EWP DEMO in Poland

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1.	Useful links	2
2.	Incoming and Outgoing Mobility APIs — Summary	3
3.	Polish DEMO installation – authentication	4
4.	Architecture	5
5.	USOSadm — scenarios with screen shots	5
5.1.	Registry API	5
5.2.	Institutions and Organizational Units APIs	е
5.3.	Interinstitutional Agreements API	18
5.3.1	. Getting data from the partners	18
5.3.2	. Getting data from demo.usos.edu.pl	21
5.3.3	. Notifying partners about changes in agreements	24
5.3.4	. Accepting notifications about changes in agreements	25
5.4.	Arrivals	25
5.4.1	. Arrival Nominations	25
5.4.2	. Moving Nominations to Arrivals	29
5.4.3	. Arrivals	31
5.4.4	. Transcript of records for one student	36
5.4.5	. Transcripts of records for many students	37
5.5.	Departures	37
5.5.1	. General scenario	37
5.5.2	. Departure	39
5.5.3	. Transcript of Records	41
6.	USOSweb — scenarios with screen shots	42
7.	Testing mobility scenarios in two DEMO installations	43
7.1.	Partner institutions	43
7.2.	Agreements	47

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7.3.	Nominations	. 54
7.4.	Notifications in the user interface	. 60
7.5.	Updates in the user interface	. 61
8.	Mobility Tool+ APIs	. 61

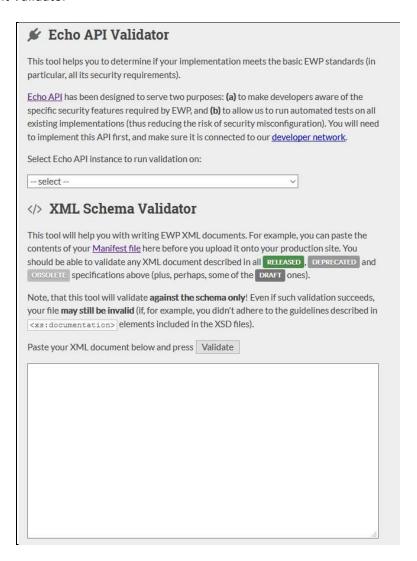
1. Useful links

1. EWP Registries

Production: https://registry.erasmuswithoutpaper.eu/

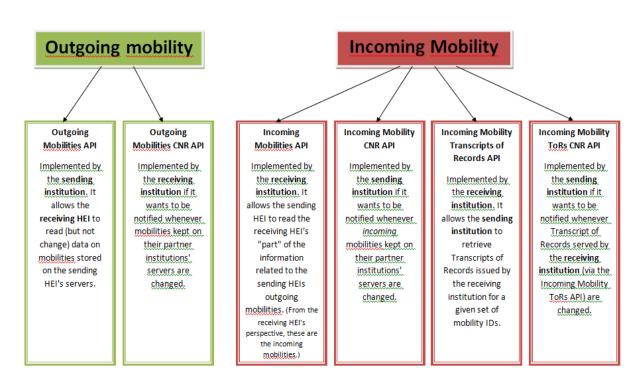
Development: https://dev-registry.erasmuswithoutpaper.eu/

- Currently defined manifest sources and their statuses: https://dev-registry.erasmuswithoutpaper.eu/status
- HEI/API Coverage matrix: https://dev-registry.erasmuswithoutpaper.eu/coverage
- 2. Main developer page: https://developers.erasmuswithoutpaper.eu/ Echo API Validator XML Document Validator



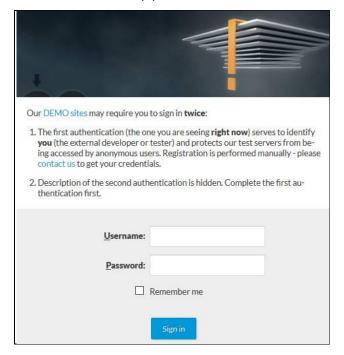
Basi	c information	
1 •	URL of the Echo API being tested: https://ewp.demo.usos.edu.pl/ewp/echo Datetime validation started: [2019-01-1718:02:09.7272] Datetime client keys regenerated: [2019-01-09112:35:35.5652] (710794 seconds before the second before the seconds before the second before the seconds before the second b	ore validation
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.	SUCCESS
4.	Querying for supported security methods. Validating http-security integrity.	SUCCESS
5.	Trying Combination[GATTT] (no client authentication). Expecting a valid HTTP 401 or HTTP 403 error response.	SUCCESS
	Details (click me)	
6.	$Trying \ Combination [PATTT] \ (no \ client \ authentication). \ Expecting \ a \ valid \ HTTP \\ 401 \ or \ HTTP \ 403 \ error \ response.$	SUCCESS
	Details (click me)	
7.	Trying Combination[GAHTT] (no client authentication). Expecting a valid HTTP 401 or HTTP 403 error response.	SUCCESS
	Details (click me)	
8.	Trying Combination[GAHTT] with no valid algorithm in Accept-Signature header. Expecting to receive unsigned response.	NOTICE
	Notices: - Response contains the Signature header, even though the client didn't ask for it there's nothing wrong with that, but you might want to tweak your implementat some computing time.	
	Details (click me)	

2. Incoming and Outgoing Mobility APIs — Summary



3. Polish DEMO installation - authentication

Polish DEMO installations are protected by the LDAP account. Before you start testing, visit the page http://usosweb.demo.usos.edu.pl (USOSweb) or https://usosadm.demo.usos.edu.pl/usosadm/ (USOSadm) and log in using the first set of credentials. The first authorization step can be recognized by the arrow pointing to the first arc at the top part of the screen.



USOSweb is a portal for students and academic staff. **USOSadm** is a portal for the administration. The Mobility module is part of USOSadm and part of USOSweb. Both applications have their own databases, which are synchronized on demand (usually all tables are synchronized each night and some chosen tables every quarter of an hour – let us know if you want to have some data synchronized more often).

To login to any of these applications use the same special string as username and password in the login window shown below.



4. Architecture

In USOS functionality of EWP is handled by the following system components:

- 1. **USOSadm** provides EWP interface to the users (mostly IRO staff).
- 2. **Connector** —responses to the EWP requests coming from the EWP Network.
- 3. **Daemon** (distributed as a separate Java WAR file) selects records from the table with CNRs, invokes **get** with the mobility ID to get data from the partner and stores it in the other tables for further processing.

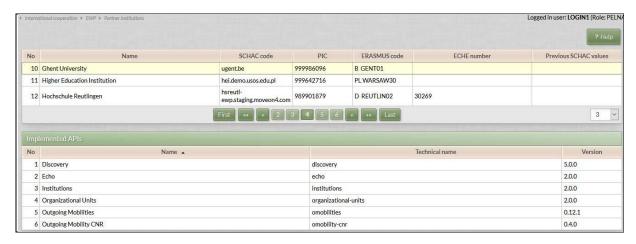
5. USOSadm — scenarios with screen shots

Some screens may change in the future, development work is in progress. Some text on the screens and in application may be in Polish, for example text available under HELP button. Use Google translator when needed.

5.1. Registry API

Go to USOSadm page *International cooperation* → *EWP* – *partner institutions*.

This screen shows the list of entries in the registry. Every authorized USOS user can see the list of partners in the EWP project (hosts in the EWP Network). The SCHAC code (second column on the screen) is crucial in all further actions since it is a unique identifier of the HEI. The user may want to view the SCHAC codes of the new partners to add them to the local tables. In the table below there is a list of APIs implemented by the given partner and their versions. For example, Ghent University implements five APIs, University of Warsaw implements 13 APIs. More detailed information about the supported endpoints is available in the registry: https://dev-registry.erasmuswithoutpaper.eu/coverage.



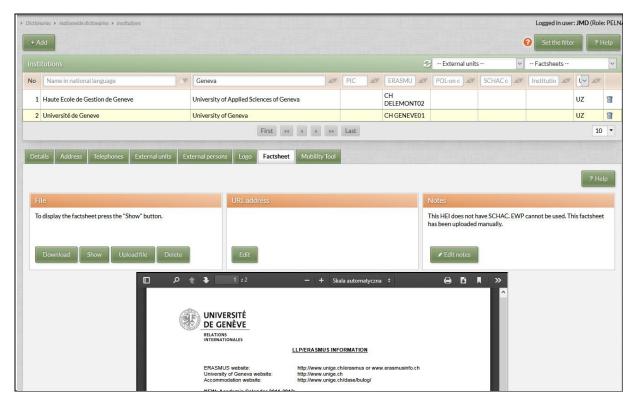


5.2. Institutions and Organizational Units APIs

1. Go to USOSadm page: *International cooperation* → *Dictionaries* → *Institutions*

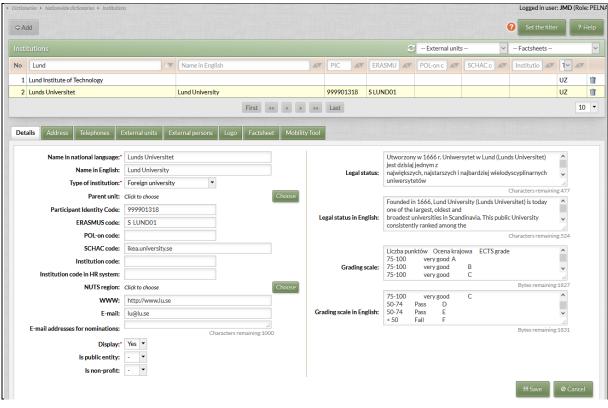
This is the list of HEIs. The SCHAC code is one of the attributes of the HEI. If the SCHAC code is not given, EWP APIs cannot be used (*Get data from EWP* button is not active), but still some EWP-oriented functionality is available. For example, a factsheet can be uploaded from the file. Then we can click the *Show button* to see it on the screen. We can add some comment.

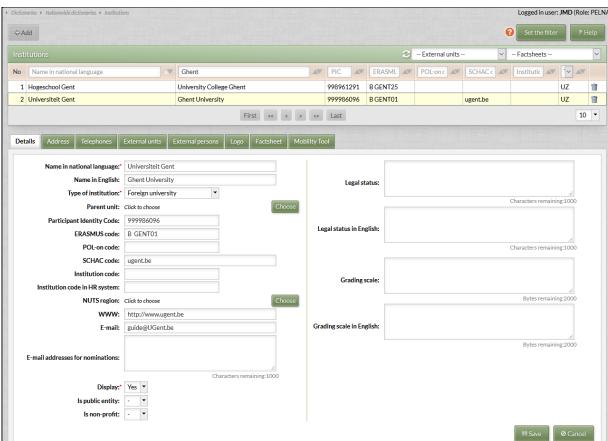
When in the system, this factsheet can be handled as any other factsheet. In particular, it will be available for students and staff in the student portal USOSweb (see chapter 6).



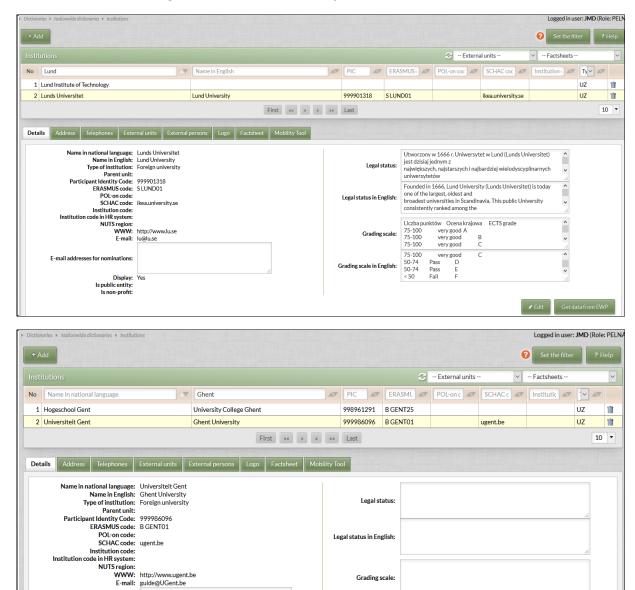
2. Go to USOSadm page: *International cooperation* → *Dictionaries* → *Institutions*

We have to add the SCHAC code to the description of the HEI before using any EWP API.





When the SCHAC code is given, the buttons *Get data from EWP* are active.

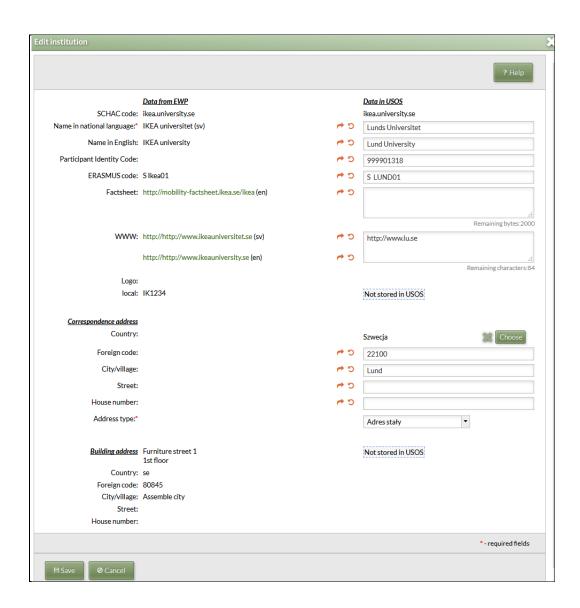


The operator can invoke *EWP Institutions API*. The API gets some structured data and URLs of factsheets (possibly many). On the left hand side of the screen there is data from the API, on the right hand side – data from the system. If the newer data comes from the EWP it can be copied to the system.

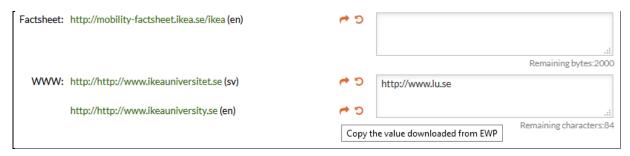
Grading scale in English:

E-mail addresses for nominations:

Display: Yes Is public entity: Is non-profit:



The small icons in the middle are *Copy* and *Restore*.



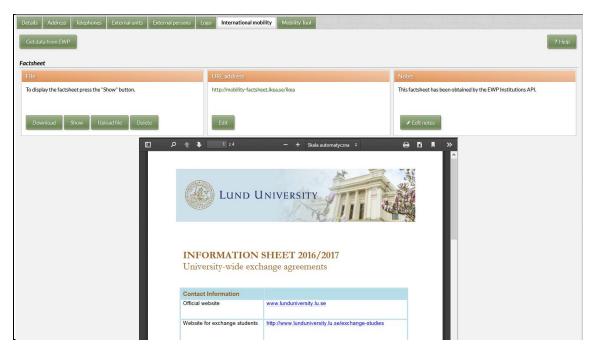
In the system we keep only one language version of the factsheet or WWW address (English) so only one can be copied. The user decides which one.



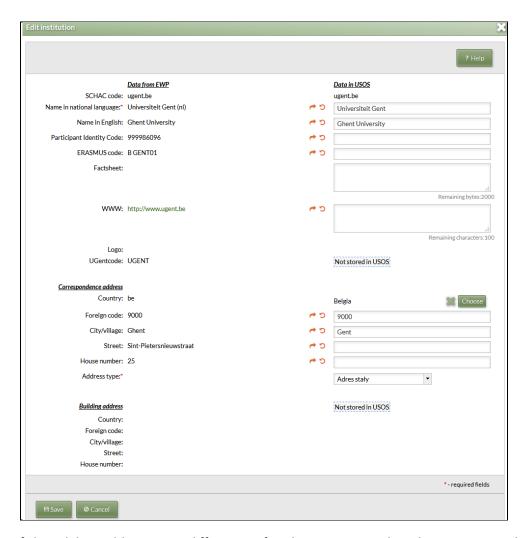
Changes have been saved. The URL of the fact sheet is already in the system.



The user can click onto the URL and see the factsheet (if URL is correct). A file can still be uploaded manually, as in case with Geneva. Both versions will be shown in USOSweb (see chapter 6).



3. Different HEIs may send different data by *EWP Institutions API*. Let us see what we can get from the Ghent University.

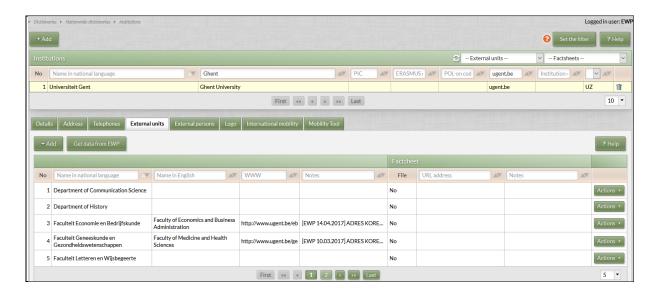


The set of data delivered by EWP is different. A factsheet is missing but there is some other data missing in the local system, like PIC, Erasmus code, WWW URL, which can be copied on demand. The factsheet can be uploaded manually.

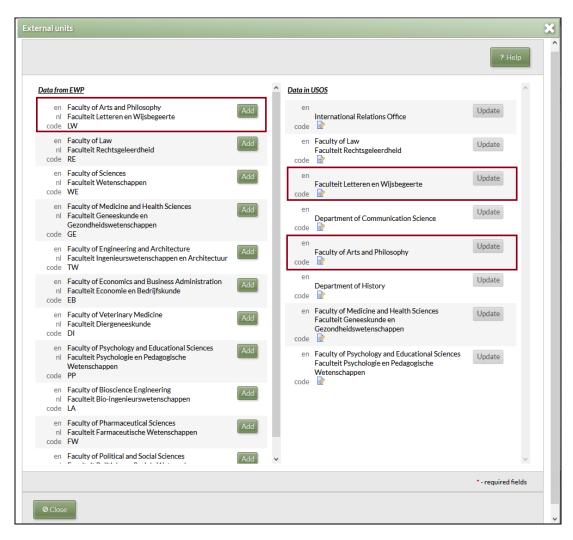


4. Go to USOSadm page: *International cooperation* → *Dictionaries* → *Institutions*

On the tab *External units* there is a list of organizational units of the HEI.



EWP Organizational Units API can be used to get data about the units.

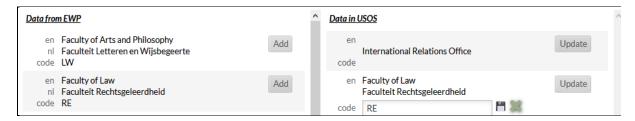


This is an interesting use case. There is a list of the units in the local system but it does not match the list of units delivered by the EWP API. In particular in the local systems there are two units which correspond to the one unit from the partner institution: Faculty of Arts and Philosophy and Faculteit Letteren en Wijsbegeerte. It seems that somebody, by mistake, entered the same unit twice, once

with the English name and once with the original name. **EWP helps to avoid such situations.** The units of the new partners can be obtained straight from the partner's SIS. To correct the data, one of the units should be deleted from the local system and the remaining one can be updated with the correct data delivered by EWP.

EWP code is the unique identifier of the unit. It can be used to match a unit in the local system with the unit in the partner database.

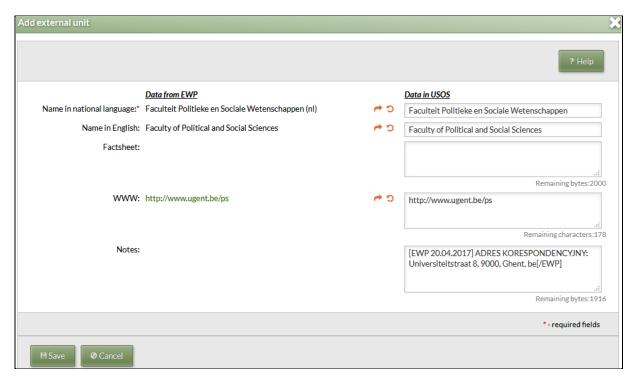
If there is no unit with that EWP code in the local system the code can be added to the existing unit (the unit could have been entered to the system earlier by the user).



Now the data can be synchronized using *Update* button.



The other possibility is that the new unit is added to the system (it becomes a new unit). Use the **Add** button to add the unit.



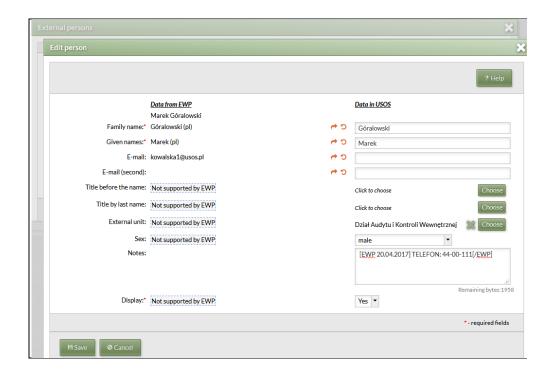
Data which does not fit to any of the fields in USOS is automatically copied to the text field for *Notes* (like the address in the screen above). It will be decided later what will happen to this data.

The user will decide which units of the partner institutions will be copied to the local system and how they will be matched with the existing units.

5. Go to USOSadm page: International cooperation → Dictionaries → Institutions

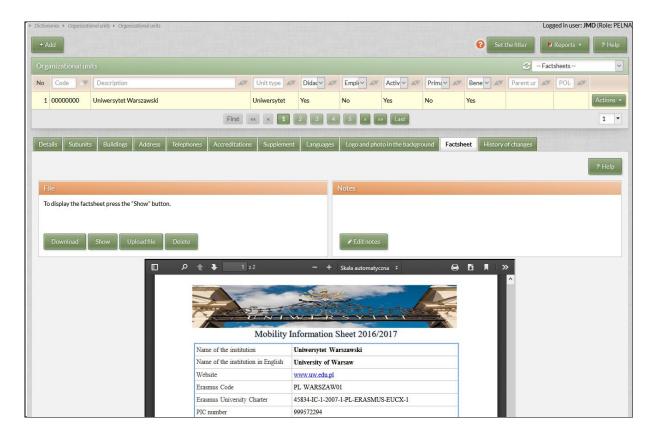
On the tab *External persons* there is a list of employees from the HEI involved in the interinstitutional cooperation. You can get the list of employees from the partner and add them selectively to the local database. Not all fields are supported.





6. Go to USOSadm page: Dictionaries → Organizational units → Organizational units

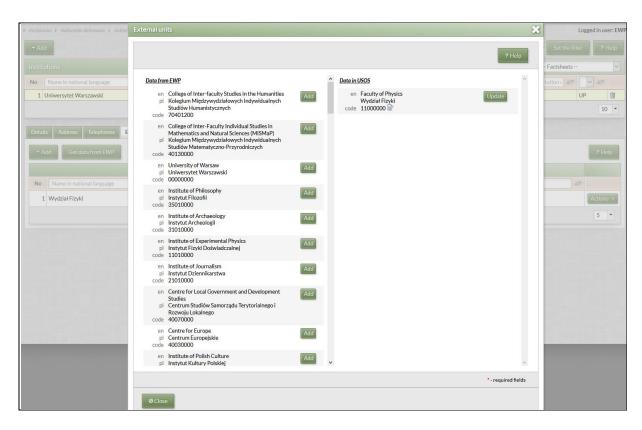
The local factsheet can be uploaded on this page for the institution and each of its organizational units. The structure of units is hierarchical, the institution is the top level organizational unit (the root of the tree). The factsheet can be viewed on the screen. The factsheets and other data about the institution and its organizational units will be delivered to the partner via *EWP Institutions API* and *EWP Organizational Unit API* (server side).



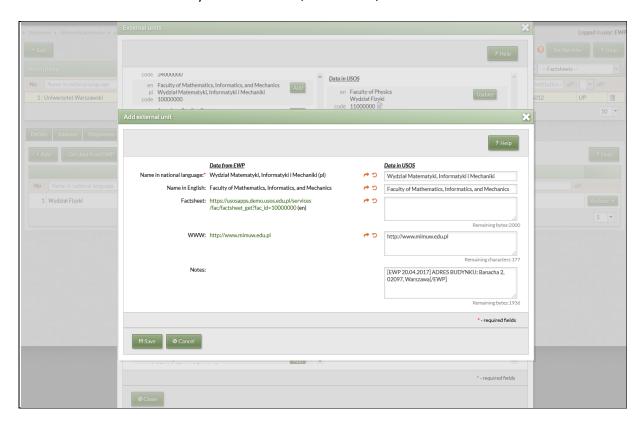
7. Installation USOS DEMO is both the EWP client and the EWP server. We can invoke *EWP Institutions API* of USOS DEMO from USOS DEMO. The obtained data is displayed and can be stored in the local database on demand – in the different tables than the ones the data comes from.



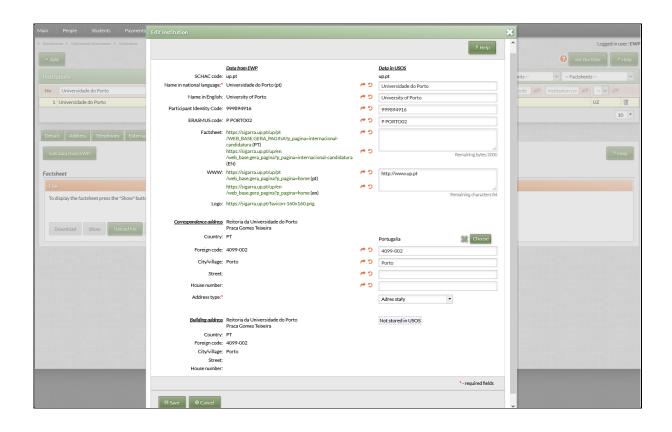
These are the organizational units downloaded via EWP from the University of Warsaw.

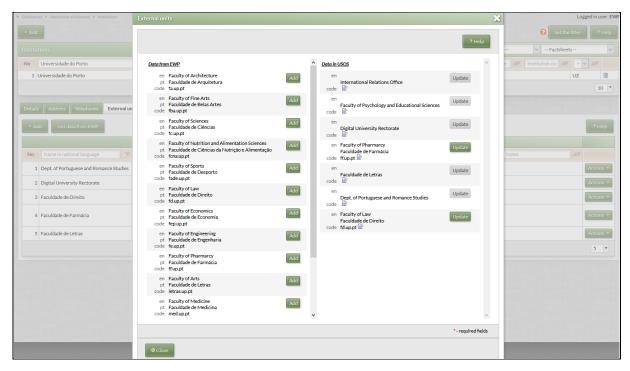


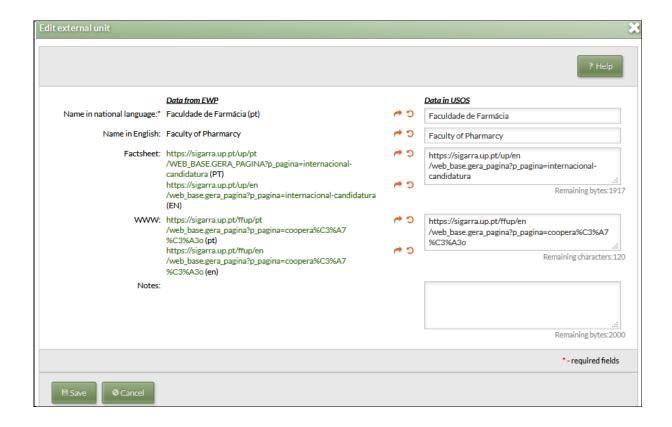
These are details of the Faculty of Mathematics, Informatics, and Mechanics.



8. Here is another example – data delivered by EWP from the University of Porto.





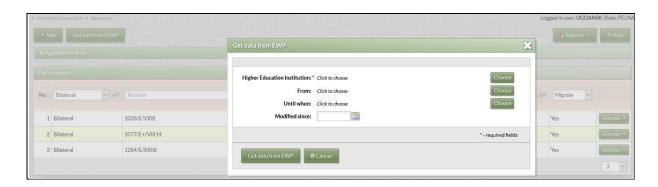


5.3. Interinstitutional Agreements API

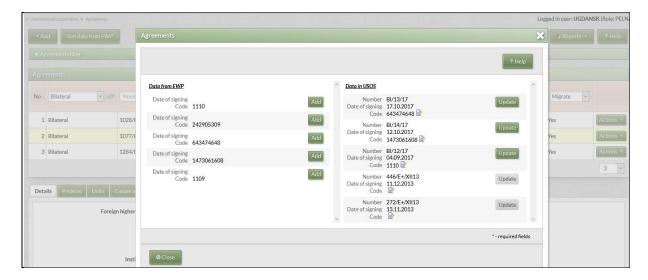
5.3.1. Getting data from the partners

Interinstitutional agreements are displayed on the page *International cooperation* \rightarrow *Agreements*. Choose button *Get data from EWP*, on the new canvas choose your partner institution, then click *Get data from EWP* to invoke *EWP Interinstitutional Agreements API*.

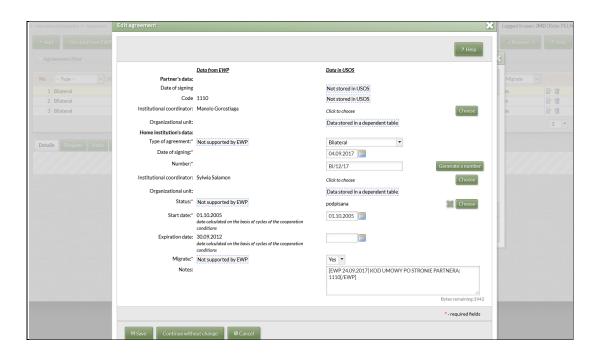
Imported agreements may by filtered by the range of didactic cycles **From**, **Until when** and/or the date **Modified since**. In the first case what is sent in the request to the server is the list of didactic cycles from the given range — Polish server will answer with all agreements for which at least one cooperating condition will at least partly cover one of those cycles. In the second case Polish server will answer with all the agreements which have been modified since the given date. The host institution is recognized on the basis of the system parameter **P_SCHAC**.



The list of the agreements obtained from *Universitat Pompeu Fabra* is shown on the next screen.



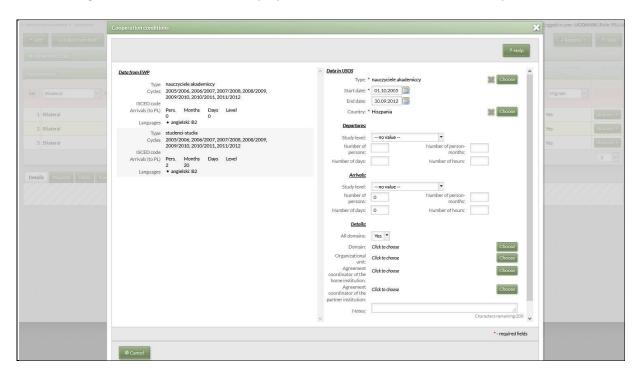
If the agreements are matched (by the code), the agreement in USOS may be updated with the more recent information coming from the partner. This is the case for the agreement with the code 1110.



After *Continue without change* or *Save* cooperation conditions are displayed. New cooperation conditions may be added or the existing ones updates.



After clicking **Add** the new window is displayed, with the details of the added cooperation condition.



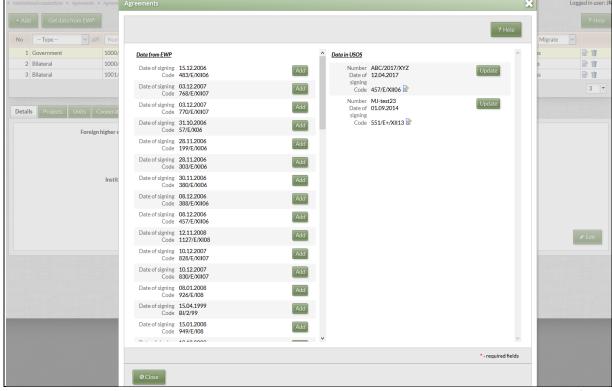
After we approve changes the system returns to the list of cooperation conditions, where we can either add new ones or edit the existing ones.



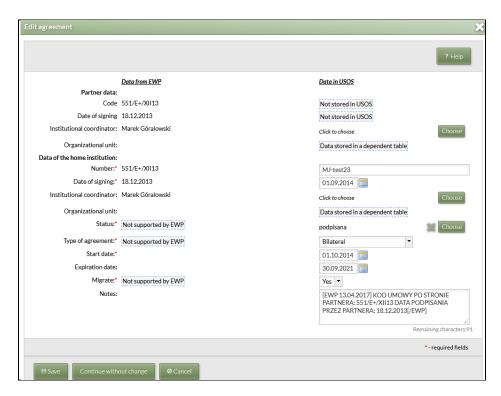
5.3.2. Getting data from demo.usos.edu.pl

To get agreements with more data, e.g. from the University of Warsaw, we have to use another client. There is an installation in the local network. It uses the local registry with entries added manually:

 Prefectura of Heraklion — getting "real" agreements between UW=demo.usos.edu.pl (receiving institution) and Charles University (Univerzita Karlova)=cuni.cz (sending institution);

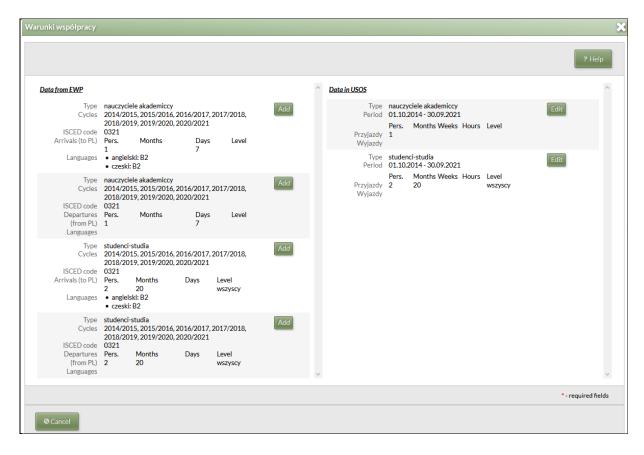


Click the *Update* button on the right hand side to open the window with the attributes of the agreement.

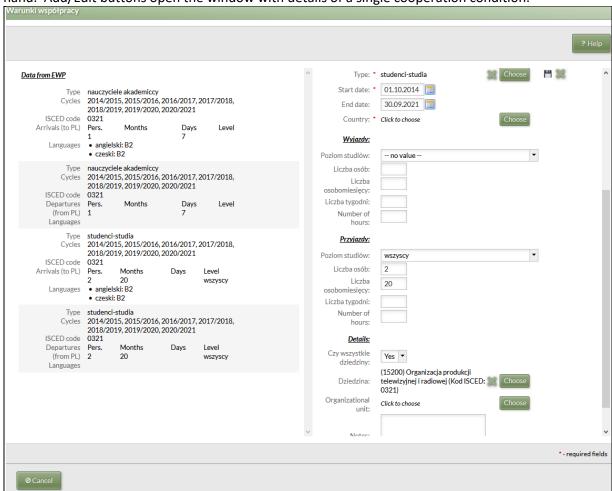


Not all fields in the local tables match fields obtained from EWP. This may change in the future, if end users decide to store more information obtained from the partner by EWP. The operator can compare the data and modify it on the right hand side of the window.

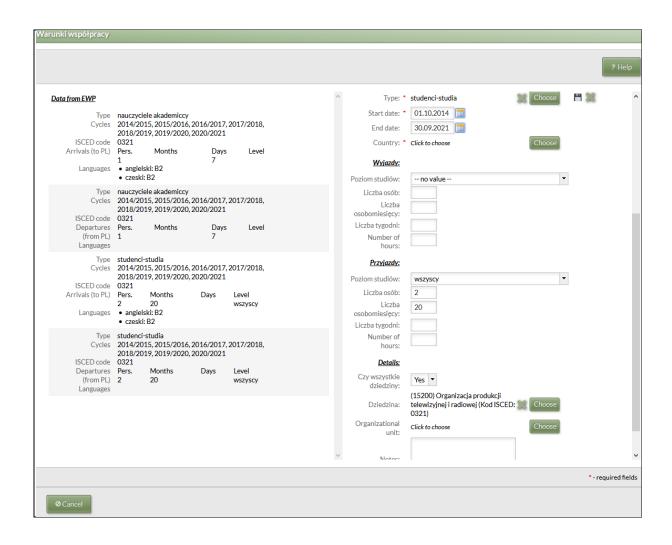
Click the *Save* or *Continue without change* button to proceed to the next window, with cooperation conditions of the agreement.



The operator can choose between the *Add* button (on the left) to add the new cooperation condition and the *Edit* button (on the right) to edit the existing cooperation condition. Cooperation conditions do not have identifiers which would allow to match them uniquely, so matching has to be done by hand. Add/Edit buttons open the window with details of a single cooperation condition.

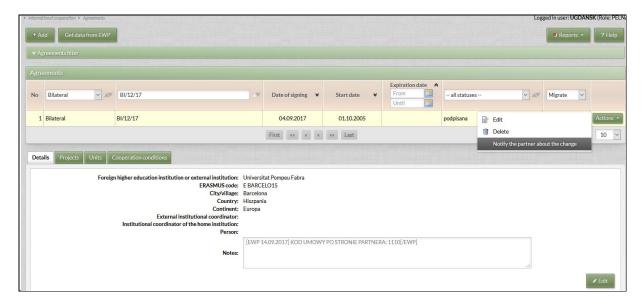


The operator can add new values or change the ones uploaded by EWP. Fields which are required but are missing in the set obtained from EWP have to be filled in by hand.



5.3.3. Notifying partners about changes in agreements

Let's assume that the home institution made some changes in the agreement and wants to inform the partner. One of the actions available in the context of the agreement is **Notify the partner about the change**. The notification will be sent under the condition that the partner implements *EWP Interinstitutional Agreement CNR API*.



5.3.4. Accepting notifications about changes in agreements

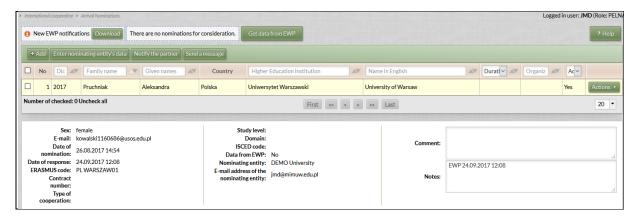


5.4. Arrivals

5.4.1. Arrival Nominations

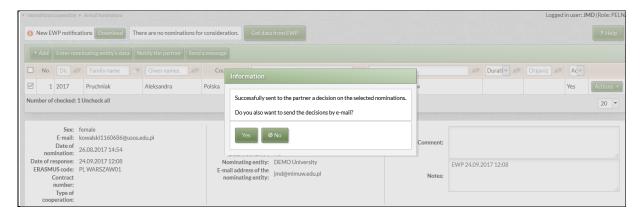
Nominations for arrival are displayed on the page *International cooperation* \rightarrow *Arrival Nominations*.

Let's see the scenario on the series of screenshots. We enter *Arrival nominations*. The message says *There are no nominations for consideration*, since the one displayed in the page has already been accepted.



We can notify the partner by pushing Notify the partner.





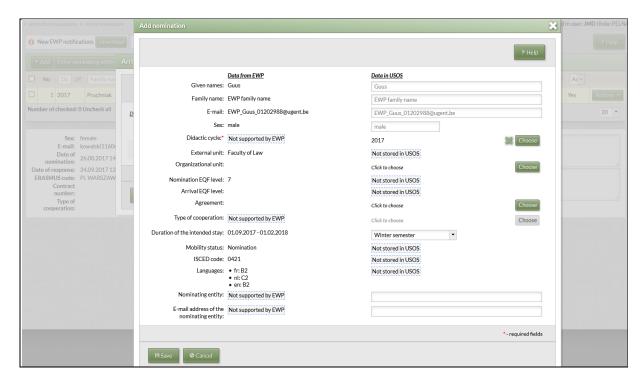
If the institution does not use the EWP Network, it can enter nominations — obtained from the partner by e-mail — to the local system manually, using the button **Add**. In that case information to the nominating partner can be sent only by e-mail.

The EWP process starts when the sending institution notifies the receiving institution about the nominations. The assumption is that the sending institution knows the best moment to send the notifications, usually when the nomination process is finished at the sending institution.

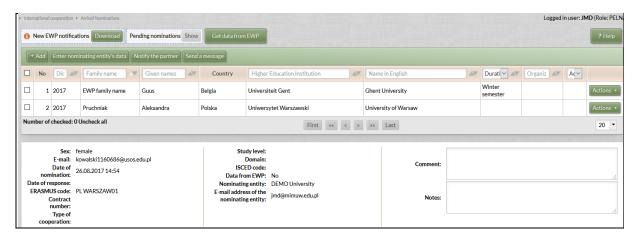
Choose button *Download* to get new EWP notifications. Notifications may be downloaded many times before being stored as nominations.



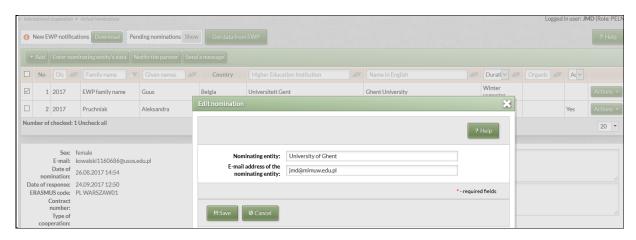
Eventually the operator clicks button Add.



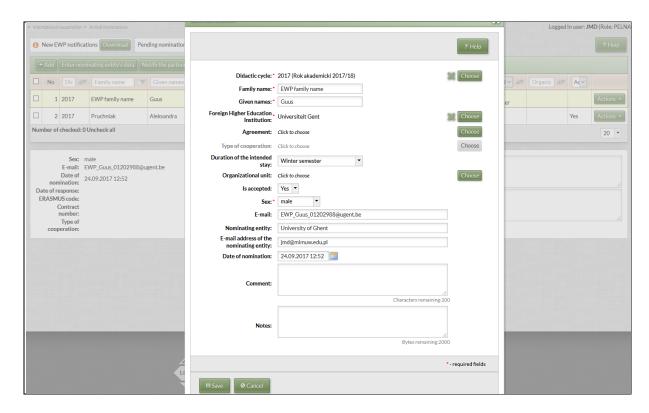
Then Save.



Choose *Enter nominating entity's data* to enter name and email of the nominating entity for the selected nominations.



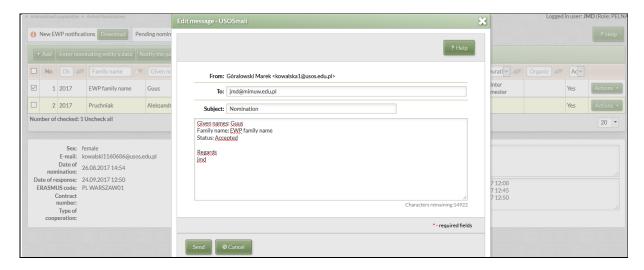
Choose button *Edit* available upon *Actions* to see details of the nomination and make changes.



When the nomination is either accepted or rejected, it is possible to send notification to the partner. When button *Notify the partner* is clicked, the list of nominated students is displayed. When button *Send* is selected, the decision is send to the partner by the EWP Network (endpoint *update-statuses* from *EWP Outgoing Mobilities API*).



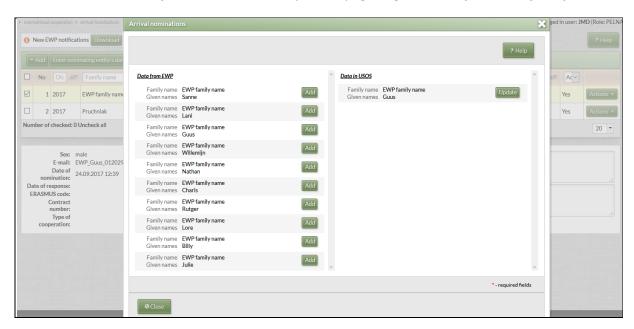
The partner may also be informed by e-mail. After clicking button **Send a message** the operator can complete the message (its draft version is predefined).



Choose button *Get data from EWP* available upon *Actions* to invoke endpoint *get* of *EWP Outgoing Mobilities API* for a single nomination.

There is also *Get data from EWP* button in the upper part of the page (equivalent to the one in *Arrivals*). It can be used to obtained data about nominations/arrivals from the sending institution. It is up to the local coordinator if the nominations/arrivals from the sending institutions are stored as nominations, accepted and then transferred to arrivals (in the *Arrival Nominations* page) or transferred directly to arrivals (in the *Arrivals* page).

Choose button *Get data from EWP* from the top of the page to get *all data provided by the partner*.



This time choose button *Get data from EWP* from the top of the page to get *only data of objects stored in USOS*. Only one record is now shown – the one stored before.



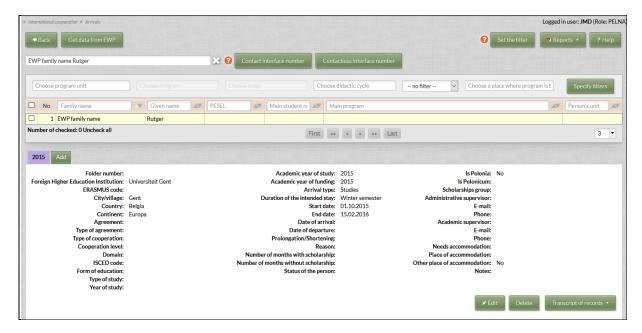
5.4.2. Moving Nominations to Arrivals

Eventually the nomination is accepted and the operator performs action *Move to arrivals* available upon *Actions* to move it to the *Arrivals* section. The system invokes *get*, in a new window on the left hand side displays data from the nomination and on the right hand side data obtained from EWP by *get* (most recent set of data).



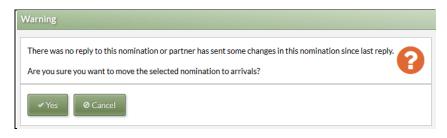
The operator should complete the missing data which are obligatory in the local system but has not been delivered by the sending institution.

When the operator pushes *Save and go to arrivals*, the record is removed from nominations and new one is added to arrivals, a new person is stored in the system (or the arrival is associated with the existing person), and the system opens the *Arrival* page for the newly added arrival. Now the operator can complete other missing data (like the host units at the receiving institution).

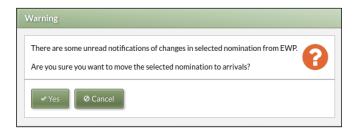


Before moving a nomination to arrivals, the system warns the operator about various situations:

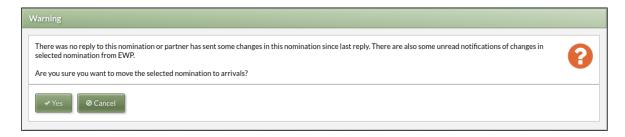
1. There was no reply to this nomination (the receiving institution has not sent update nor e-mail) or the receiving institution had collected change notification request but has not sent cofirmation (*update*).



2. The sending institution had sent change notification request concerning this nomination which has not been collected by the receiving institution (*New EWP notifications* message is displayed in the top left corner).

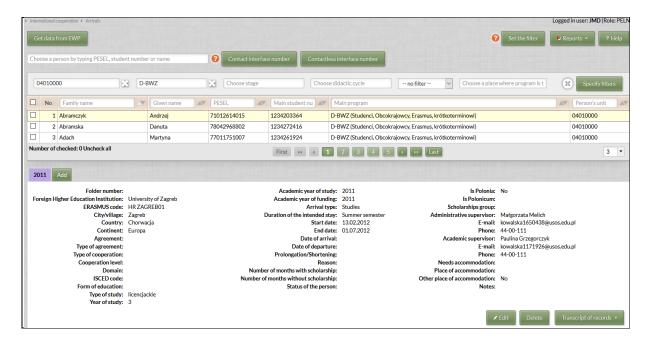


3. Both conditions are met.



5.4.3. Arrivals

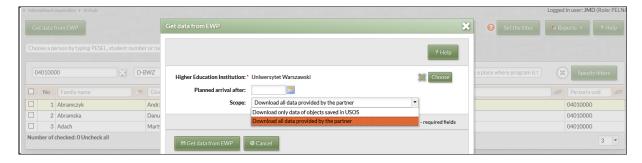
Arrivals are displayed on the page *International cooperation* → *Arrivals*.



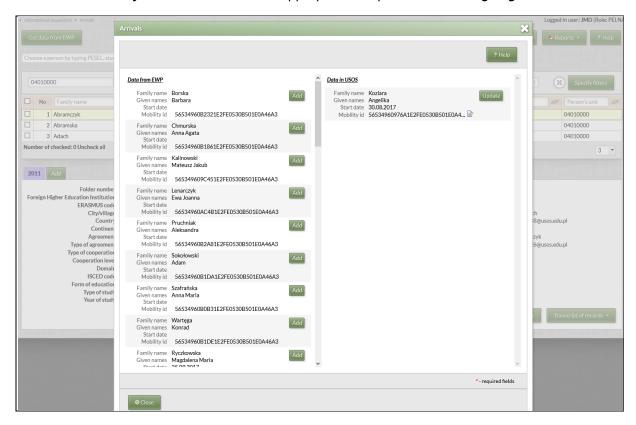
Arrivals can be entered by hand, using the data obtained in e-mails, exported from the admission system (IRK-BWZ), transferred from nominations (see chapter on *Arrival Nominations*), or obtained directly from the EWP Network as arrivals.

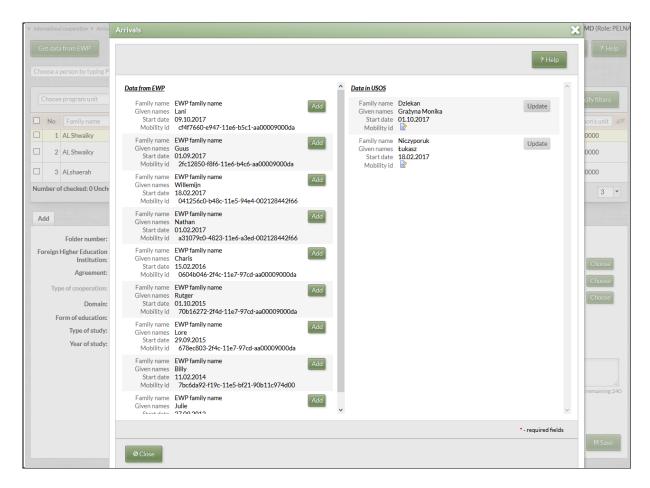
Choose button *Get data from EWP*, in the new window choose your partner institution. There are two options – the system can either download all data provided by the partner (first invokes

endpoint *index* then endpoint *get*) or only data objects saved in the local system (first selects objects from the database then invokes endpoint *get*).



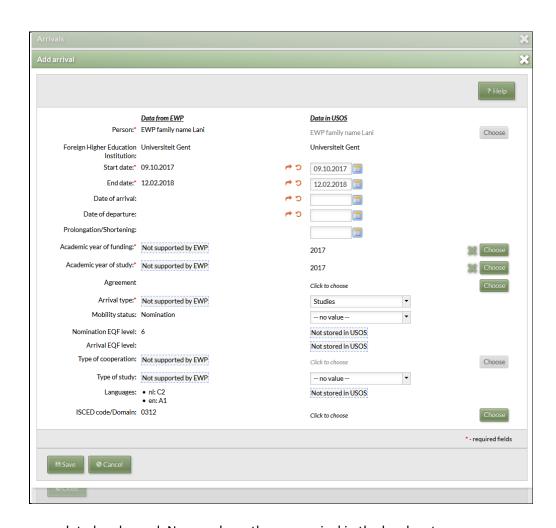
Then click Get data from EWP to invoke the appropriate endpoint of EWP Outgoing Mobilities API.



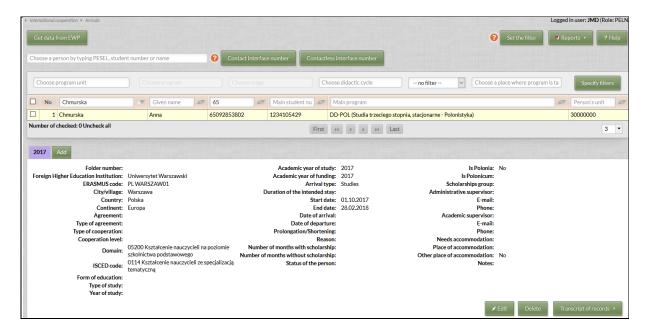


After clicking Add.





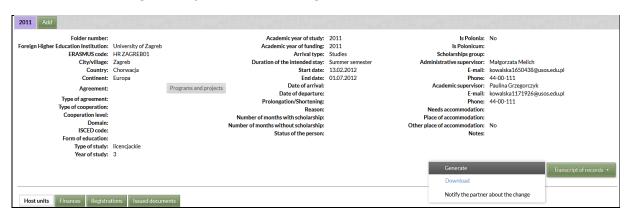
Data are completed and saved. Now we have the new arrival in the local system.



5.4.4. Transcript of records for one student

At the end of the mobility the incoming students should obtain transcripts of records with all achievements from the mobility period at the hosting (receiving) institution. The staff member of IRO or of the student's office of the receiving institution should issue transcripts of records for the incoming students. The documents should either be printed and delivered to the students or the sending institutions on paper, or generated, stored in the database and send to the sending institutions either by e-mail or — on request — by the EWP Network. There are three actions available in the context of the particular arrival under the button **Transcript of records**:

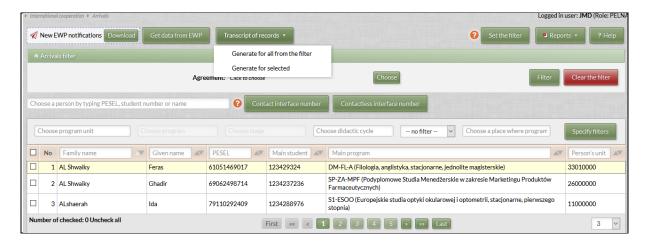
- Generate generate the transcript and save the file in the local system. If the transcript of
 records for the selected arrival has already been generated, the system will warn the user
 and ask for confirmation that the action should be continued. Data are prepared in the ELMO
 format. Eventually PDF will be signed digitally.
- **Download** download the transcript or show it on the screen. This option is active only after the file has been generated and stored.
- Notify the partner about the change notify the partner that the transcript has been changed. It is not possible to send a change notification if the partner does not implement *EWP Incoming Mobility ToRs CNR API* (this API is implemented by the sending institution if it wants to be notified whenever a transcript of records served by the receiving institution via *EWP Incoming Mobility ToRs API* is changed).



	anguage of Type/No. of hrs instruction	Grade	Distribution %	ECTS
Winter semester 2014/2015				
(2600-DSMdz1EP) Elements of Psychology	PL cw 30	[4,5]	76 (11) 13	4
(4101-ANGOB1) English - intermediate level	EN lek 60	[2]	0 (39) 61	
(2600-DSMdz1PPWG) Introduction to Economic Law	PL wyk 30 / cw 30	[5/2]		
(2600-DSMdz1PZI) Introduction to Management	PL wyk 30 / cw 30	[4/2]		
(2600-DSMdz1MATI) Mathematics I	PL cw 30	[3,5 NK]	0 (32) 68	
(2600-DSMdz1MIKROI) Microeconomics I	PL wyk 30 / cw 30	[/2]	0 (23) 77	
(2600-DSMdz1PIDB) Principles of information science for busin	ess PL wyk 30 / cw 30	[5/3,5]		4
(2600-DSMdz1OWI) Protecting Intellectual Property	PL kon 4	[NK]	0 (100) 0	
(4023-O-PŁYW3) Swimming – learning to swim	PL wf 30	[ZAL]	71 (29) 0	
(0000-BHP-OG) Workplace health and safety	PL kint	[NZAL]	0 (100) 0	
Summer semester 2014/15				
(2600-DSMdz1PFP) Basic Enterprises Activity	PL cw 30	[NK]	0 (28) 72	
(3104-M2SNW-ZF1-OG) Courses, recommended by the coordir the block as a complementary series "Major problems of the ear modern era"		[4,5]	n/a	4
(2600-DSMdz1ES) Elements of Sociology	PL kon 30	[5]	85 (15) 0	3
(4101-ANGOB1) English - intermediate level	EN lek 60	[4]	53 (11) 36	2
(2600-DSMdz1MATII) Mathematics II	PL cw 30	[5 NK]	0 (31) 69	
(2600-DSMdz1MIKROII) Microeconomics II	PL cw 30 / egz	[3,5 3,5/4,5 NK]	1(12)	
(3104-WH13KOS) Only and unique? Power systems in the Polic Commonwelth and other European countries (2nd half 17 & 18 t century)	*	[3,5]	n/a	2
(2600-DSMdz1PPA) Principles of Administrative Law	PL wyk 30 / cw 30	[5/3,5]		4
(2600-DSMdz1PZII) Principles of Organisations and Manageme Theory II	ent PL cw 30	[3]	25 (21) 54	3
(2600-DSMdz1RP) Probability Calculus	PL cw 30	[4 5]	88 (12) 0	3

5.4.5. Transcripts of records for many students

Transcripts can be generated for selected mobilities or for all from the active filter.



5.5. Departures

5.5.1. General scenario

Scenario starts when outgoing mobilities (departures) have already been defined (either in USOSweb or directly in USOS).

1. Staff member of IRO

Visits the page **Departures**. Activates the filter window to display students nominated for departures. Marks the departures to be sent to the receiving institution. Can mark or unmark individual students or groups of students.

2. USOS

Generates the report with the list of nominated and marked students. Asks the operator for confirmation.

3. Staff member of IRO

Checks the report. If anything is wrong, stops the procedure to make corrections. If everything is OK, accepts the report.

4. USOS

USOS supports a couple of options:

- to generate and print/store the report,
- to send the report by e-mail,
- to send the information by the EWP Network and optionally also send the report by email.

If the receiving institution does not use EWP, options associated with EWP are disabled. E-mails are sent to addresses stored in the system. It is possible to add comment to e-mail, which will not be stored in USOS. USOS supports extra option (set by default) *Do you want to change status of the departure* from *In preparation* to *Active*. When information is sent by the EWP Network, the option is always set and cannot be changed.

5. Staff member of IRO

Chooses the appropriate option and confirms the decision.

6. USOS

Depending on the chosen option either sends e-mail, sends information about nominations using **EWP Outgoing Mobility CNR API**, changes statuses of the departures from 'P' to 'A'. Date when the nomination has been sent is stored. If the nomination has been sent using the EWP Network, special flag is set.

- 7. The following steps concern only data sent by EWP.
- 8. Receiving institution (see chapter on *Arrival Nominations* and *Arrivals*)
 Gets information about nominations using endpoint *get* of *EWP Outgoing Mobilities API*. Sends acceptance or rejection decisions using endpoint *update-statuses* of *EWP Outgoing Mobilities API*.
- 9. Sending institution

Inserts information on acceptance or rejection decision delivered by *update-statuses*.

10. Staff member of IRO

Visits the page **Departures**.

11. USOS

Checks if there are pending acceptance or rejection decisions. If yes, then copies them to a separate table.

12. USOS

Checks if there are any records not yet shown to the operator. If so, informs the operator.

13. Staff member of IRO

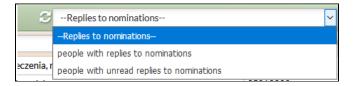
Browses the records. Can mark the history of decisions as read.

14. Staff member of IRO

If there are rejected nominations, performs all necessary business actions (updates data in USOS, sends e-mails outside USOS etc.). Then can resend nominations to the receiving institution (the scenario is repeated).

Most nominations chosen to be sent to the receiving institution will be in status 'P' (and the status will change to 'A'), but it is also possible to send nominations in status 'A', for example when the record initially rejected by the receiving institution has been corrected and is send again.

There is a filter which can be used to find all nominations sent by EWP which have been neither rejected nor approved by the receiving institution.



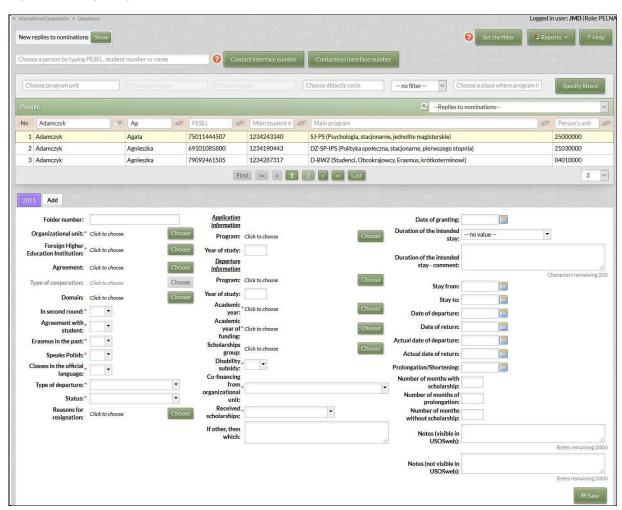
The receiving institution can invoke endpoint *index* to get identifiers of all mobilities or endpoint *get* to get details of the chosen mobilities (from the given time range and with the appropriate statuses).

If a student resigns from the mobility, the staff member should change the status to **Resign** and push the button $EWP \rightarrow Notify$ the partner about the change.

In USOS nominations and departures are stored in the same table and can only be distinguished by the status. In particular, they are sent to the partner in the same way. This is up to the partner to decide whether they should be stored as nominations or arrivals.

5.5.2. Departure

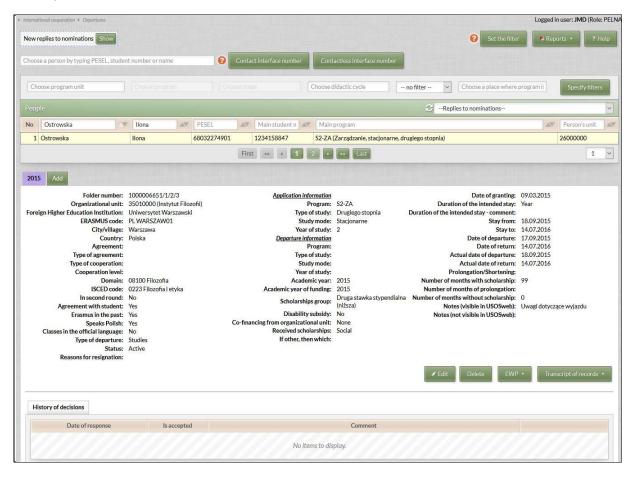
Departures are displayed on the page *International cooperation* \rightarrow *Departures*. Every departure is represented by a separate tab in the lower block.



The notifications send by the receiving institutions are available under the button **Show** next to **New replies to nominations**. Pushing the button is equivalent to setting the filter **people with unread replies to nominations**. The sending institution has to implement **EWP Incoming Mobility CNR API**, which will be used by the receiving institutions to send notifications. Another possible value of the filter is **people with replies to nominations**.

After reading the **new replies to nominations**, we get the date of response in the block **History of decisions**. There is a link **Mark as read** to mark the pointed answer as read.

The button **EWP** for handling a particular departure is located in the right down corner of the tab of this departure.



There are some actions under the button. The action *Notify the partner about the change* invokes *EWP Outgoing Mobility CNR API* to notify the receiving institution that the mobility has changed on the server of the sending institution. The action *Get actual stay dates* invokes *EWP Incoming Mobility API* to get actual arrival and departure date to/from the receiving institution. The operator will make a decision.

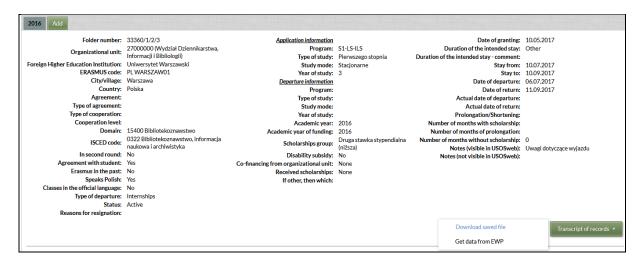


5.5.3. Transcript of Records

When the departure period is over, the achievements of the outgoing students from the mobility period should be sent from the receiving institution to the sending institution. If the transcript of records is delivered by student or by the partner institution in the traditional way — on paper or as PDF sent by e-mail, it has to be manually entered to the local system. EWP offers the possibility to transfer the transcript via the Network. The sending institution may either ask for the transcripts for the outgoing students by calling *EWP Incoming Mobility ToR API* or be notified by the partner that the transcripts are ready by implementing *EWP Incoming Mobility Tor CNR API*.

The page *International cooperation* \rightarrow *Departures* displays information about all the departures from the sending institution. For a particular student each tab corresponds to one departure with the academic year as the label of the tab. In the right down corner of the tab there is the **Transcript of Records** button with two options:

- Download saved file this option is available only when the document has already been
 obtained and stored in the system. The document is shown on the screen, can be printed or
 downloaded on the local computer.
- **Get data from EWP** the system invokes **EWP Incoming Mobility ToRs API** to get the transcript from the partner institution.

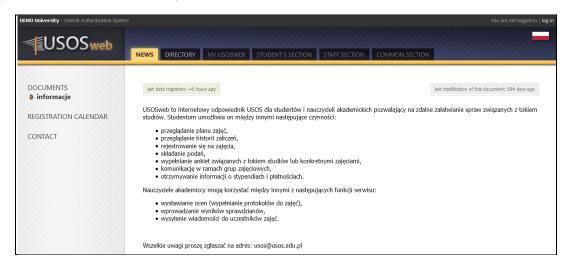


If we choose the second button to get the data from the EWP Network, when the transcript is not yet ready in the system of the receiving institution, the system also displays the error message "Partner has not sent a transcript of records for this departure".

Eventually, the transcript is successfully obtained from the receiving institution and saved in the local system of the sending institution. In the pilot version of the EWP connector a transcript obtained from the EWP Network is stored in the context of the departure as the binary object XML which includes PDF, but eventually, as in EMREX, it will be unpacked and each course, grade and number of ECTS will be stored separately as student achievements.

6. USOSweb — scenarios with screen shots

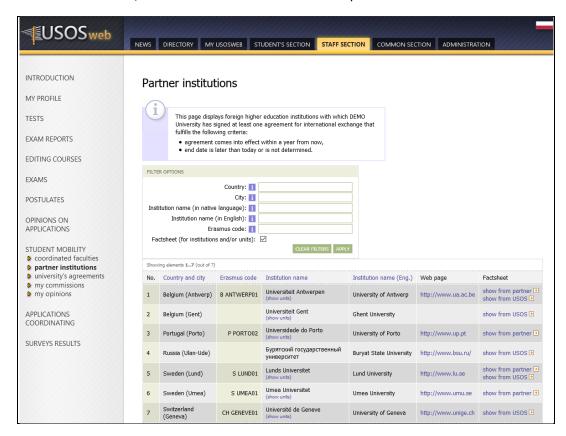
USOSweb is a portal for students and academic staff. DEMO installation is available at http://usosweb.demo.usos.edu.pl/.



You can login to USOSweb using login and password **login1**. There are many valid accounts, login and password are always the same.

The Mobility module is available in the STUDENT'S SECTION and in the STAFF SECTION.

On the *partner institutions* page there is a list of partner institutions with their factsheets — uploaded locally (link *show from USOS*) or obtained from the partner by the EWP APIs (link *show from partner*). The filter in the upper part of the page allows limiting the list to the institutions with institution factsheets and/or unit factsheets. Factsheets are opened in a new tab.



Link **show units/hide units** allows a user to toggle between the two views — with the list of the organizational units of the institution shown or hidden.



Databases of the two applications — USOSadm and USOSweb — are synchronized automatically or on demand.

It is worth mentioning that the same installation of USOSweb fully supports EMREX, i.e. contains all three parts of it — **EMREX client**, **SMP** (Student Mobility Plugin) and **NCP** (National Contact Point).

7. Testing mobility scenarios in two DEMO installations

University of Warsaw runs two DEMO installations with EWP connectors:

- 1. DEMO (with SCHAC demo.usos.edu.pl) **University of Warsaw**, in short UW, https://usosadm.demo.usos.edu.pl/usosadm/.
- 2. HEI DEMO (with SCHAC hei.demo.usos.edu.pl) **Higher Education Institution**, in short HEI, https://usosadm-hei.demo.usos.edu.pl/usosadm/.

In this chapter we show how the EWP Network supports real life mobility scenarios.

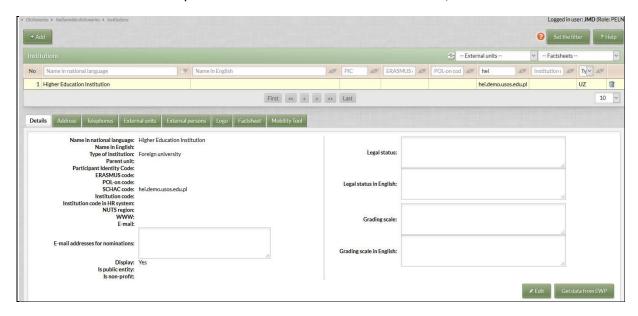
7.1. Partner institutions

The first scenario starts when UW decides to sign an agreement with the new partner – HEI. This will be the first agreement between these two institutions.

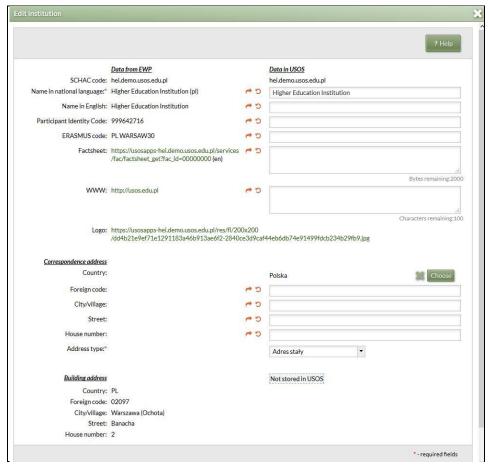
UW first checks in the local system (USOSadm) if HEI is connected to the EWP Network. HEI runs a fully functional EWP connector with many supported APIs. This will allow UW to exchange data with HEI using the EWP Network.

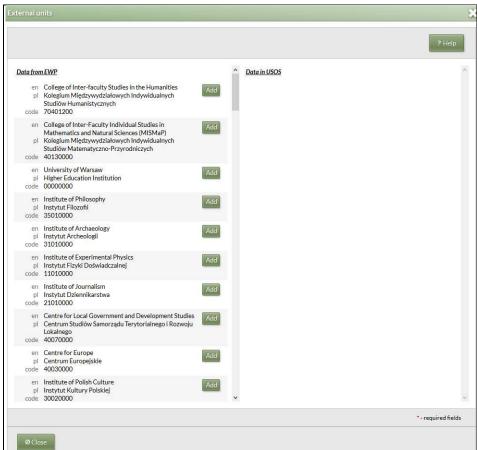


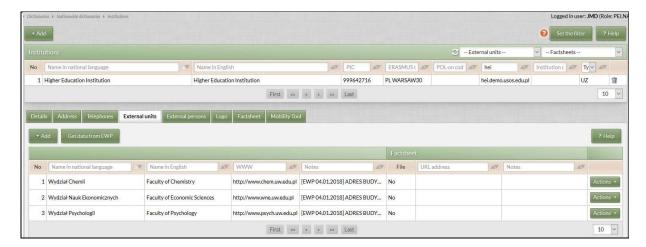
UW enters HEI to the local system with the minimal information – name, SCHAC.



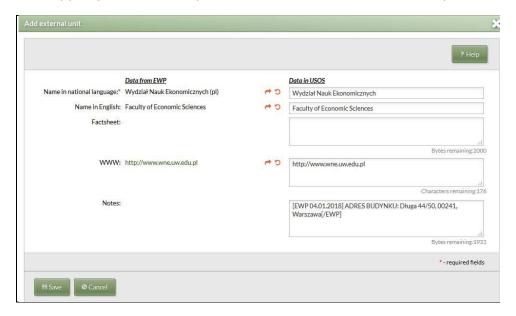
The other data can be obtained electronically via the EWP Network: data on the institution level and units of HEI.





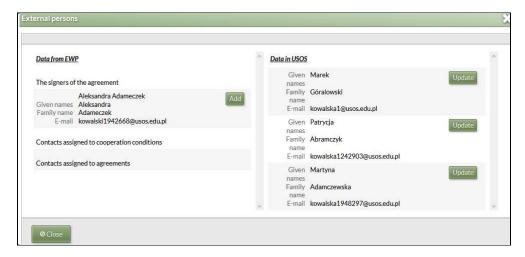


UW decides to copy only some of the departments – those involved in the mobility.



Note that some data, like address of the unit of the institution, is copied as **Notes**, since there is no separate field for it in the local system. It happens in various places – the designers decided to store the data locally as text notes, not in a structured form.

External persons are obtained from the partner from contexts related to international cooperation, i.e. from the *signers of the agreement, contacts assigned to cooperation conditions* and *contacts assigned to agreements*. So it makes sense to get these data from the partner while exchanging agreements.



Logo is sent as URL, but the local system expects the image. If we really want to store logo of the partner we may download it locally and then upload to the system.

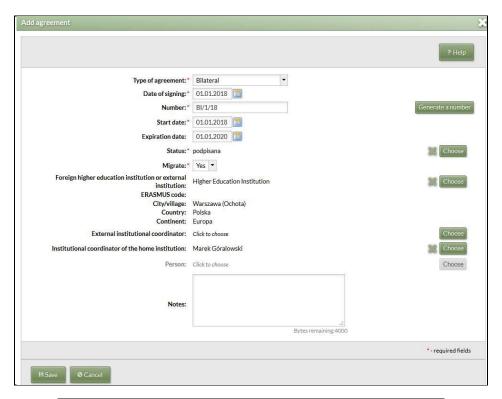


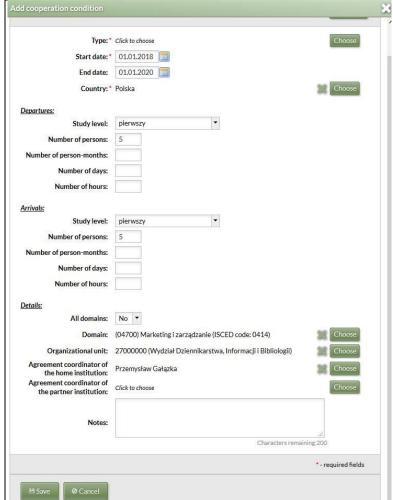
The operation of getting the data from the partner can be repeated any time. For example, the partner can send e-mail message to all mobility partners asking them to download the newly posted factsheet, for the new academic year. Data on the institution and organizational units level do not change often, so we have not designed system notifications for that range of data.

For testers – in USOS factsheets and organizational units are edited in **Dictionary** → **Organizational** units → **Organizational Units** form. The other data are handled in **International cooperation** → **Dictionaries** → **Institutions**.

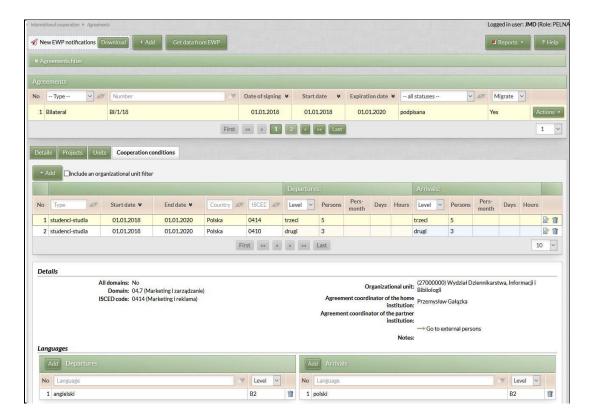
7.2. Agreements

UW enters the draft version of the agreement with HEI to the local system with local information only. The rest will be added by the partner and then synchronized between both systems. The agreement is signed under the ERASMUS+ programme.





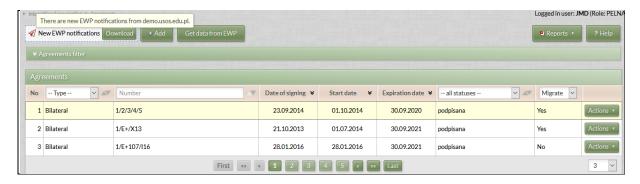
This is the new agreement with the cooperation conditions.



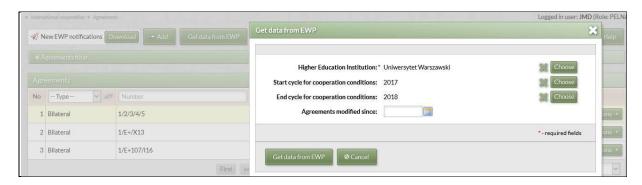
UW informs the partner by sending notification via EWP that the draft of the agreement is ready.

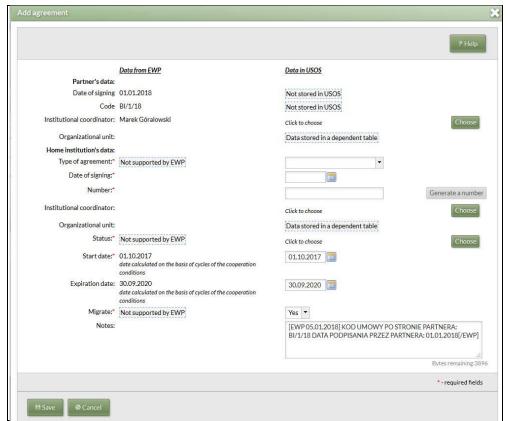


HEI obtains notification.



HEI gets the agreement electronically from UW via the EWP Network and stores the copy in the local system – can either use **Download** or **Get data from EWP**.



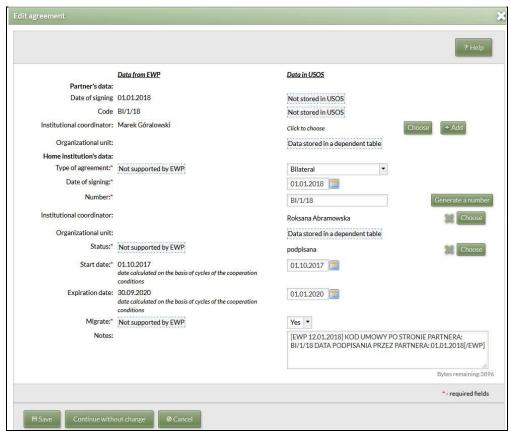


Read notification disappears from the web page.



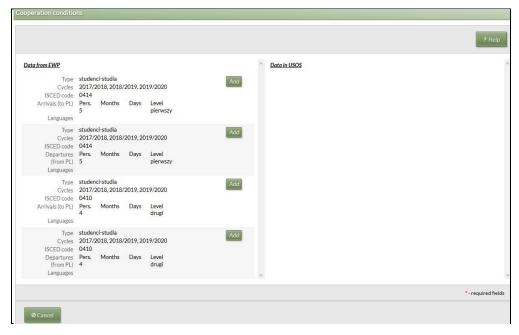
The agreement may be updated later on any time – both partners may keep the same (official) code of the agreement or use a different code. Agreements sent by EWP are internally identified by a global identifier (ID_EWP).

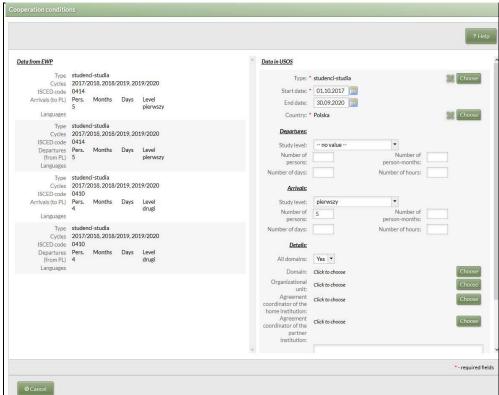




The external institutional coordinator may be added (**Add** button) to the system and linked to the agreement. If the coordinator is already stored in the local system, **Choose** button should be used.

Organizational unit in the **Partner's data** section, if given, refers to the unit within the partners HEI's organizational structure, which is the actual partner of this agreement. Agreements can be signed between units, not only between HEIs (UW does not have such agreements).





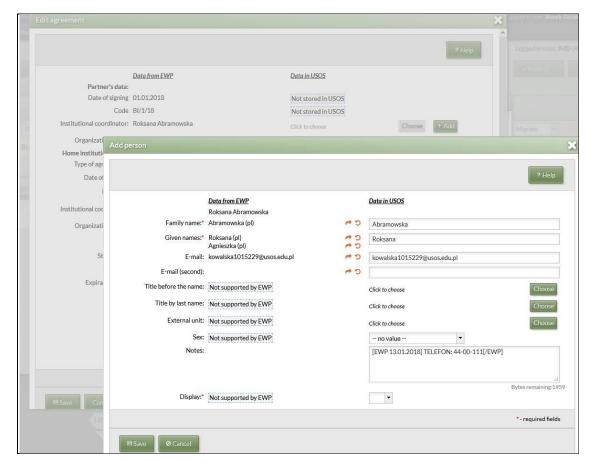
In HEI



In UW



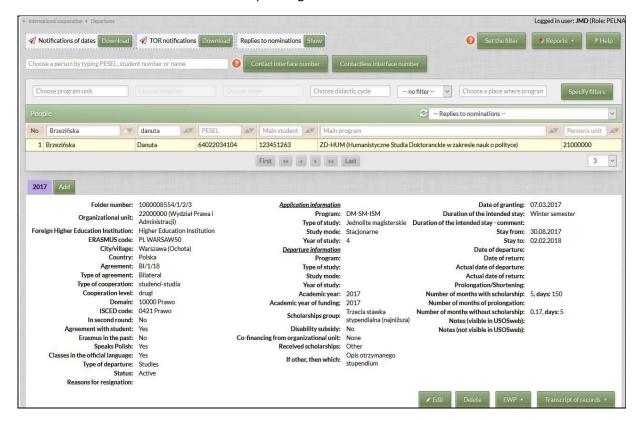
Now UW can get information about the coordinators from HEI and other changes. Both partners can synchronise their copies of the agreement before it is finally approved and printed to be signed.



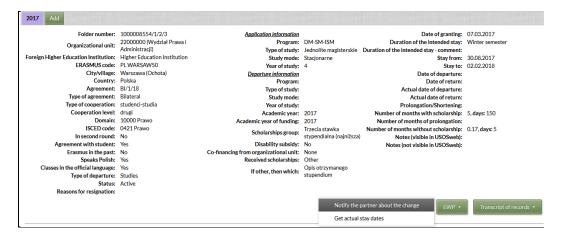
7.3. Nominations

Note: the nomination must be in a status 'Active' (this may change in the future, but for the moment IRO decided that way).

UW nominates one of the students for spending winter semester 2017 in HEI.



UW notifies the partner.

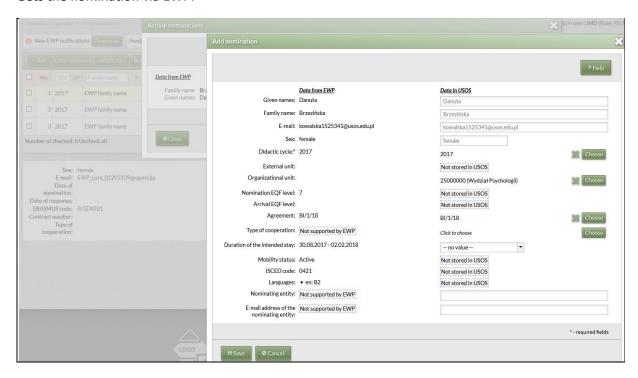


Nominations are displayed in **Arrival nominations** and **Arrivals**. When the nomination is obtained in one place, next time it is not be displayed in the second place.

HEI gets the notification.



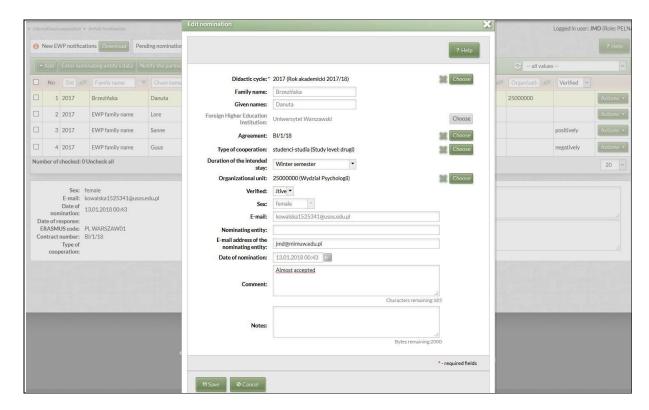
Gets the nomination via EWP.



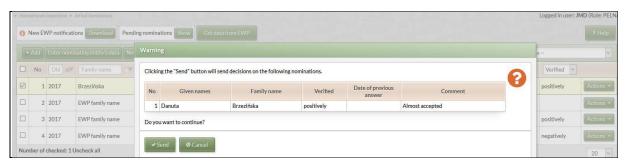
HEI edits the new nomination.

Note: changes in nominations can not be transferred to the partner. There is no API for that. The receiving institution can only notify the partner about:

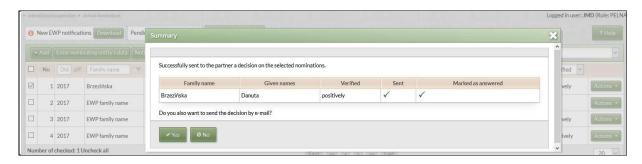
- change in status (accept/reject and comment) this one makes sense in Arrival nominations;
- change in arrival/departure dates this one makes sense in Arrivals.

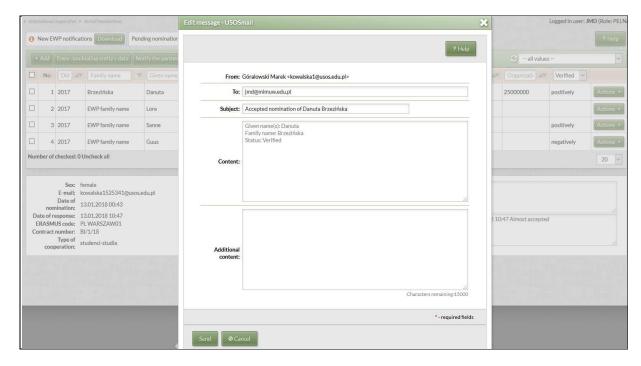


HEI notifies the partner about change in status of the nomination by EWP.



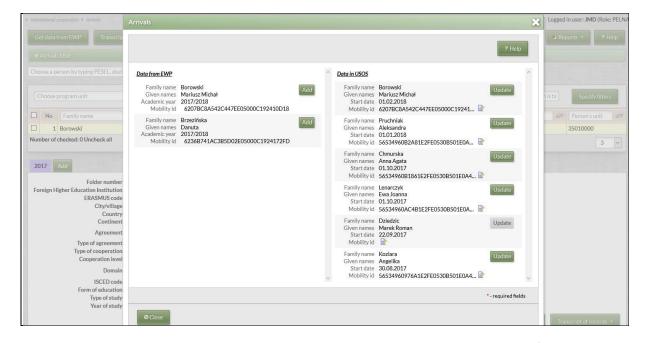
HEI also sends an email.



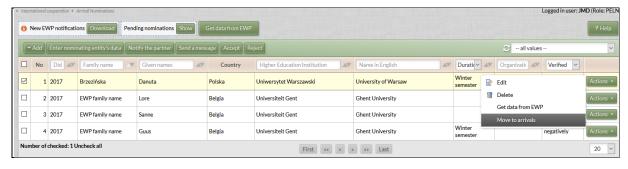


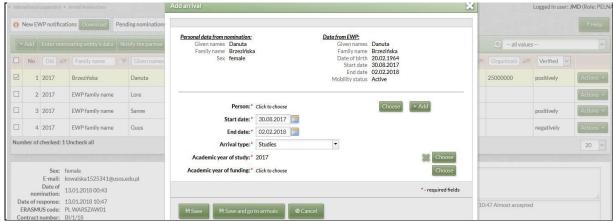
UW clicks Replies to nominations (which sets the filter *people with unread replies to nominations*).

New nominations may be accepted either as *arrival nominations* or as *arrivals*.



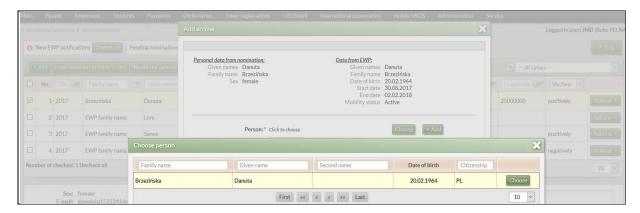
When accepting nomination as arrival nomination, we may later on move it to arrivals (this is like keeping nominations in the buffer area to have time for making decisions).



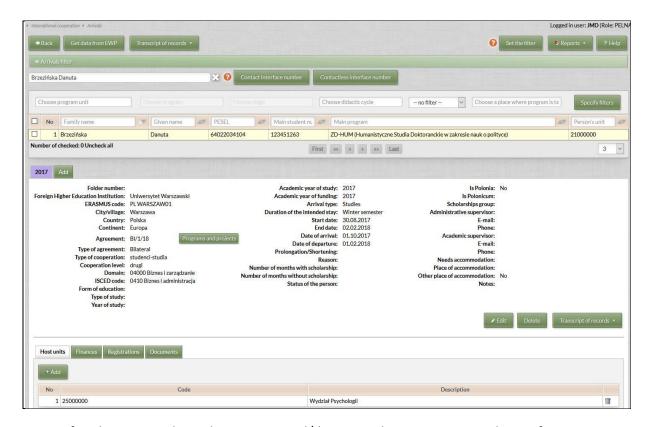


While moving the nomination to arrivals we do **Get data from EWP** again so in the upper part of the above window you can see on the left the personal data from the nomination and on the right the newest data from the partner.

Accepting the new student me may either add it to the local system (button **Add**) or choose the matching person already stored locally (button **Choose**). We want to avoid duplicates of the same person.



Choose a person, then click **Save and go to arrivals**. Now the missing data can be entered, e.g.. **Date of arrival** and **Date of departure**.



HEI notifies the partner about changes in arrival/departure dates. UW accepts the notification.

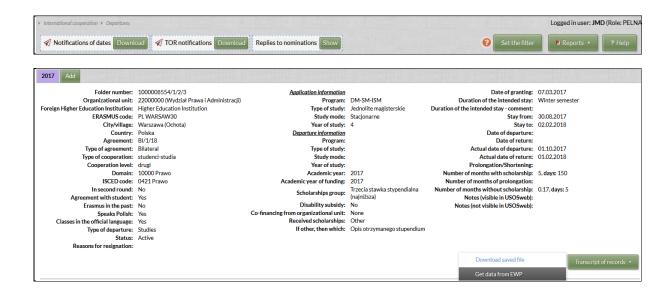


When the mobility ends, HEI generates Transript of Records. This can be done per student or for a group of students.



HEI notifies the partner about waiting ToRs.

UW obtains the notification.



7.4. Notifications in the user interface

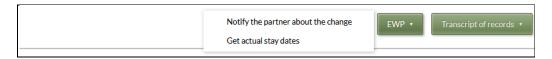
1a. Agreements – sending (IIA CNR)



1b. Agreements - receiving (IIA get, index)



2a. **Departures** – sending (nominations) (OMobility CNR)



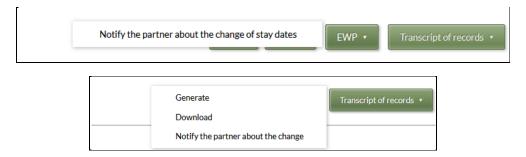
2b. Arrival Nominations – receiving (nominations) (Imobility get, index)



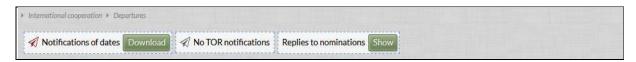
2c. Arrivals - receiving (nominations) (Imobility get, index)



3a. Arrivals – sending (dates od stay, ToRs) ((Imobility CNR, IMobility ToR CNR)

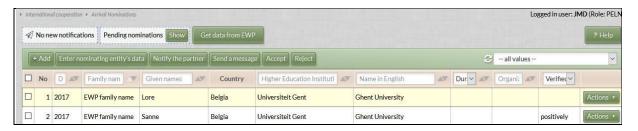


3b. Departures – receiving (Notifications of dates, ToR notifications) (OMobility get, index)

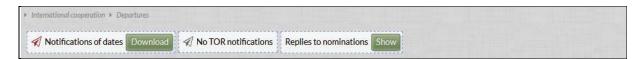


7.5. *Updates* in the user interface

4a. Arrival Nominations – sending (status of the nomination: accepted/rejected) (OMobility update-statuses)



4b. **Departures** – receiving (Replies to nominations – status of the nomination: accepted/rejected)



8. Mobility Tool+ APIs

There are APIs for importing data from the Mobility Tool+. It is assumed that these API are implemented by only one host managed by the Directoriate-General Education and Culture Unit (DG EAC) of the European Commission.

- MT+ Institutions API delivers general information on institutions known by the host.
- MT+ Projects API delivers list of projects for a particular institution and call year.
- MT+ Dictionaries API delivers terms from a particular MT+ dictionary and call year.

