

Erasmus without Paper assessment report

Written by the EWP+ Consortium

1. INTRODUCTION

One year ago, in November 2022, the EWP+ Consortium and the Directorate General for Education, Youth, Sport and Culture (DG EAC) published an [Erasmus Without Paper \(EWP\) assessment report](#). In the report they took stock of the EWP data exchanges. The report aimed to improve the collective understanding about the extent to which data exchanges via the EWP network between connected systems worked, and where issues remained.

One year later, this updated assessment report zooms in into the state of play of EWP data exchanges vis-a-vis the previous report. All data sources that inform this report indicate that the EWP data exchanges work better than one year ago and almost all technical issues preventing interoperability have been eradicated.

Remaining known technical issues blocking seamless data exchanges are connected to:

- Nodes in the network that do offer functionality for inter-institutional agreements that is not yet supported via EWP (e.g. modifying an inter-institutional agreement). This issue that will be solved with the [new version of inter-institutional agreements](#) in spring 2024.
- A group of universities using a version from Mobility Online for inter-institutional agreements which is not EWP compatible; most universities using Mobility Online have been migrated to an improved solution which works as expected. Efforts are underway for said issues to be addressed in the coming months, but at the time of writing of this report some institutions and their partners do not yet get the benefit of seamless EWP inter-institutional agreement exchanges as expected.

While the technical part of current EWP supported data exchanges has been stabilised, new challenges have come into focus on the business side of things:

- A first challenge is that staff members working with EWP do not always share the same understanding of the processes and exact data that are exchanged. To increase this common understanding, the European Commission has published [comprehensive user guides](#) for learning agreements and inter-institutional agreements following a consultation involving around 500 higher education institutions. The guides include clarifications on certain fields, recommendations on dealing with certain exceptional scenarios and a non-technical description of the data fields exchanged via the EWP Network.
- A second challenge is mostly related to the exchanges of inter-institutional agreements. Here, the improved EWP data exchanges have highlighted process inefficiencies that need to be addressed at the level of how the flow for inter-institutional agreements is designed; this would lead to a reduction of the number of agreements and emails exchanged prior to the successful completion of an inter-institutional agreement. The EWP+ Consortium has already shared an analysis with the European Commission on possible ways forward to improve this process in the next Erasmus Programme period.

The finding above is underpinned by the data sources that informed this report. Those data sources are mostly the same from the previous report, encompassing data from the [EWP stats portal](#), and feedback received via the [ESCI service desk](#), the [EWP governance forums](#) and through the work of the EWP relationship managers. If you are interested in more details about the data

sources, you can consult the [November 2022 Assessment report](#)).

The second section of this report explains the state of play of EWP interoperability based on quantitative and qualitative findings. The third section presents lessons learned and the way forward. The final section will conclude with the findings of the EWP assessment report.

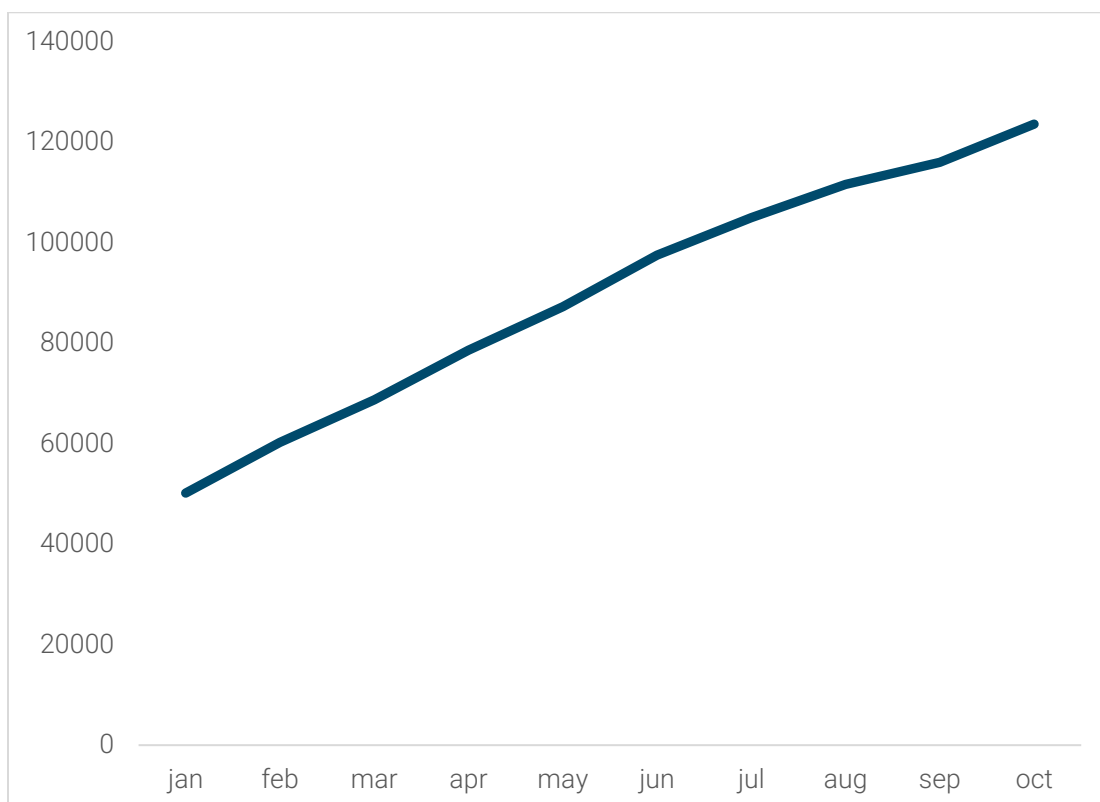
2. State of play of EWP interoperability

2.1 Quantitative findings

Based on the **statistics** available at the beginning of October 2023, there were 337 650 inter-institutional agreements already shared via the EWP Network. There was a significant increase of agreements shared compared to one year ago when 106 000 agreements circulated via the network. The total number of digitally concluded inter-institutional agreements approved by both partners has gone up from 20 000 agreements in October 2022 to 125 412 in October 2023.

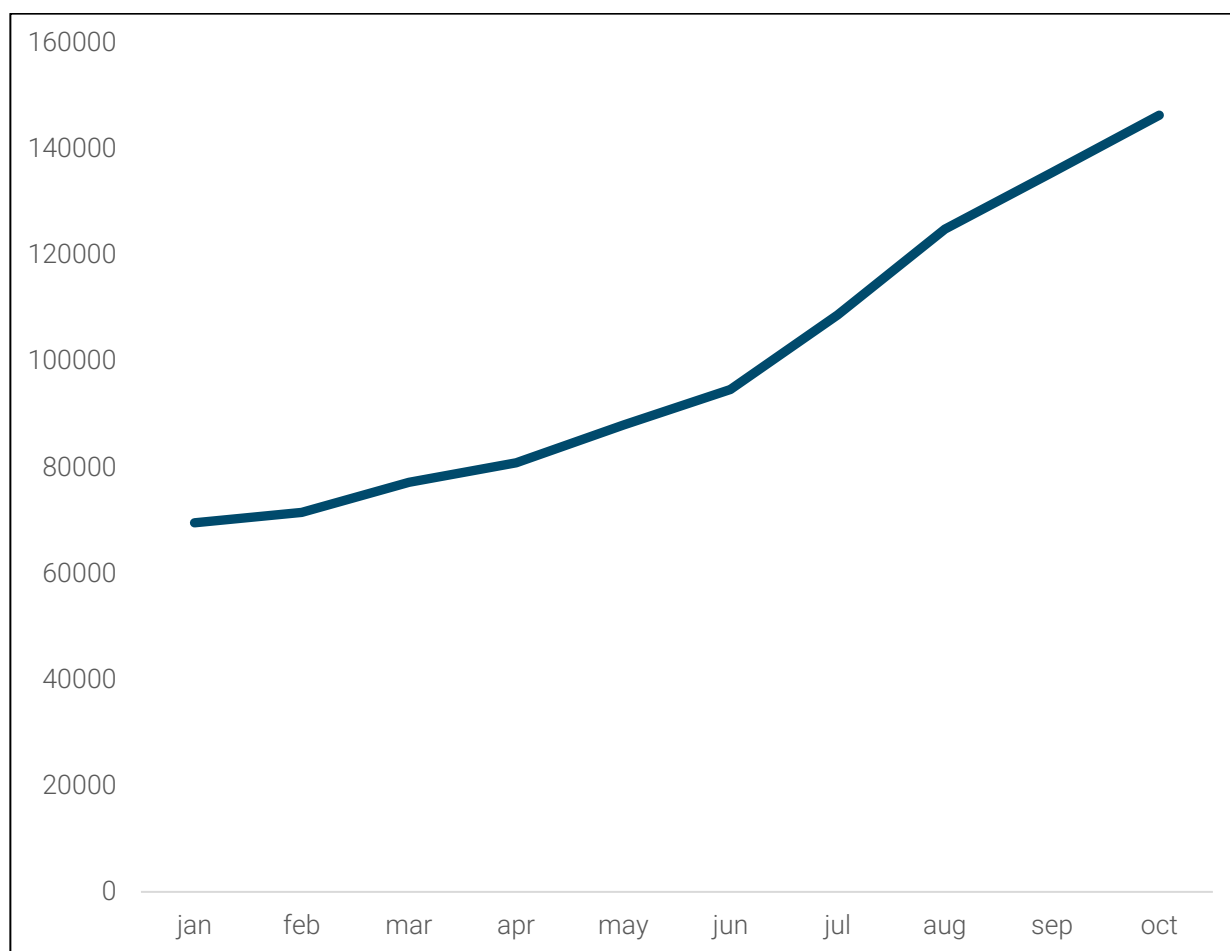
The inter-institutional agreements approved via the EWP network in Figure 1 (125 412 approved agreements in October 2023), demonstrate a clear upward trend. When looking at the total number of institutions exchanging agreements (2 598 institutions) this count for an average of about 50 approved agreements per institution. Although it is difficult to assess the total number of inter-institutional agreements to be potentially exchanged, an average of 50 agreements per institution seems rather low. This illustrates that EWP is moving in the right direction; however, there is still a considerable distance to cover before all inter-institutional agreements are digitally exchanged.

Figure 1: number of approved inter-institutions agreements throughout 2023



At the same time, 370 062 learning agreements have been shared over the network, about 76 000 for the academic year 2021/22, over 168 000 for the academic year 2022/23 and so far, almost 125 000 in the academic year 2023/24. There was also a high increase in learning agreements with the latest version approved. In October 2023 this was the case for 20 471 learning agreements in 2021-2022, 72 731 learning agreements in 2022-2023 and 57 523 in 2023-2024 (for the current academic year one can expect more learning agreements to be approved for the spring semester). The numbers above demonstrate the usage and completion of digital learning agreements is increasing rapidly. And although the numbers are clearly increasing, there is still a long way to go before the approximately 220 000 students can benefit from a fully digitally approved learning agreement. There is more granularity in these statistics, which can be openly consulted via the [EWP Stats Portal](#).

Figure 2: number of learning agreements with latest version approved throughout 2023 (all academic years combined)



The quantitative findings help us to understand what is going on in the EWP network in terms of data exchanges. The connection status of the 2 795 target higher education institutions (HEIs) holding an Erasmus Charter for Higher Education (ECHE) can be observed in the EWP stats portal. This includes which [APIs](#) the HEI has activated in its system and whether they are up to date. This

means that data reported by software providers to the portal show the number of HEIs connected for digital inter-institutional agreements and learning agreements and indicates to which extent HEIs are already using them. On the basis of this data, it is possible to estimate the overall volume and success rate of exchanges in EWP. It's noteworthy that in October 2023 **99% of the target HEIs are connected to EWP for inter-institutional agreements. Over 93% have taken steps to exchange electronic learning agreements.**

However, the statistics also reveal that being connected does not necessarily mean the institution has actually started exchanging data. For inter-institutional agreements, 93% of HEIs connected, exchanged at least one inter-institutional agreement, indicating that **7% of connected HEIs are not yet exchanging any data (or the HEI is not sharing its statistics).** The number of connected HEIs seemingly not exchanging any learning agreements is even higher, with about 20% of connected institutions not exchanging learning agreement data.

The EWP relationship managers will get in contact with some of these institutions to investigate the reasons why they are connected to EWP but not using this. This situation poses a challenge for partners who are exchanging data in a digital manner; when sharing an inter-institutional agreement or a learning agreement, there won't be a reply from the partner so this process cannot be completed. This leads to significant extra efforts to track the status of pending actions.

For learning agreements this is even more problematic as they involve students, which can heavily increase the number of data exchanges and the number of support requests for the sending coordinator. It may not be clear to the student a) why a learning agreement cannot be completed b) the student is requested to submit a copy of their learning agreement or, even worse, c) a new learning agreement outside EWP (despite having already started the process in EWP).

All the statistics are publicly available on the [EWP Stats Portal](#) and can be consulted per software/system provider (connected in-house systems, third-party providers and EWP Dashboard), per country and at the level of an individual HEI. The portal also displays trends and allows users to observe changes over time in the volume of EWP exchanges. Providers are invited to share such data but the accuracy of such statistical indicators is the sole responsibility of the parties providing such information.

2.2 Qualitative findings

The state of play of EWP in general and inter-institutional agreement data exchanges in particular is a recurrent topic at the meetings of the [Business Process Owners Standing Expert Group \(BPO-SEG\)](#), the EWP governance body consisting of representatives of International Relations Offices (IRO). After taking stock of the situation in the meetings of January and April 2023, the topic was again discussed on the 12th of September 2023. In general, the BPO-SEG members reported that exchanges of inter-institutional agreements work much better than one year ago and that most technical interoperability issues seem to be solved. However, fixing the technical issues has highlighted underlying process inefficiencies. Finalising the content of the agreements remains a challenge and requires a lot of email exchanges. It was also reported that agreements that were shared in the past require more effort to get approved by both parties than newly created inter-institutional agreements.

The learning agreement exchanges work quite well in general, according to the members of the BPO-SEG. However, getting the approval of the learning agreement from the receiving institution is sometimes challenging due to a lack of response by the partner. Another challenge reported by the BPO-SEG when it comes to learning agreement exchanges, is that some partners are

connected to the EWP network for this functionality but are not yet actually using the system and hence still rely on paper (or digital documents). This complicates matters for institutions who are using EWP for learning agreement exchanges when it comes to correctly informing their students and also places additional burdens on students, as noted above.

Other important feedback loops used for the continued monitoring of potential issues are the [ESCI Service Desk](#) and the Relationship Managers, whose findings are consistent with the evolution reported through the EWP governance structure.

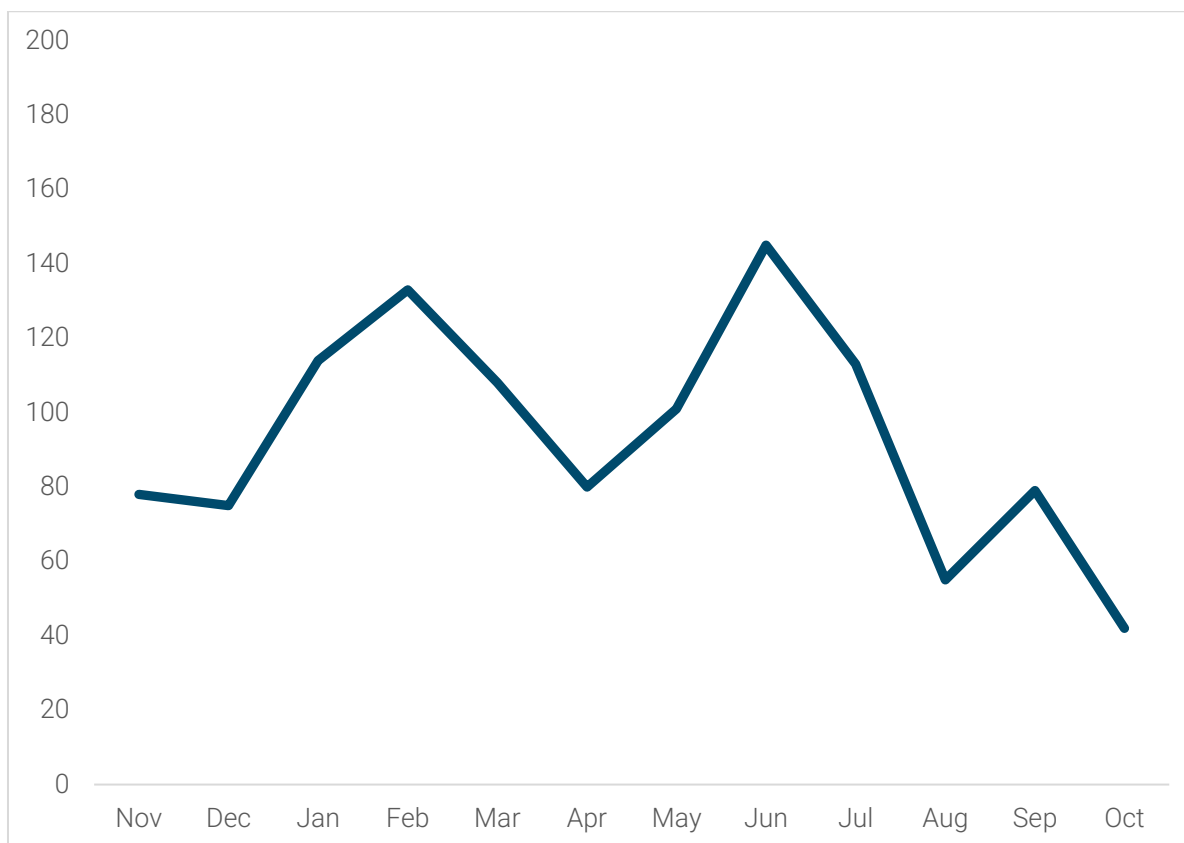
When looking at the tickets reported for non-student technical issues at the **ESCI Service Desk**, there is a decreasing trend over the past twelve months (users can e.g. report technical issues about inter-institutional agreements, learning agreements, the Erasmus+ app, the EWP network...).

Figure 3: reporting on technical issues in the non-students category



Another category that users can pick when contacting the ESCI Service Desk is the reporting of interoperability issues. This category is open to all EWP users, regardless of how they are connected to EWP. Whenever a technical issue arises and it is not clear where the source of this issue lies, users can get in touch with the ESCI Service Desk. Service Desk agents contact the technical providers involved to help solve the problem. The trend in figure 4 is more irregular than for the other graph in figure 3 but here again there is a slight downward trend of interoperability issues over the past twelve months.

Figure 4: reporting on interoperability issues



The data from the ESCI Service Desk about issues reported by EWP-users over the past twelve months, show an overall decreasing trend while at the same time figure 1 and figure 2 indicate an increased usage of EWP-exchanges.

Relationship Managers meet regularly with developers and end users. In those meetings they have observed that most colleagues report that technical interoperability issues have been resolved and that the [interoperability action plan](#) has improved communication, cooperation and support to overcome technical problems. However, some end users still experience technical problems when exchanging data with their partners using other systems. The most common difficulty brought up when exchanging inter-institutional agreements is connected to a legacy issue where cooperation conditions and the direction of mobility flows have been concluded in many separate agreements. Furthermore, most end users that have started exchanging agreements in EWP highlight that partners not being ready to exchange (not connected or connected but not exchanging data) is a key challenge to be addressed (as noted earlier in the report). This needs to be addressed to achieve an EWP network where all target HEIs can seamlessly exchange inter-institutional and learning agreements. In addition, end users consistently flag that processes for exchanging inter-institutional agreement data need to be improved and further harmonised between systems to avoid added workload, confusion and bottlenecks in managing agreements. All of the above issues are being worked on by the EWP+ consortium and DG EAC in cooperation with third-party providers and developers of in-house systems.

Technical testing and validation is a key requirement for joining the EWP Network. Any party

connected to EWP (via in-house or third-party software) needs to make sure its implementation is working according to the technical specification. Currently, this is verified by completing technical testing with the EWP Dashboard team (which is the reference implementation). With the adoption of the interoperability reinforcement plan, steps have been taken to enforce stricter quality assurance in the EWP network. This implies stricter monitoring so that no APIs are made available in the production network prior to the completion of successful technical testing and validation. The number of partners that successfully completed this [technical testing and validation](#) step, increased rapidly over the last 12 months. Since the publication of the previous assessment report 19 providers and or nodes have successfully (re)tested their implementation for inter-institutional agreements and 11 partners have passed (re)testing on the learning agreements. In total there are now 30 nodes that have successfully tested for inter-institutional agreements and 19 who passed the learning agreement testing.

Even when nodes have passed the technical testing and validation, errors can still occur in their implementation. Therefore, all nodes in the network are requested to automatically share the errors they experience when exchanging with partners. This is done via the **central error logging** API. Development teams receive reports from the monitoring system once a week to be able to address any new or outstanding issues, and the central error logging is also monitored by the EWP+ Consortium. Wherever a structural issue with one of the nodes in the network is identified via central error logging, this is taken up with the responsible partner. An analysis of the errors indicates that the structural issues preventing interoperability reported in the previous assessment report have mostly been addressed.

3.LESSONS LEARNT AND THE WAY FORWARD

The implementation of inter-institutional agreements was very difficult, as most IROs know. While most of the technical issues have been solved, the findings on the state of play about EWP interoperability discussed in section 2 have brought into focus certain process inefficiencies, especially when it comes to the digital inter-institutional agreement process. Compared to the learning agreement process, the EWP inter-institutional agreement exchanges follow a less strict sequence of steps to become a mutually approved agreement in EWP. Both parties can initiate the process and make modifications throughout the process. This has been a major source of problems and frustration for colleagues managing inter-institutional agreements. For the learning agreement there is a clear process with the sending HEI that initiates the learning agreement via EWP and the receiving HEI that can only approve or reject with comments. This appears to have avoided most of the issues faced with inter-institutional agreements and colleagues managing learning agreements report that the exchanges in general work well when both partners are connected and exchanging the learning agreements via EWP.

A comparison between the main characteristics of the EWP inter-institutional agreement and learning agreements process, provides important lessons for the future. From a technical viewpoint both inter-institutional agreements and learning agreements have a lot in common – that's because all EWP specifications to date follow a similar technical framework which prescribes strict semantic and implementation rules. Where they actually differ is how the digital transition of each process has been planned and executed. In the past, learning agreements could be initiated both by the sending or the receiving institution. A new digital business process was developed over the course of several years and via an in-depth dialogue among IRO practitioners. This work was largely facilitated through the OLA project and the close cooperation with the European Commission.

When compared with the learning agreements, it's clear that the digital transition of the inter-institutional agreement process followed a different pathway. Although testing of digital inter-institutional agreements has also occurred, such activities were much smaller in scale (around 400 digital inter-institutional agreements vs more than 100 000 digital learning agreements were in existence prior to the start of the new programme in 2021) and the involvement of IRO practitioners was insignificant when compared with that observed in the OLA. This resulted in the existing inter-institutional agreement paper processes being copied into digital flows without a meaningful process transformation taking place. In turn, this meant that pre-existing process inefficiencies were magnified when transported to a digital setting. Some such issues were mitigated through the publication of the inter-institutional agreement mandatory business requirements, which were created as part of the interoperability reinforcement plan in autumn 2022. This happened at a point when digitising all inter-institutional agreements for the 2021-2027 programming period was already well underway. Moreover, there were targets in place to have most HEIs ready to exchange agreements at the start of 2023 once technical interoperability issues would be resolved. Therefore, introducing radical process changes as part of the mandatory business requirements in 2022 would have raised the risk of destabilising both systems and the programme management cycle.

3.1 Structural involvement of practitioners in digitising processes

The involvement of IROs, Digital Officers and other practitioners in the further digitalisation of the Erasmus+ processes is a crucial step for making EWP and the digital transformation of the programme a success. On the one hand the practitioners are involved in the EWP governance via the [Business Process Owner Forum](#). On the other hand, [the EWP Champions](#) will help test new features and digital workflows and contribute to optimising Erasmus+ student mobility workflows.

For the next processes that come into focus, nominations and Transcript of Records, the involvement of practitioners is already guaranteed. In October 2023, a large consultation took place via the [user groups](#) to collect views from experienced users on the nomination and Transcript of Records. The goal of those consultations was to gain a comprehensive understanding of how institutions manage said processes in the Erasmus+ programme. The insights and feedback are taken into account for the development of mandatory business requirements prepared together with members of the [Standing Expert Group](#) of colleagues from international relations offices. Also, the EWP Champions will be involved in the finalisation of the mandatory business requirements to make sure the documents reflect the reality of practitioners.

The same approach should apply to the adoption of all future Erasmus+ processes to be digitised.

3.2 How new digital processes are validated

Building upon the experience from the learning agreement and inter-institutional agreements implementation, a more robust implementation procedure aims to optimise the process of smoothly deploying new digital processes in EWP and Erasmus+ as a whole.

This entails that:

- IRO stakeholders, Digital Officers and other practitioners must be involved in the digitalisation of new functionalities and processes
- Clear planning of large-scale adoption
- Robust testing must take place prior to mass adoption
- Institutions receive sufficient support to navigate these processes.

The new implementation procedure accommodates the move to a more rule-based EWP environment. All future functionalities will follow a predetermined series of steps in order to minimise the risk of interoperability issues affecting end users.

Central to this approach is an expansion of the testing protocols and a robust testing procedure. Testing is vital to establish interoperability before the large-scale adoption of new processes. Testing needs to be first carried out by the engineering teams overseeing the functioning of EWP nodes since end users should not be put in a position where they are expected to help detect anything but relatively small bugs.

Below is the overview of the different phases that new functionalities will have to complete before they are ready for large scale adoption:

- **Establishing Mandatory Business requirements:** for each of the processes included in the EWP network, the [IROs involved in the EWP Governance](#) define the minimal business requirements. These are a description of the requirements for all technical solutions

developed under the umbrella of EWP. This also applies to the local implementation of systems. The consortium guides the process in close collaboration with DG EAC, which approves the final version of this document. In an ideal-case scenario the mandatory business requirements are established before defining the technical specification. In practice the specifications for many processes are already in place so they might lead to an update of the technical specification.

- **Defining the technical specification:** a key step to enable the support of new EWP functionality is the definition of the technical specifications that all developers are expected to follow. These [specifications](#) are open source, geared for a technical audience.
- **Release plan:** in some cases, a release plan for a new functionality or a key update will be put in place; this is particularly relevant when major API updates are introduced and where there is added value in trying to maintain a level playing field among as many network nodes as possible. The release plan is informed by discussions in the [EWP Infrastructure Forum](#), which is the monthly meeting point for the technical community.
- **Technical workshops:** with the Interoperability Reinforcement Plan the notion of technical workshops was to allow development teams to meet, compare their implementations, discuss challenges and share experiences. This has proven a useful way, in conjunction with other actions, to support developers working on EWP implementation. While participation in such workshops is not mandatory, it is strongly encouraged, and the consortium and DG EAC plan to continue to make such opportunities available to the technical community in the foreseeable future.
- **Official testing phase:** prior to going into production for a stable release, a validation step is mandatory, where the engineering teams supporting the concerned systems will simulate the correctness of their implementations against the EWP reference implementation, based on a publicly available testing protocol designed to yield comparable and significant results. Because such results determine if systems are able to function without interoperability issues, nodes that fail this step will not be allowed in the EWP production network for the API implementation under consideration.
- **Stable-release phase:** if systems successfully complete official testing, they can be used at scale. Information about the test results is made [publicly available](#). This page constitutes the single source of truth regarding technical readiness of all systems connected to the network. At this point, statistics and error monitoring measures are also applicable to such processes. A surge in errors could indicate that a node which was stable is no longer so, leading to the requirement to undergo another testing and validation round.

When functionalities are already available but have not yet undergone the steps described above, this is called an “**early-release phase**”. This effectively amounts to an early trial, which is useful for both the development teams and their users. At this stage, we do not encourage large-scale usage, but rather focus on gathering first-hand experiences by end users.

This implementation procedure was not established overnight. It builds on the lessons learned from 2021/2022, the feedback from the community, and the findings from the [Interoperability Reinforcement Plan](#).

3.3 Current status of EWP processes

- **Inter-institutional agreements:** this is an EWP stable release, whereby all the steps and requirements outlined above apply to regulate nodes in the production network.
- **Learning agreements:** this is an EWP stable release, whereby all the steps and requirements outlined above apply to regulate nodes in the production network.
- **Nominations:** this is an EWP early release. While specifications allow for its implementation as of summer 2023, the work on the mandatory business requirements and on the testing protocols is still underway at the time of writing of this report. The timeline/release plan for transition to a stable release will be informed by the feedback collected during the present early-release phase and decided by the EC steering committee.
- **Transcripts of records:** this is an EWP early release. While specifications allow for its implementation as of summer 2023 the work on the mandatory business requirements and on the testing protocols is underway. The timeline/release plan for transition to a stable release will be informed by the feedback collected during the present early-release phase and decided by the EC steering committee.

There is a pending update of the inter-institutional agreements API (the technical specification that allows for EWP data exchanges) which is expected to be launched in April 2024. In this update some additional functionalities will be offered via EWP exchanges:

- Users will be able to modify and terminate agreements with their partners in a standardised way through the EWP Network.
- There is also a common approach that will enable users to delete draft agreements (agreements never approved by both partners) from the EWP Network.

It also includes some further clarification on the usage of 4-digit ISCED codes and more flexibility for certain date entries.

The roll-out of this update in all systems connected to the EWP network will be closely monitored and extensive testing will be carried out before the updated API is made available for the users. In the meantime there is no need to postpone the approval of agreements as all existing inter-institutional agreements remain valid after the update.

Technical colleagues are invited to refer to the [EWP Developers guide](#) to engage with the EWP specifications in full.

4. Conclusion

The report provides an assessment of the current state of play of EWP data exchanges. A very high percentage of institutions are already exchanging data via EWP and the number of completed inter-institutional agreements and learning agreements is growing steadily. It is noteworthy to mention that these figures show the tremendous efforts of HEIs to make EWP work. However, in spite of the positive indicators, the point where all inter-institutional agreements and learning agreements are concluded in a digital manner has not yet been reached.

And while the qualitative findings indicate that almost all interoperability issues are addressed, practitioners managing inter-institutional agreements still face a challenge when it comes to the process itself to conclude an inter-institutional agreement. This process does not have a straightforward flow and needs to be underpinned by a lot of email exchanges. The learning agreement process is unfolding much more smoothly, and the main obstacle for large-scale usage is the number of HEIs which are able to exchange digital learning agreements via EWP but do not yet do so - around 20% of HEIs that are connected.

Therefore, the main area for improvement of the EWP-data exchanges is the actual usage and follow-up on a daily basis. It is the current strategic priority for the relationship managers to set up meetings with institutions connected to the network but not using EWP to better understand the reasons for this. More suitable processes for digital inter-institutional agreements should also be put in place. To prevent disruptions at this stage, the inter-institutional agreements flow and logic will only be revised in time for the next Erasmus+ programme.

Now that most technical interoperability issues are solved and the collective understanding of the EWP-processes is being improved via the [comprehensive user guides](#), there is little that prevents HEIs that are connected to the network to actually use it in their daily operations. One should acknowledge this does not happen overnight as it includes planning, resources, process revision and training of staff involved. However, not switching to EWP does pose a challenge to partners that are already using it.

The structural involvement of practitioners in the EWP-ecosystem via the user groups, the EWP Champions and Digital Officers, ought to guarantee that the initiative and the (new) digital processes are tailored to the needs of the community it serves. In doing so, EWP can move away from the issues faced with the inter-institutional agreements, and gain some more positive momentum with better working processes and a well-functioning digital nominations process, leading to the efficiency gains many colleagues are looking forward to.