFF SECTION** COMMON SECTION ADMINISTRATION

INTRODUCTION  
MY PROFILE  
TESTS  
EXAM REPORTS  
EDITING COURSES  
EXAMS  
POSTULATES  
OPINIONS ON APPLICATIONS  
STUDENT MOBILITY  
 ▶ coordinated faculties  
 ▶ **partner institutions**  
 ▶ university's agreements  
 ▶ my commissions  
 ▶ my opinions  
 APPLICATIONS COORDINATING  
 SURVEYS RESULTS

## Partner institutions

**i** This page displays foreign higher education institutions with which DEMO University has signed at least one agreement for international exchange that fulfills the following criteria:

- agreement comes into effect within a year from now,
- end date is later than today or is not determined.

**FILTER OPTIONS**

Country: **i**

City: **i**

Institution name (in native language): **i**

Institution name (in English): **i**

Erasmus code: **i**

Factsheet (for institutions and/or units):

**CLEAR FILTERS** **APPLY**

Showing elements 1..7 (out of 7)

No.	Country and city	Erasmus code	Institution name	Institution name (Eng.)	Web page	Factsheet
1	Belgium (Antwerp)	B ANTWERP01	Universiteit Antwerpen <small>(show units)</small>	University of Antwerp	<a href="http://www.ua.ac.be">http://www.ua.ac.be</a>	<a href="#">show from partner</a> ▶ <a href="#">show from USOS</a> ▶
2	Belgium (Gent)		Universiteit Gent <small>(show units)</small>	Ghent University		<a href="#">show from USOS</a> ▶
3	Portugal (Porto)	P PORTO02	Universidade do Porto <small>(show units)</small>	University of Porto	<a href="http://www.up.pt">http://www.up.pt</a>	<a href="#">show from partner</a> ▶
4	Russia (Ulan-Ude)		Бурятский государственный университет	Buryat State University	<a href="http://www.bsu.ru/">http://www.bsu.ru/</a>	<a href="#">show from USOS</a> ▶
5	Sweden (Lund)	S LUND01	Lunds Universitet <small>(show units)</small>	Lund University	<a href="http://www.lu.se">http://www.lu.se</a>	<a href="#">show from partner</a> ▶ <a href="#">show from USOS</a> ▶
6	Sweden (Umea)	S UMEA01	Umea Universitet <small>(show units)</small>	Umea University	<a href="http://www.umu.se">http://www.umu.se</a>	<a href="#">show from partner</a> ▶
7	Switzerland (Geneva)	CH GENEVE01	Université de Geneve <small>(show units)</small>	University of Geneva	<a href="http://www.unige.ch">http://www.unige.ch</a>	<a href="#">show from USOS</a> ▶

University of  
Warsaw gets units  
of the partner HEI  
by **Organizational  
Units API**.  
Only units which  
participate in the  
mobility are copied.

External units

? Help

**Data from EWP**

- en College of Inter-faculty Studies in the Humanities  
pl Kolegium Międzywydziałowych Indywidualnych  
Studiów Humanistycznych  
code 70401200
- en College of Inter-Faculty Individual Studies in  
Mathematics and Natural Sciences (MISMaP)  
pl Kolegium Międzywydziałowych Indywidualnych  
Studiów Matematyczno-Przyrodniczych  
code 40130000
- en University of Warsaw  
pl Higher Education Institution  
code 00000000
- en Institute of Philosophy  
pl Instytut Filozofii  
code 35010000
- en Institute of Archaeology  
pl Instytut Archeologii  
code 31010000
- en Institute of Experimental Physics  
pl Instytut Fizyki Doświadczalnej  
code 11010000
- en Institute of Journalism  
pl Instytut Dziennikarstwa  
code 21010000
- en Centre for Local Government and Development Studies  
pl Centrum Studiów Samorządu Terytorialnego i Rozwoju  
Lokalnego  
code 40070000
- en Centre for Europe  
pl Centrum Europejskie  
code 40030000
- en Institute of Polish Culture  
pl Instytut Kultury Polskiej  
code 30020000

**Data in USOS**

- en Faculty of Economic Sciences  
Wydział Nauk Ekonomicznych  
code 24000000
- en Faculty of Psychology  
Wydział Psychologii  
code 25000000
- en Faculty of Chemistry  
Wydział Chemii  
code 12000000

\* - required fields

# University of Warsaw enters details of the bilateral agreement

Add agreement ✕

? Help

Type of agreement: \*

Date of signing: \*

Number: \*

Start date: \*

Expiration date:

Status: \* podpisana

Migrate: \* Yes

Foreign higher education institution or external institution: Higher Education Institution

ERASMUS code:

City/village: Warszawa (Ochota)

Country: Polska

Continent: Europa

External institutional coordinator: [Click to choose](#)

Institutional coordinator of the home institution: Marek Góralowski

Person: [Click to choose](#)

Notes:

Bytes remaining: 4000

\* - required fields

Save Cancel

# University of Warsaw notifies the partner that the draft agreement is ready by calling IIA CNR API (Interinstitutional Agreement Change Notification Request)

The screenshot shows a web application interface with a table of agreements and a warning dialog box. The table has columns for 'No', 'Type', and 'BI/1/18'. The dialog box asks: 'Are you sure you want to notify the partner about the change?' with 'Yes' and 'Cancel' buttons.

No	-- Type --	BI/1/18
1	Bilateral	BI/1/18

Warning dialog box text: Are you sure you want to notify the partner about the change?

Buttons: Yes, Cancel



# HEI receives notification, gets agreement data from UW by calling IIA API (no need to enter this data by hand)

There are new EWP notifications from demo.usos.edu.pl.

New EWP notifications

Agreements filter

### Agreements

No	-- Type --	Number	Date of signing	Start date	Expiration date	-- all statuses --	Migrate	
1	Bilateral	1/2/3/4/5	23.09.2014	01.10.2014	30.09.2020	podpisana	Yes	<input type="button" value="Actions"/>
2	Bilateral	1/E+/X13	21.10.2013	01.07.2014	30.09.2021	podpisana	Yes	<input type="button" value="Actions"/>
3	Bilateral	1/E+107/I16	28.01.2016	28.01.2016	30.09.2021	podpisana	No	<input type="button" value="Actions"/>

First « « 1 2 3 4 5 » » Last 3

Details

**Foreign higher education institution or external institution:** Universidade do Porto  
**ERASMUS code:** P PORTO02  
**City/village:** Porto  
**Country:** Portugalia  
**Continent:** Europa

**External institutional coordinator:** [→ Go to external persons](#)

**Institutional coordinator of the home institution:**

**Person:**

**Notes:** [EWP 26.10.2017] KOD UMOWY PO STRONIE PARTNERA: 983/E+/III14-15/[EWP] g

# University of Warsaw nominates a student for outgoing mobility at HEI under the newly signed agreement

[Notifications of dates](#) [Download](#)
[TOR notifications](#) [Download](#)
[Replies to nominations](#) [Show](#)

[Set the filter](#)
[Reports](#)
[Help](#)

Departures filter

Choose a person by typing PESEL, student number or name
 [Contact interface number](#)
[Contactless interface number](#)

Choose program unit: 
 Choose program: 
 Choose stage: 
 Choose didactic cycle: 
 -- no filter --
 Choose a place where program is tz: 
[Specify filters](#)

No	Brzezińska	Danuta	PESEL	Main student nur	Main program	Person's unit
1	Brzezińska	Danuta	64022034104	123451263	ZD-HUM (Humanistyczne Studia Doktoranckie w zakresie nauk o polityce)	21000000

[First](#)
[«](#)
[»](#)
[Last](#)
1

2017 [Add](#)

<p>Folder number: 100008554/1/2/3</p> <p>Organizational unit: 22000000 (Wydział Prawa i Administracji)</p> <p>Foreign Higher Education Institution: Higher Education Institution</p> <p>ERASMUS code:</p> <p>City/village: Warszawa (Ochota)</p> <p>Country: Polska</p> <p>Agreement: BI/1/18</p> <p>Type of agreement: Bilateral</p> <p>Type of cooperation: studenci-studia</p> <p>Cooperation level: drugi</p> <p>Domain: 10000 Prawo</p> <p>ISCED code: 0421 Prawo</p> <p>In second round: No</p> <p>Agreement with student: Yes</p> <p>Erasmus in the past: No</p> <p>Speaks Polish: Yes</p> <p>Classes in the official language: Yes</p> <p>Type of departure: Studies</p> <p>Status: Active</p> <p>Reasons for resignation:</p>	<p><u>Application information</u></p> <p>Program: DM-SM-ISM</p> <p>Type of study: Jednolite magisterskie</p> <p>Study mode: Stacjonarne</p> <p>Year of study: 4</p> <p><u>Departure information</u></p> <p>Program:</p> <p>Type of study:</p> <p>Study mode:</p> <p>Year of study:</p> <p>Academic year: 2017</p> <p>Academic year of funding: 2017</p> <p>Scholarships group: Trzecia stawka stypendialna (najniższa)</p> <p>Disability subsidy: No</p> <p>Co-financing from organizational unit: None</p> <p>Received scholarships: Other</p> <p>If other, then which: Opis otrzymanego stypendium</p>	<p>Date of granting: 07.03.2017</p> <p>Duration of the intended stay: Winter semester</p> <p>Duration of the intended stay - comment:</p> <p>Stay from: 30.08.2017</p> <p>Stay to: 02.02.2018</p> <p>Date of departure:</p> <p>Date of return:</p> <p>Actual date of departure:</p> <p>Actual date of return:</p> <p>Prolongation/Shortening:</p> <p>Number of months with scholarship: 5, days: 150</p> <p>Number of months of prolongation:</p> <p>Number of months without scholarship: 0.17, days: 5</p> <p>Notes (visible in USOSweb):</p> <p>Notes (not visible in USOSweb):</p>
--	--	--

[Edit](#)
[Delete](#)
[EWP](#)
[Transcript of records](#)

[Learning Agreement](#)
[History of decisions \(EWP\)](#)

# University of Warsaw informs the partner about new nominations or changes in nominations by calling Outgoing Mobility CNR API

2017 Add

Folder number: 1000008554/1/2/3  
Organizational unit: 22000000 (Wydział Prawa i Administracji)  
Foreign Higher Education Institution: Higher Education Institution  
ERASMUS code:  
City/village: Warszawa (Ochota)  
Country: Polska  
Agreement: BI/1/18  
Type of agreement: Bilateral  
Type of cooperation: studenci-studia  
Cooperation level: drugi  
Domain: 10000 Prawo  
ISCED code: 0421 Prawo  
In second round: No  
Agreement with student: Yes  
Erasmus in the past: No  
Speaks Polish: Yes  
Classes in the official language: Yes  
Type of departure: Studies  
Status: Active  
Reasons for resignation:

Application information  
Program: DM-SM-ISM  
Type of study: Jednolite magisterskie  
Study mode: Stacjonarne  
Year of study: 4

Date of granting: 07.03.2017  
Duration of the intended stay: Winter semester  
Duration of the intended stay - comment:  
Stay from: 30.08.2017  
Stay to: 02.02.2018  
Date of departure:  
Date of return:  
Actual date of departure:  
Actual date of return:  
Prolongation/Shortening:  
Number of months with scholarship: 5, days: 150  
Number of months of prolongation:  
Number of months without scholarship: 0.17, days: 5  
Notes (visible in USOSweb):  
Notes (not visible in USOSweb):

Received scholarships: Other  
If other, then which: Opis otrzymanego stypendium

Warning

Are you sure you want to notify the partner about the change?

Yes Cancel

Edit Delete EWP Transcript of records

# HEI receives notification, gets student data from UW by calling Outgoing Mobility API

New EWP notifications  Pending nominations

Enter nominating entity

<input type="checkbox"/>	No	Di	Family name
<input type="checkbox"/>	1	2016	Ancerowicz
<input type="checkbox"/>	2	2016	Biedrzycki
<input type="checkbox"/>	3	2016	Bogdański

Number of checked: 0 Uncheck all

Sex: female  
E-mail: kowalska130  
Date of nomination: 02.05.2018 0  
Date of response: 03.05.2018 1  
ERASMUS code: PL WARSZAWA  
Contract number:  
Type of cooperation:

### Arrival nominations

**Data from EWP**

Family name Biedrzycki   
Given names Aleksander Piotr  
Academic year 2016/2017  
Mobility id 6ADC1F2112FDD550E05000C192418894

Family name Brzezińska   
Given names Danuta  
Academic year 2017/2018  
Mobility id 6236B741AC3B5D02E05000C1924172FD

**Data in USOS**

Family name Biedrzycki   
Given names Aleksander Piotr  
Academic year 2016  
Mobility id 6ADC1F2112FDD550E05000C19241...

\* - required fields

# HEI can copy data which should be stored in the local system (no need to enter data by hand)

**Arrival nominations**

**Add nomination**

**Data from EWP**

Family name: Biedrzycki  
Given names: Aleksander Piotr  
Academic year: 2016/2017  
Mobility id: 6ADC1F2112FE

Family name: Brzezińska  
Given names: Danuta  
Academic year: 2017/2018  
Mobility id: 6236B741AC3B

**Data from EWP**

Given names: Danuta  
Family name: Brzezińska  
E-mail: kowalska1525341@usos.edu.pl  
Sex: female  
Didactic cycle\*: 2017  
External unit:  
Organizational unit:  
Nomination EQF level: 7  
Arrival EQF level:  
Agreement: BI/1/18  
Type of cooperation: Not supported by EWP  
Duration of the intended stay: 30.08.2017 - 02.02.2018  
Mobility status: Active  
ISCED code: 0421  
Languages: • en: B2  
Nominating entity: Not supported by EWP  
E-mail address of the nominating entity: Not supported by EWP

**Data in USOS**

Danuta  
Brzezińska  
kowalska1525341@usos.edu.pl  
female  
2017  
Not stored in USOS  
Click to choose  
Not stored in USOS  
Not stored in USOS  
Click to choose  
Click to choose  
-- no value --  
Not stored in USOS  
Not stored in USOS  
Not stored in USOS

\* - required fields

Save Cancel

# HEI at the end of the mobility generates ToRs for incoming students and notifies the partner (ToR CNR API)

No new notifications Get data from EWP Transcript of records ▾ Set the filter Reports ▾ Help

Arrivals filter Generate for all from the filter  
Generate for selected

Choose a person by typing PESEL, student number or Place number Contactless interface number

Choose program unit  Choose program  Choose stage  Choose didactic cycle  -- no filter -- ▾ Choose a place where program is  Specify filters

<input checked="" type="checkbox"/>	No	Family name	Given name	PESEL	Main student i	Main program	Person's unit
<input checked="" type="checkbox"/>	4	Brzezińska	Danuta	64022034104	123451263	ZD-HUM (Humanistyczne Studia Doktoranckie w zakresie nauk o polityce)	21000000
<input checked="" type="checkbox"/>	5	Szyjka	Maria	61031100901	123433308	DD-FL (Studia trzeciego stopnia, stacjonarne na Wydziale Neofilologii)	33000000

Number of checked: 2 Uncheck all First « « 1 2 » » Last 3 ▾

Form of education:  
Type of study:  
Year of study:

Host units Accommodation Finances Registrations Documents

Generate Download Notify the partner about the change Transcript of records ▾

# University of Warsaw receives notification and then downloads ToR to the local system (Incoming Mobility ToR API)

**Transcript of records**

Family name	Brzezińska	<a href="#">Download TOR</a>
Given names	Danuta	
Academic year	2017	
Mobility id	6236B741AC3B5D02E05000C1924172FD	
Transcript of records	YES	
Family name	Bagiński	<a href="#">Download TOR</a>
Given names	Robert Zygmunt	
Academic year	2017	
Mobility id	6A9FB1EEB544A452E05000C19241D900	
Transcript of records	YES	

[Close](#)

**Background Interface:**

Notifications of dates [Download](#) TOR notifications [Download](#) Replies to nominations [Show](#) [Set the filter](#) [Reports](#) [Help](#)

Departures filter

Choose a person by typing PESEL, student number

Choose program unit

No	Brzezińska	Danuta
1	Brzezińska	Danuta

2017 [Add](#)

Folder number: 1000008  
Organizational unit: 2200000  
Foreign Higher Education Institution: Higher Education Institution  
ERASMUS code:  
City/village: Warszawa (Ochota)  
Country: Polska  
Agreement: BI/1/18  
Type of agreement: Bilateral  
Type of cooperation: studenci-studia  
Cooperation level: drugi  
Domain: 10000 Prawo  
ISCED code: 0421 Prawo  
In second round: No  
Agreement with student: Yes  
Erasmus in the past: No  
Speaks Polish: Yes  
Classes in the official language: Yes  
Type of departure: Studies  
Status: Active  
Reasons for resignation:

**Departure information**

Program:		Date of departure:	07.03.2017
Type of study:		Date of return:	
Study mode:		Actual date of departure:	Winter semester
Year of study:		Actual date of return:	
Academic year:	2017	Prolongation/Shortening:	
Academic year of funding:	2017	Number of months with scholarship:	5, days: 150
Scholarships group:	Trzecia stawka stypendialna (najniższa)	Number of months of prolongation:	
Disability subsidy:	No	Number of months without scholarship:	0.17, days: 5
Co-financing from organizational unit:	None	Notes (visible in USOSweb):	
Received scholarships:	Other	Notes (not visible in USOSweb):	
If other, then which:	Opis otrzymanego stypendium		

[Edit](#) [Delete](#) [EWP](#) [Transcript of records](#)

# Other scenarios and APIs

- Sharing new versions of factsheets
- Approval/rejection of nominations
- Changes in nominations
- Learning agreements – all parts
- Confirmation of the arrival and departure dates → grants
- Digitally signed Transcript of Records (XML and PDF)
- Mail notifications as a supplement to Change Notification Requests
- Greater process automation



# Mobility Tool+

- Mobility Tool+ is managed by the *Directorate-General Education and Culture Unit* (DG EAC) of the European Commission. It is used for reporting purposes.
- It exposes:
  - MT+ Institutions API
  - MT+ Projects API
  - MT+ Dictionaries API

# MT+ Institutions API

Akademia Cybernetyki Poutnej - Authentication Service

Main People Employees Students P

Dictionaries > Nationwide dictionaries > Institutions

+ Add

Institutions

No Ostrava

3 Vysoká škola báňská - Technická univerzita Os

Details Address Telephones External ur

Name in national language: Vysoká  
Name in English: VŠB - T  
Type of institution: Foreign  
Parent unit:  
Participant Identity Code: 999868  
ERASMUS code: CZ OST  
POL-on code:  
SCHAC code: vsb.cz  
Institution code:  
Institution code in HR system:  
NUTS region:  
WWW: http://v  
E-mail:  
E-mail addresses for nominations:  
Display: Yes  
Is public entity:  
Is non-profit:

**Edit Institution** ? Help

**Data from EWP**

SCHAC code:

Name in national language: \* VYSOKA SKOLA BANSKA - TECHNICKA UNIVERZITA OSTRAVA

Name in English: VŠB - Technical University of Ostrava

Participant Identity Code: 999868144

ERASMUS code: CZ OSTRAVA01

ECHE number: 49166-EPP-1-2014-1-CZ-EPPKA3-ECHE

Date of ECHE validity: 01.01.2014 - 31.12.2023

Factsheet:

WWW: http://www.vsb.cz/cs/

Logo:

**Correspondence address** VYSOKA SKOLA BANSKA - TECHNICKA UNIVERZITA OSTRAVA  
17 LISTOPADU 15/2172

Country: Czechy (CZ) Choose

Foreign code: 70833

City/village: OSTRAVA PORUBA

Street: 17.listopadu 2172/15

House number:

Address type: \* Adres stały

**Data in USOS**

vsb.cz

Vysoká škola báňská - Technická univerzita Ostrava

VŠB - Technical University of Ostrava

999868144

CZ OSTRAVA01

Not stored in USOS

Not stored in USOS

Bytes remaining:2000

Characters remaining:79

Role: PELNA

? Help

1

# MT+ Projects API

The screenshot displays the MT+ Projects API interface. A modal dialog box titled "Get data from EWP" is open, showing the following information:

- Call year:** 2015 (indicated as a required field with an asterisk)
- Project ID:** 2015-1-PL01-KA104-000181
- Start:** 01.07.2015
- End:** 01.07.2016
- Action type:** KA104

The dialog also shows a second set of identical information below the first. At the bottom of the dialog, there are buttons for "Get data from EWP" and "Close". A legend indicates that an asterisk (\*) denotes required fields.

The background interface shows a list of institutions, with "Uniwersytet Warszawski" selected. The user is logged in as "LOGIN1 (Role: PELNA)".

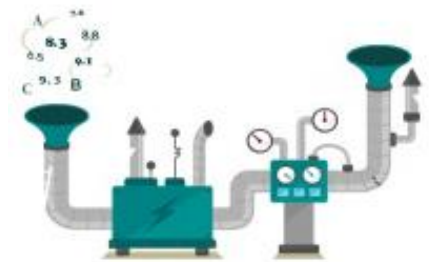
# MT+ Dictionaries API

The screenshot displays the MT+ Dictionaries API interface. A modal window titled "Education fields" is open, showing a table with two columns: "Code" and "Description". The table lists various education fields with their corresponding codes. The background interface shows a sidebar with "Institutions" and a list of institutions, including "Uniwersytet Warszawski".

Code	Description
0110	Education, not further defined
0119	Education, not elsewhere classified
0213	Fine arts
022	Humanities (except languages)
0322	Library, information and archival studies
04	Business, administration and law
0412	Finance, banking and insurance
0413	Management and administration
0416	Wholesale and retail sales
05	Natural sciences, mathematics and statistics
051	Biological and related sciences
06	Information and Communication Technologies (ICTs)
0911	Dental studies
1014	Sports
1020	Hygiene and occupational health services, not further defined
1021	Community sanitation
103	Security services
1088	Services, inter-disciplinary programmes
0915	Therapy and rehabilitation
102	Hygiene and occupational health services

# Further development plans

- Designing MT+ API for reporting mobilities – *work in progress*.
- Connecting OLA/Dashboard to the EWP Network – *work in progress*.
- Fine tuning existing APIs – *work in progress*.
- Automatic tests for all APIs – *work in progress*.
- Automatic grade conversion using **Egracons algorithm**.



# Steps to join the EWP community

- Get in touch with the EWP **Competence Centre**.
- Depending on the situation:
  - Develop your own connector,
  - Use connector developed by a national consortium (if you are a member),
  - Use connector developed by a commercial provider,
  - Use the **HUB (Dashboard)**.
- Contact EWP technical team to be entered to the **DEV Registry/PROD registry**.
- Gradually incorporate EWP services to your daily routines, some of them need small time investment while quickly paying back.
- Encourage your partners in mobility to join.
- Get ready for new Erasmus+ in 2021-2027.

**GOAL: interconnecting all ECHE holders**



SGROUP  
EUROPEAN  
UNIVERSITIES'  
NETWORK



helping universities succeed



UNISOLUTION



UNIVERSIDAD DE MÁLAGA



Janina Mincer-Daszekiewicz, [jmd@mimuw.edu.pl](mailto:jmd@mimuw.edu.pl)



- EWP project is co-funded by the Erasmus+ Programme of the European Union.
- In Poland it is also co-financed by the Polish Ministry of Science and Higher Education from the funds allocated in the years 2018-2019 for science,

<http://erasmuswithoutpaper.eu>

<http://developers.erasmuswithoutpaper.eu>

<http://github.com/erasmus-without-paper>

<https://www.linkedin.com/groups/13590744>

<https://twitter.com/hashtag/ErasmusWithoutPaper>

