

VC Pattern

Spanish issuer - Usage guidelines

Introduction

As part of the Studying Abroad Use Case 3 and its interaction pattern through Verifiable Credentials, the Spanish Data Owner has been adapted to play the role of Issuer within the interaction pattern.

This guide briefly shows how to navigate through the different screens, and it also describes the data flow among the citizen log in, the agent connection establishment, and the evidence exchange.

Glossary

Issuer: Data Provider (DO) who provides data in the form of Verifiable Presentation (VP).

Agent: Entity who enables trusted communication and data exchange based on interoperable distributed ledger technologies (DLTs) and peer-to-peer (P2P) interactions.

Verifiable presentation (VP): Tamper-evident presentation encoded in such a way that authorship of the data can be trusted after a process of cryptographic verification.

Verifiable credentials (VC): Tamper-evident credential that has authorship that can be cryptographically verified.

Authentication

The Spanish Data Owner is available on <https://pre-as4gw-dt-de4a.redsara.es/de4a-pid-owner/vc>, where you can directly access to the VC issuer. Before starting the process, a citizen authentication is needed, so, after the first access the user will be redirected to the national authentication platform, where it is possible to select an authentication method via eIDAS node:



Figure 1: Identification method selection

Select the country and log in to the system. If a foreign country is selected the platform will redirect the user to his national eIDAS node.



Figure 2: Country selection

Once the authentication is successful the user will be redirected to the main page of the VC pattern:

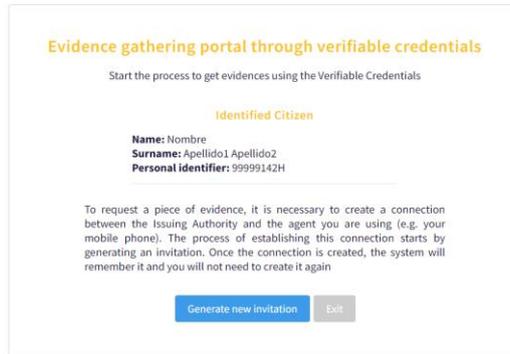


Figure 3: Main page

Connection

Once the citizen is authenticated, the next step would be establishing a connection between the issuer (DO) and the student agent (e.g., mobile app). To do so, some actions must be performed:

1. Generate the invitation (issuer)
2. Scan the invitation (mobile app)
3. Accept the invitation (mobile app)
4. Check the connection (issuer)

Generate invitation

Click on the corresponding button [image below: 'Generate new invitation']:

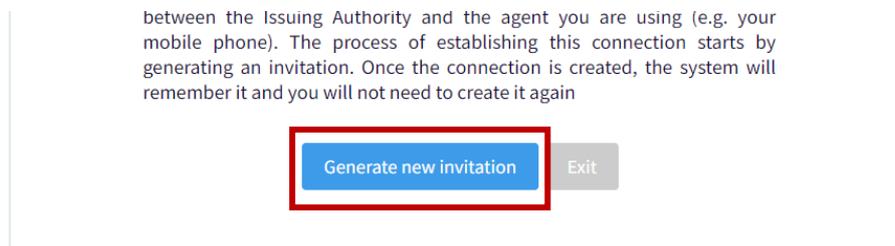


Figure 4: Generate invitation button

Then a new QR code will be generated from the invitation:

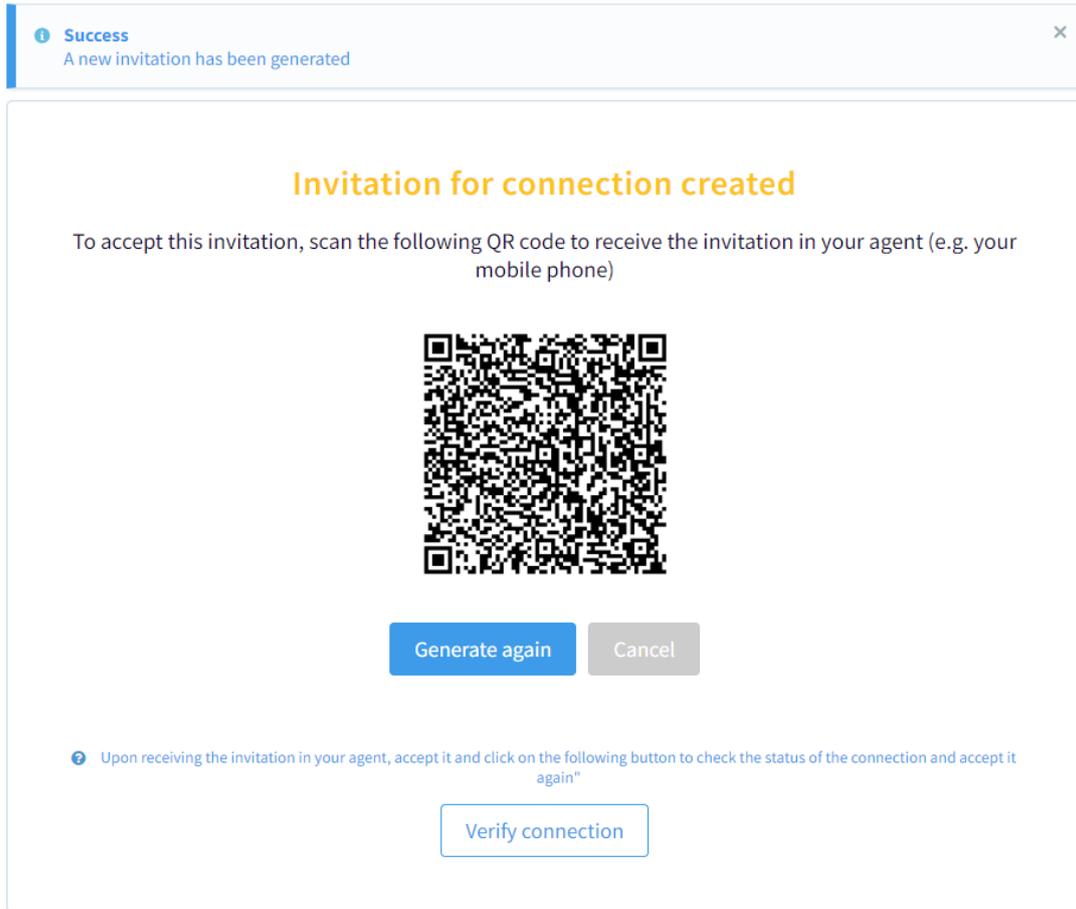


Figure 5: New invitation generated

Scan de invitation

To establish the connection between agents, the student must scan the QR code with the SSI mobile application.



Figure 6: QR code scanning

The app will recognize the QR code and register the new invitation showing it at the connections tab:

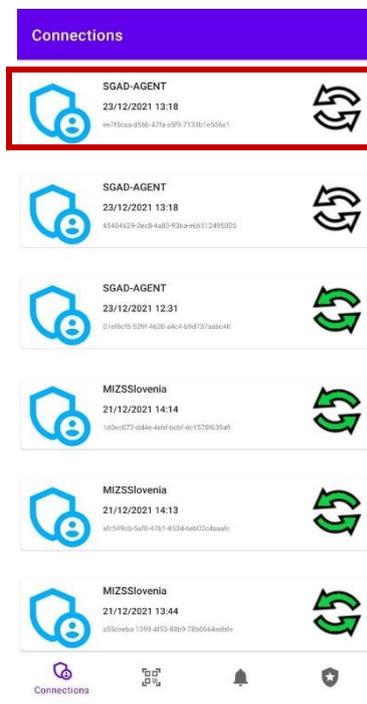


Figure 7: Invitation registered

Accept the invitation

The invitation acceptance will trigger the corresponding notification and messages between the agents to complete the connection process. The student must tap on the new connection element and then accept the invitation:

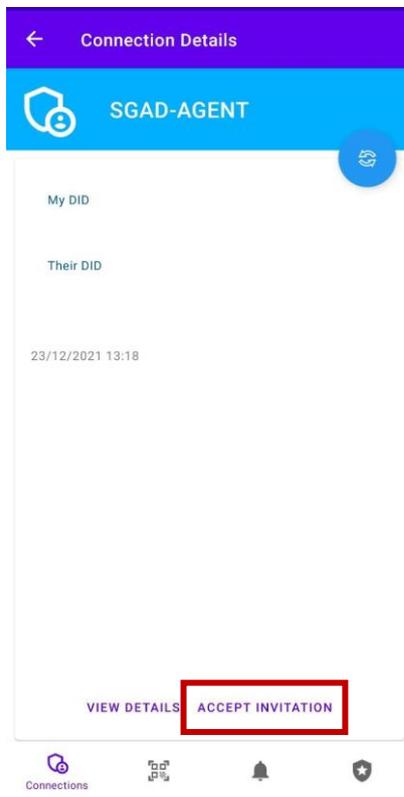


Figure 9: Accept invitation

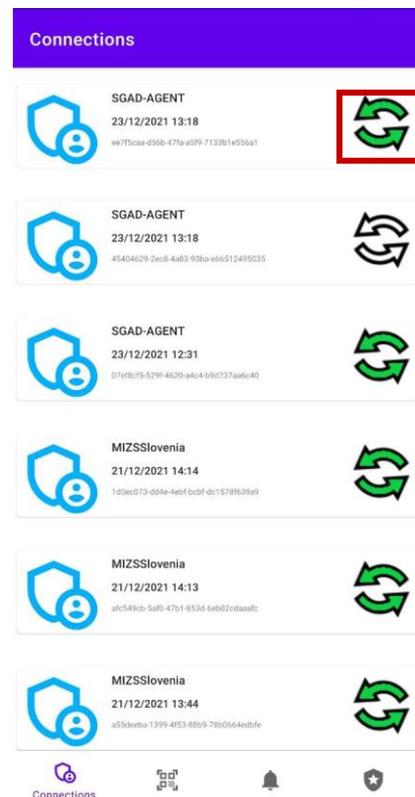


Figure 8: Connection established

Check the connection

At this point, the connection has been established. The user can check it by clicking “Verify connection” at the issuer side:

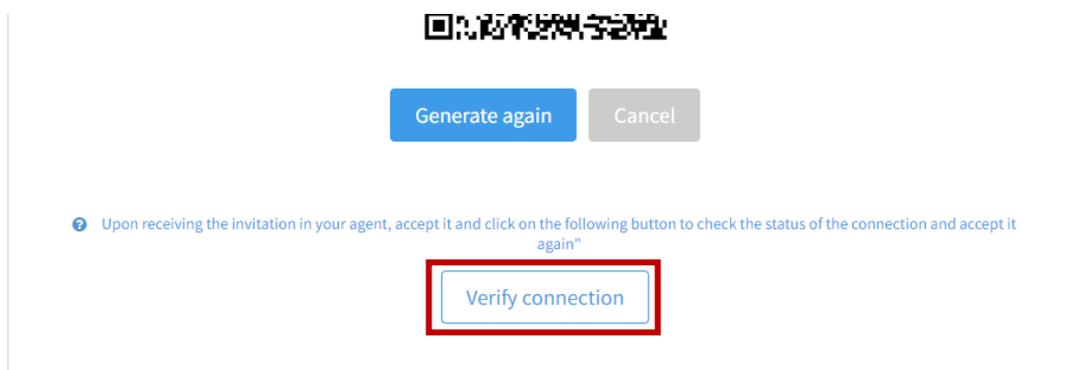


Figure 10: Verify connection

If everything went well, the user would see the following screen with connection successfully established:

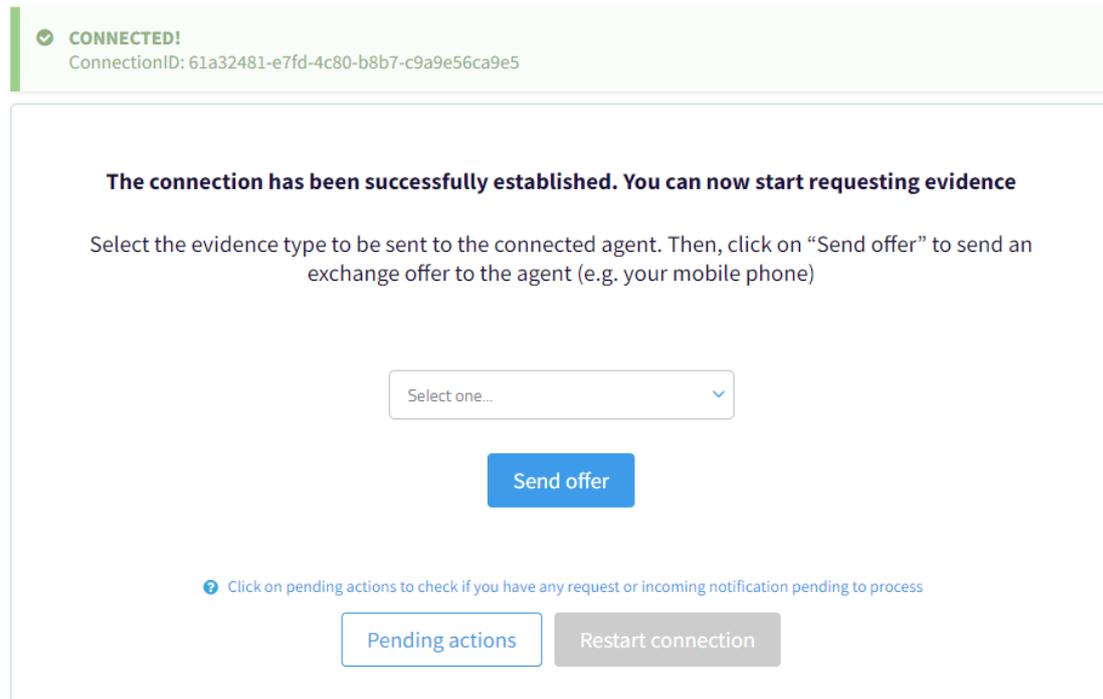


Figure 11: Connected screen

Evidence exchange

Once the connection is established, the user is able to retrieve evidence (Education Diploma) from the data provider. As part of the verifiable presentation, the process requires some actions:

1. Send offer (issuer)
2. Accept offer (mobile app)
3. Accept credential request (issuer)
4. Register evidence (mobile app)

Send offer

In the very beginning of the verifiable credentials exchange is the offer sending. But before that the user must select the evidence to be exchanged.

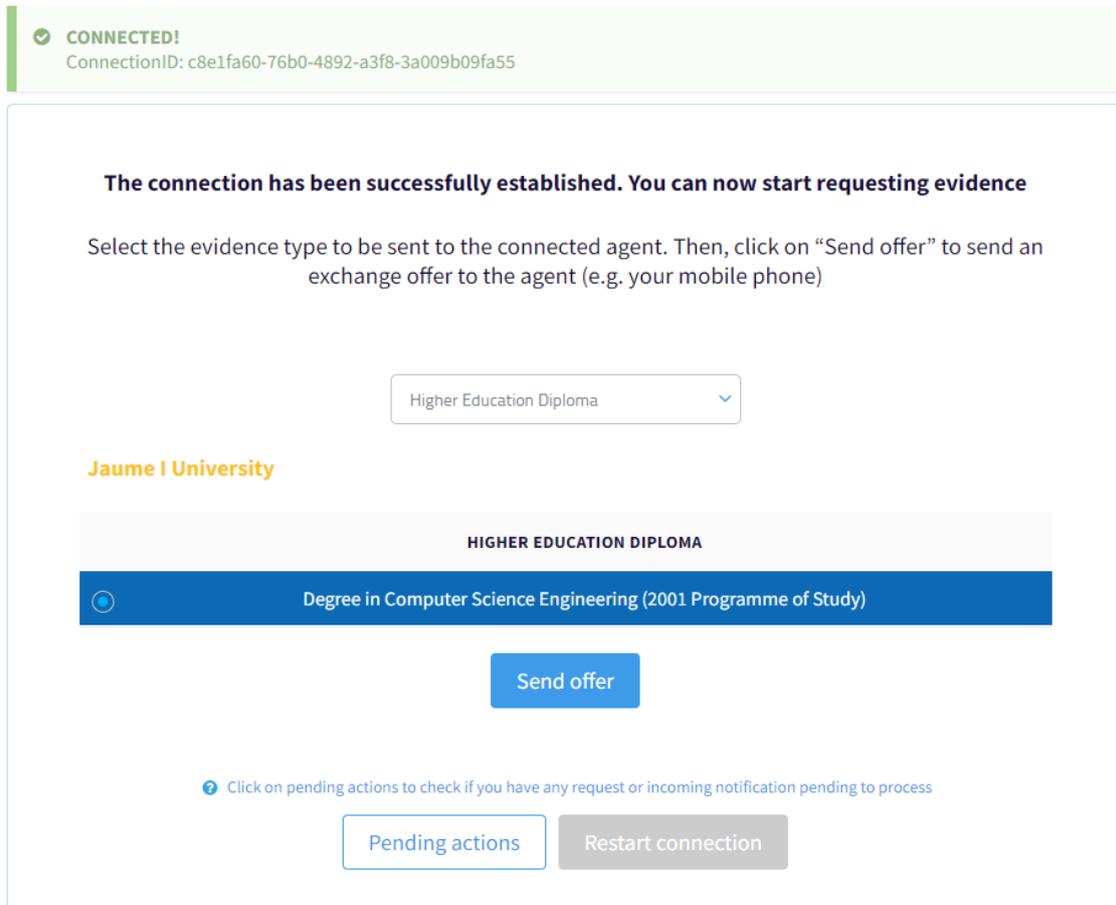


Figure 12: Evidence selection

After selecting the evidence, the user can start the VC exchange process by clicking the “Send offer” button. Then, an information message will be shown:

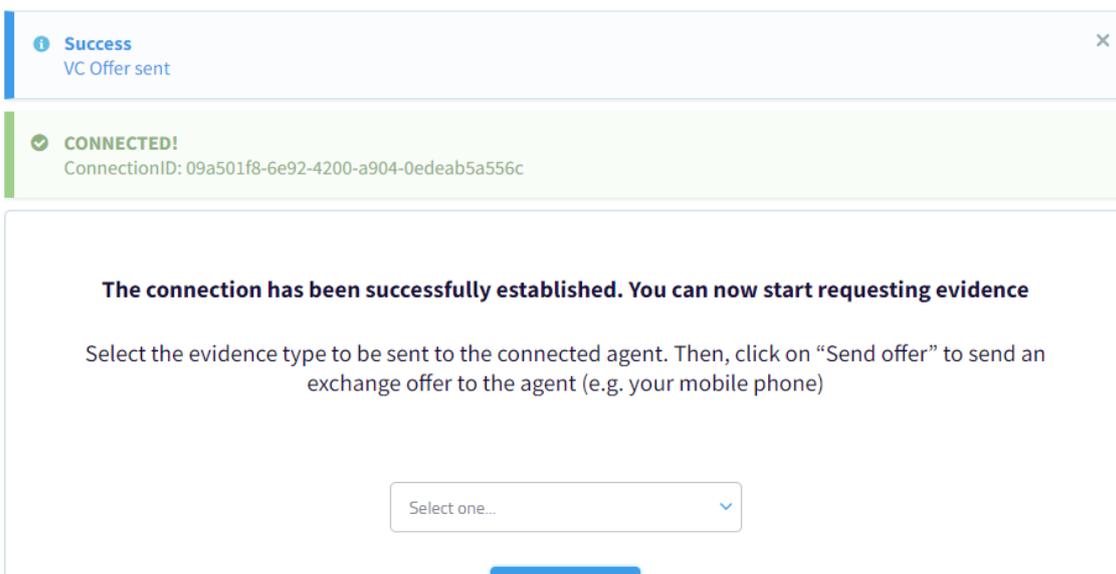


Figure 13: Offer sent

Accept offer

The student must accept the VC offer at the mobile app. Then the actions to be performed will look as the images below:

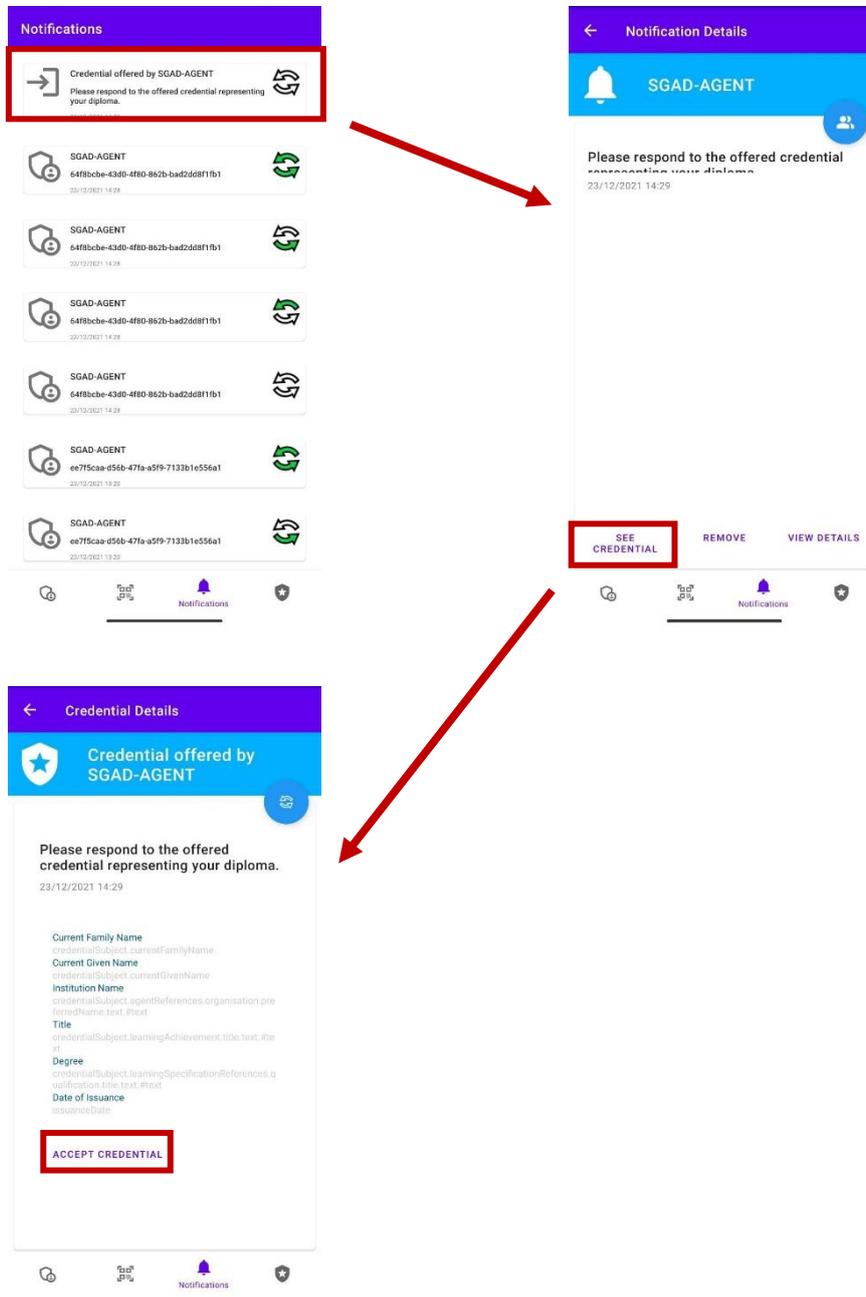


Figure 14: Offer acceptance

Accept credential request

Once the offer has been accepted, a notification based on the DID credentials is internally unleashed. At this point the user must check the pending actions at the issuer side:

The connection has been successfully established. You can now start requesting evidence

Select the evidence type to be sent to the connected agent. Then, click on “Send offer” to send an exchange offer to the agent (e.g. your mobile phone)

Select one... ▾

Send offer

🔗 Click on pending actions to check if you have any request or incoming notification pending to process

Pending actions

Restart connection

Pending actions

#	TYPE	
1	request-credential	Accept ➔

Figure 15: Issuer pending actions

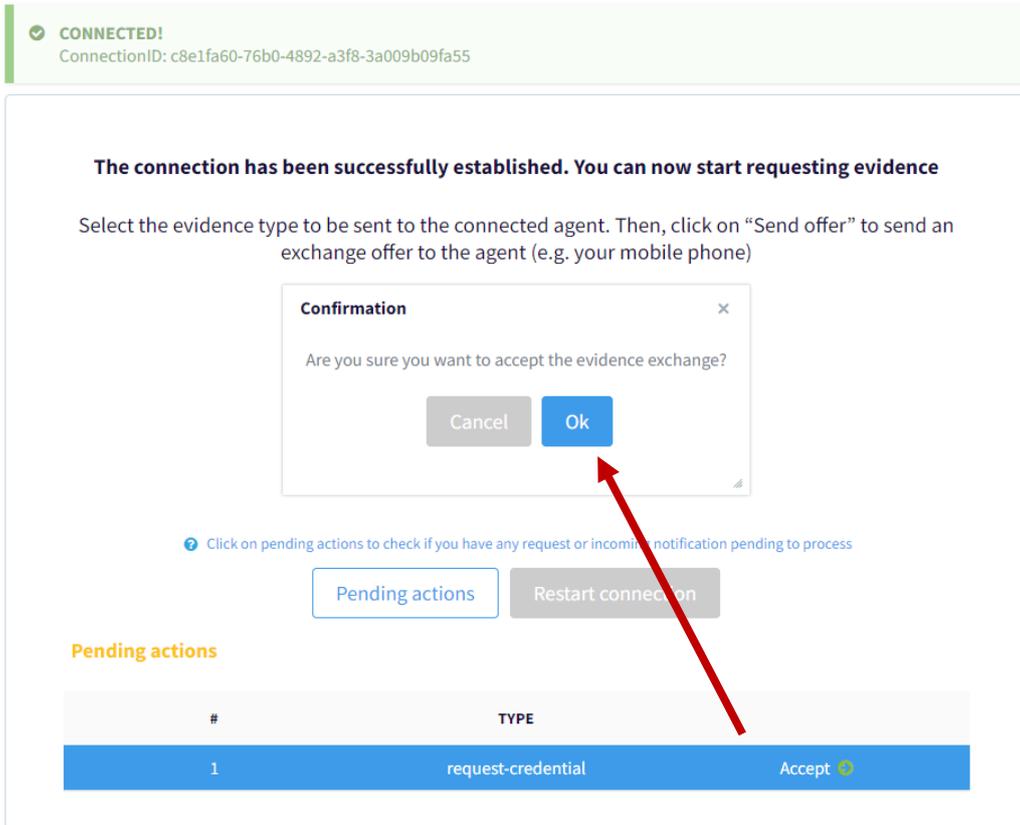


Figure 16: Accept the evidence Exchange

The previous action will effectively send the evidence to make it available to the student agent (mobile app).

Register credential (evidence)

The credential is already issued. This means that it will be available at the notification tab:

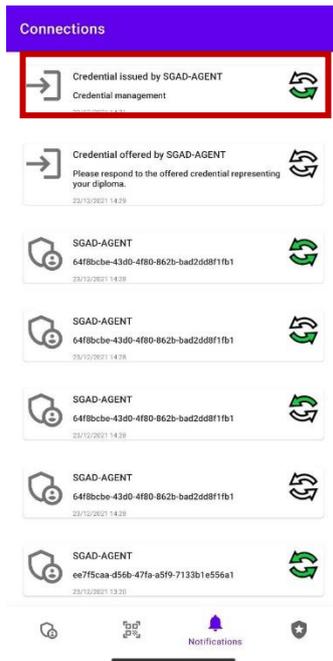


Figure 17: Credential issued notification

As any other notification, the user must accept it. To do so, the user must tap this item:

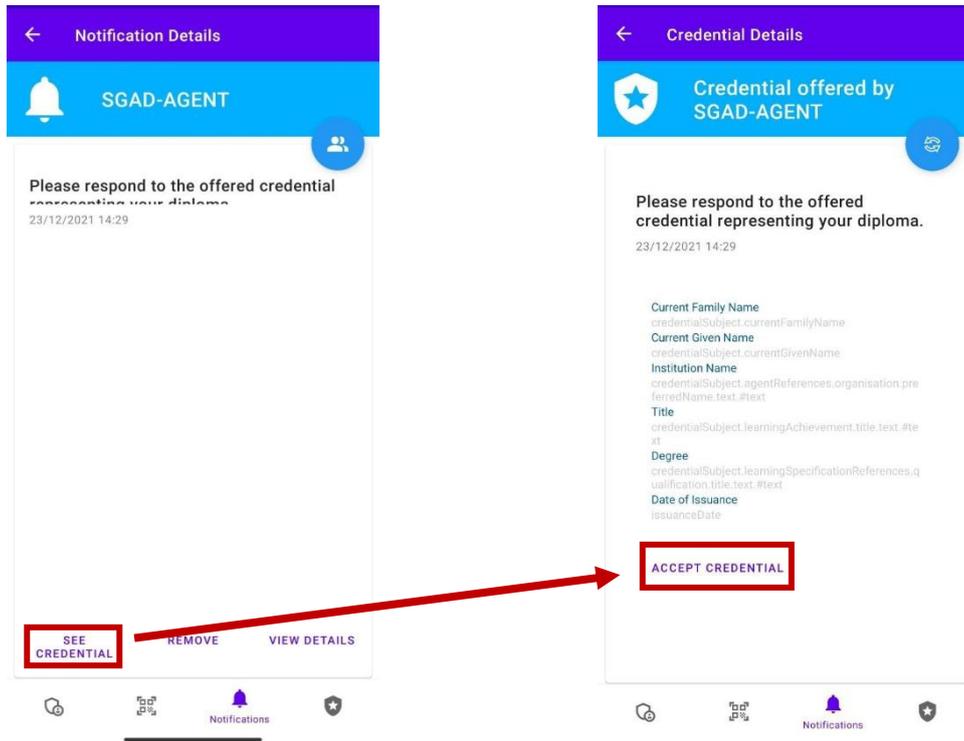


Figure 18: Accept credential

Register credential

At this point the credential exchange is completed. The student can register the credential (evidence) on his “wallet” where it will be stored for future reference. To do so the user can enter the Credentials tab and see each registered diploma.

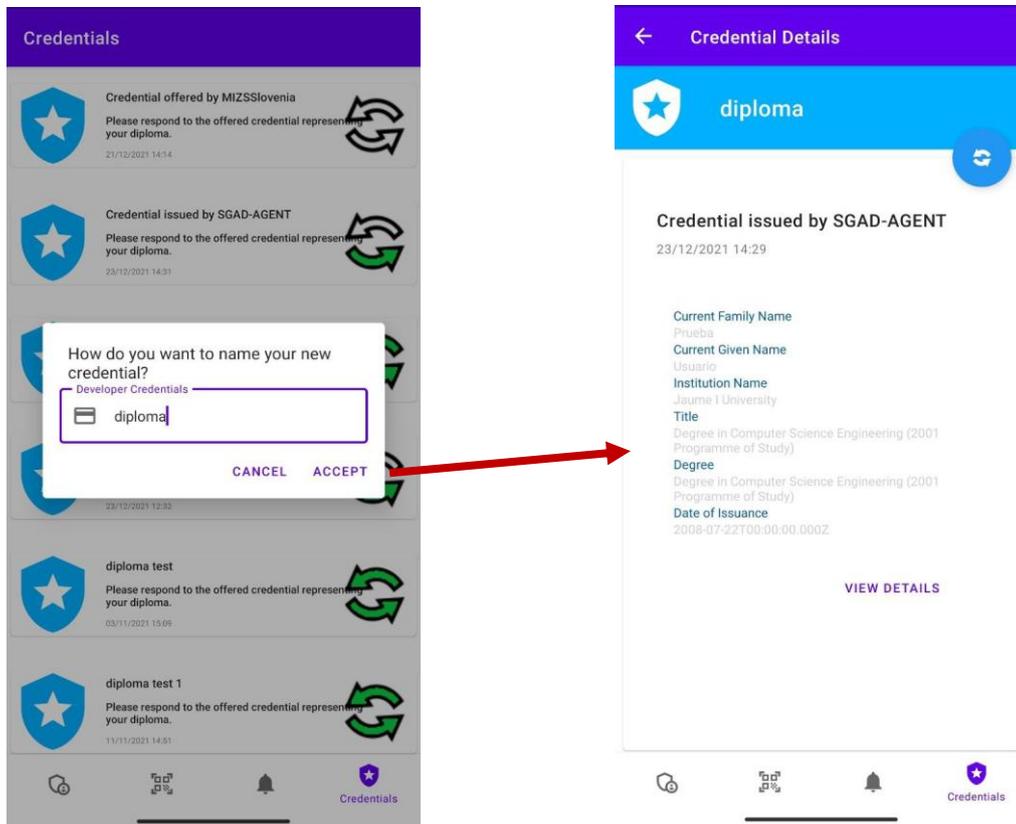


Figure 19: Register credential