

DIGITARY

PESC EdExchange - a pilot's journey

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Mobility for growth

Access to opportunity has always been linked to people's capacity to be mobile. Human evolution has depended on learning and mobility. Mobility and freedom go hand in hand, unfettered by boundaries, constraints and limitations - physical or mental. For us to continue our own personal evolution through movement across geographic borders or even industry sectors, we continue to seek further education and higher learning. In doing so, we acknowledge that we may no longer have a single career in our lifetime but many and that we value and pursue lifelong learning as much to fulfil that reality as to reach our full self.

A global exchange

To support this mass people movement across national and international boundaries, institutions have typically entered into contracts with each other or through compatible vendor tools and services. The result has been good commonality of data and interoperability between grouped or paired institutions, but still a great divide across local sectors and certainly more so globally.

The PESC standards and their associated initiatives remain central to solving the right problem here and help focus our efforts back on the learners we support. EdExchange as the vehicle, provides a reliable and consistent approach where partners seek each other out and then trade information as a part of a standardised and consistent exchange. The global potential for easily sharing information across the EdExchange network should not only simplify and accelerate the path for learners but also for institutions and service providers alike.

Standards and protocols

Standards like PESC help us manage risk in complex and sometimes chaotic environments. They facilitate a shared understanding of a common problem and bring interested parties together to help and coordinate a solution. Standards help us define consistent protocols that are easily understood and help others assimilate the same information quickly and easily.

While standards continue to offer the best chance at sharing information in an agreed language, they all too often fail. The up-front cost can be high for those adopting, with a delayed return realised sometimes well into the future as partners slowly join the collective. Also, by their very nature, standards are political - we all have different views of our respective world and biases towards what we are more familiar with and especially what we have spent years investing in and building on our own.

Through PESC, the EdExchange group meets to push these standards forward and to learn from our shared experiences as various organisations test the waters as pilots. Language here becomes critical where we must begin to talk in real terms about delivery and production, where a series of proofs materialise and begin to fulfil that original vision. Organisations engaging in pilots should do so with the aim to release their experience back to the community so that the system may reach that critical mass where this enormous benefit is realised.

What were our goals?

From the outset we intended to complete an end-to-end interaction that reached deeply into our respective systems, where learner information was securely kept and released in accordance with strict controls.

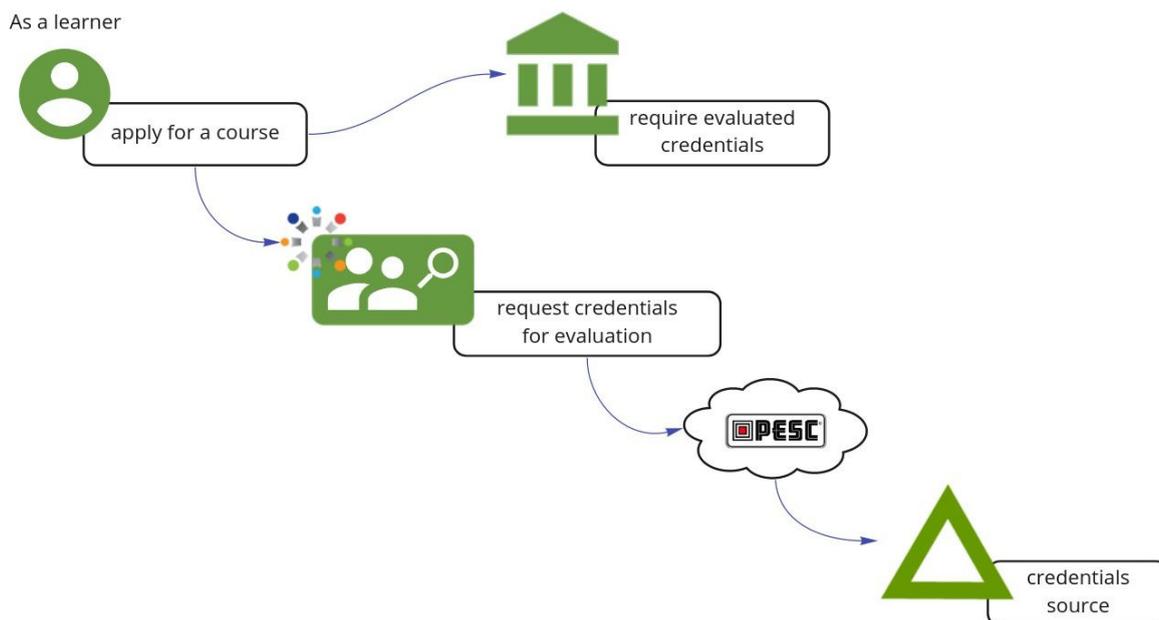
Defining clear goals forced us to reevaluate our purpose and solidify the core use cases we aimed to support. Goals helped clarify the WHY to our more engineering and operational HOW and WHAT. Through regular conversations between our pilot partner Educational Credential Evaluators (ECE) and ourselves as well as the other EdExchange group participants, we worked through problems together, considered each other's specific needs and adapted to this shifting space to arrive at our simple and clear goals:

1. Send a successful transcript request for a consenting learner whose credentials are held by the requestee.
2. Send a suitable response back to the requestor where the learner does not exist within the requestee's system.
3. Send a suitable response back to the requestor where the learner does not provide consent for access to their credentials

As a learner...

To frame our conversation back to relevant use cases, we removed any specific technology or framework from the discussion and started with understanding the learner's journey. While we can relate more than a single journey to the problem, the case where a learner wishes to pursue further study was identified as a core or critical path. This particular use case contains sufficient generalisation to allow easy application to other scenarios including evaluation and general sharing of credentials. While simple, it introduces a number of external interactions that usually begin and end well beyond the central exchange.

The interaction begins as the learner applies for entry to an institution. The application process requests that the learner provide relevant certified or certifiable information on their previous work - their transcripts and awards from other institutions.

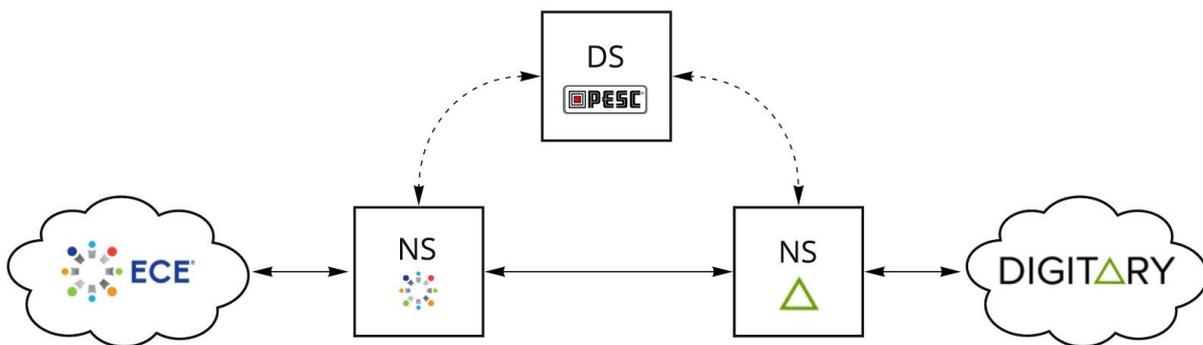


The focus remains to help the learner complete their application with as little friction as possible. The institution, either as a participant in EdExchange or through the use of a service provider, would use the information supplied by the learner about themselves to issue a request across the network. The network responds with the location of a suitable node to fulfill the request. Interactions would continue from here between respective nodes using the agreed PESC standard

or even other document types including text and PDF depending on what each node is requesting and what the other supports.

The critical interaction

The critical interaction here is the request to the EdExchange Directory Server. Hosted by PESC, the Directory Server maintains a list of supporting Network Servers across the EdExchange system and includes information on each node including the schools or institutions they might represent. An early cost of entry into the exchange is this addition of a Network Server that becomes an organisation's interface between its own internal systems and other participants.



Every request made by a network server to another is recorded and acknowledged serving as confirmation between nodes that communication was made. Depending on the type of request, acknowledgments inform the other party of the state of a request - for example, communicating that a requested learner has multiple matches or that they do not exist within the requestee's system.

As the PESC standard continues to evolve, recent work with PESC Global Education Organisation (GEO) Code begins to realise EdExchange's global potential. GEO Code support within EdExchange was identified as a key benefit for ECE and Digitary and seen as a very natural fit given our respective international operations and reach.

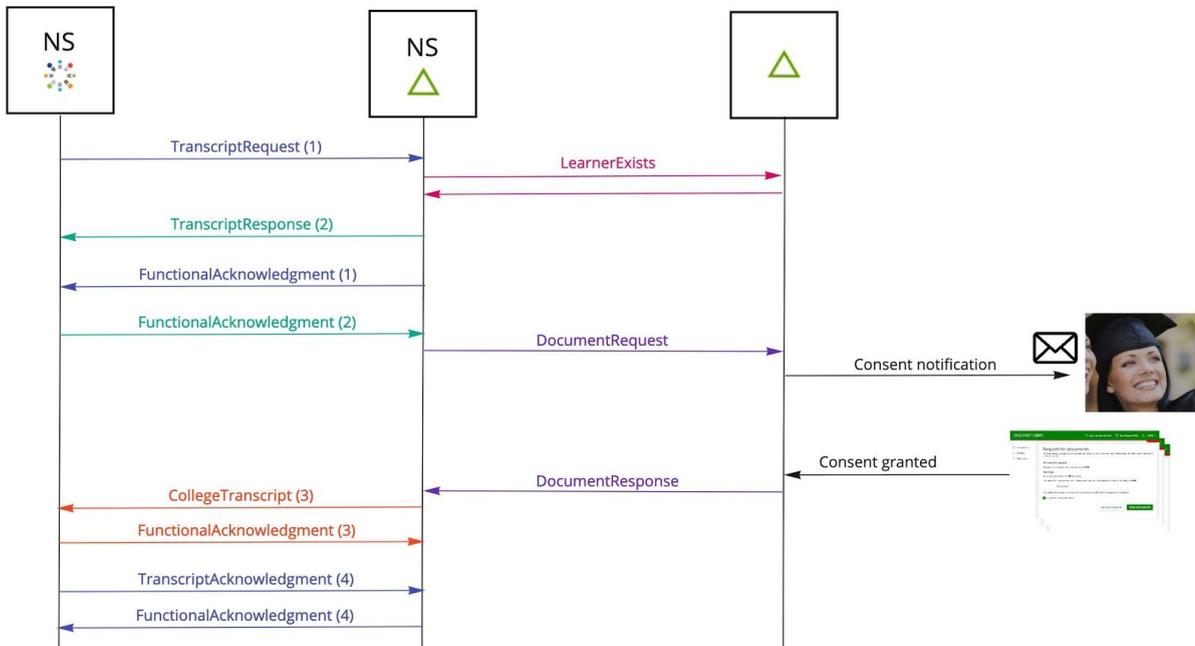
Learner Consent - unlocking the information

The right to privacy remains the guiding principle when accessing and conveying learner information to the requesting system. As the data subject, the learner should remain in full control of the process - even though it is highly likely they initiated the conversation as described in our core use case earlier. While EdExchange does not specifically cater for or enforce learner consent, work in this area necessitated a change to the specification to support it. A specific enumerated return value now informs the requesting party that the learner has denied access to their documents and the conversation effectively ends there. Where the learner grants consent, the workflow continues normally.

Specific delivery of this model is left to respective participating implementations. Organisations could, for example, enforce a model as described here or something similar to comply with any legislated frameworks they would need to adhere to. In any case, learners would need to be notified and clearly informed about who is making the request for their documents and perhaps even which specific documents the learner would like to make available.

Sequence of events

Like an Olympic sprint relay, requests move between Network Servers following Directory Server discovery as associated responses and a complex series of asynchronous executions begin. While every request received is recorded and acknowledged, participating Network Servers reach into their respective domains in search of learner information. Consent triggers are fired ensuring the learner as the data subject is tightly coupled to the process and they agree to release their documents to the requesting party.



While EdExchange supports a number of response types that could short-circuit the sequence, the two critical decision points are whether the learner exists within the requestee’s system and that they provide the necessary consent to release their documents. If either condition is not met, the requestor is informed using the appropriate message and the conversation ends.

Of note is the fact that the process effectively idles as the consent model kicks in and the conversation waits for the learner to respond. There is no specific wait time applied to the sequence at this stage and the workflow could, at least theoretically, take a very long time to resume. Respective nodes could enforce their own wait or timeout limit and inform the corresponding system accordingly - again, the specification allows implementing systems to manage this on their own terms.

Iterations

Access to the reference implementations for both the Directory and Network servers allowed for a quick assimilation of the technical solution. As a side effect, this also represents a firm acknowledgment for partners who came before us and helped progress both the data standard and the exchange platform.

To infinity and beyond

So how do we measure success? This was a great question that would often bubble up as we improved our understanding and evolved our solution. We want to bridge those discreet islands - the group or pair silos with agreed exchange contracts. We want to achieve this through a standards process championed by PESC and its contributing members.

While it would have been easy for us with our pilot partner to agree to specific terms between us to address issues like privacy and consent, it was always considered more valuable to return to the group and propose a change. The group would then engage and either support our request as presented or alert us to a different part of the existing standard that could perhaps be utilised. This helped reduce friction and only reinforced our collective understanding and shared vision.

The conversation continues with PESC and EdExchange as we support any organisation wishing to participate. We encourage everyone to move beyond pilots towards production so that we can all realise that original vision of a networked information exchange where we can enable learners - our customers - to achieve their dreams and aspirations through free and easy movement and lifelong learning.