1. Transparency Platform ECP Migration

The aim of this document is to describe how to switch ECP communication between users and TP Application from ECP3 to ECP4.

This document also contains estimation for effort and prices related to the ECP3 to ECP4 migration. This estimation is preliminary and can be adjusted in case of another/detailed specification of requirements.

Please, take into account that during the upgrade, the database is not migrated and so the messages received in ECP3 Endpoint are not accessible/visible in the ECP4 Endpoint.

1.1. Current Status

All components for ECP Transparency Network are currently on the ECP3 version. All connected users has the ECP3 Endpoints. Some of connected users (e.g. SEPS and MAVIR) has also its own ECP3 Node.

The only ECP4 components are ECP4 Endpoint and Component Directory used for CIO (Central Issuing Office) application. The current present ECP4 Component Directory is not suitable to be used for whole ECP Transparency Platform due to restricted HW resources and due to its origin purpose of use.

Once the Transparency Platform adequate ECP Component Directory will be in place, the current CIO ECP CD can be released, and CIO ECP EP reinstalled and registered to the new TP ECP CD.
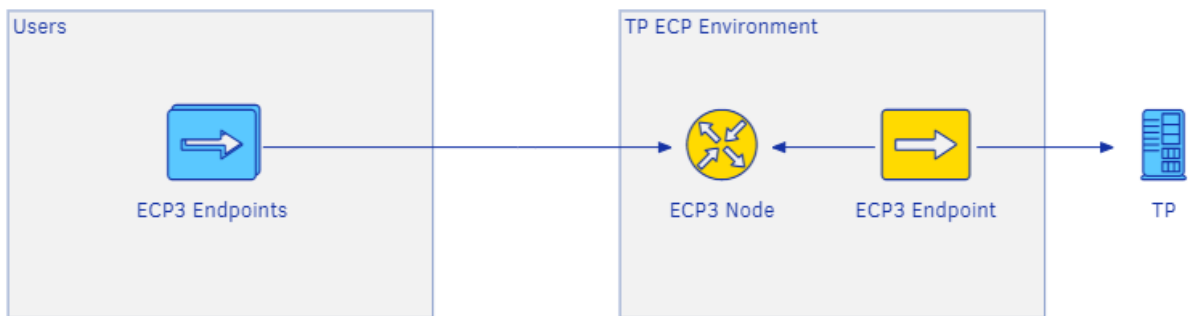

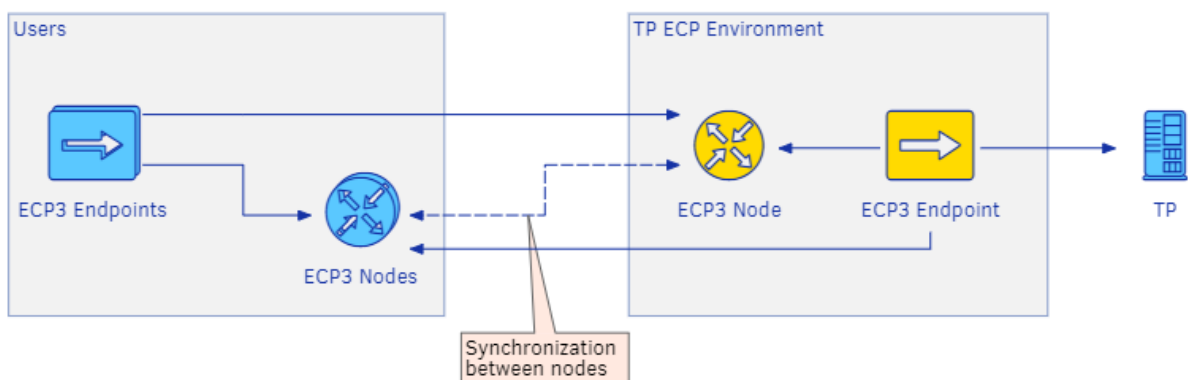*Figure 1, The scheme of the actual ECP environment*

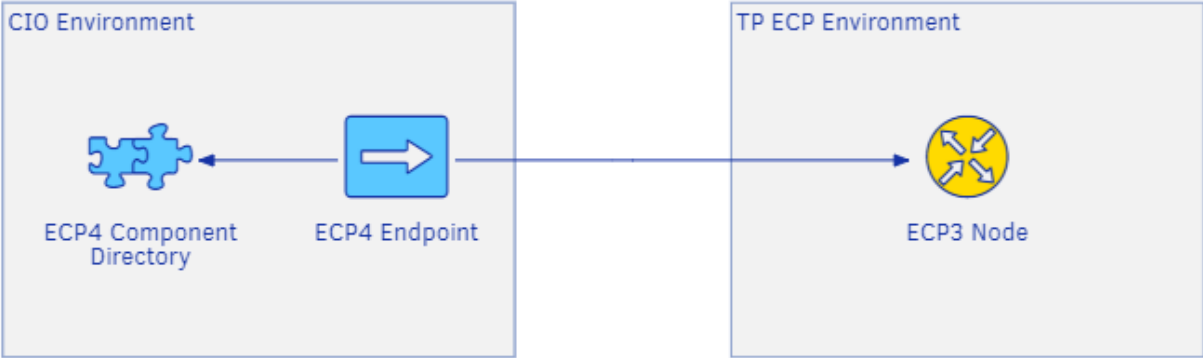*Figure 2: The scheme of the actual ECP environment for user with own ECP3 Node*

Figure 3: The scheme of the actual ECP environment with the CIO application.

2. Hardware Requirements

The minimal requirements for each ECP Component may be find in table below. The exact requirements for particular TSO may vary from the described based on particular use of ECP and particular TSO requirements for ECP operations.

Component	CPU	RAM	HDD	Other requirements
Component Directory	2	4GB	40GB	Public IP is required
Broker	4	8GB	40GB	Public IP is required
Endpoint	2	8GB	40GB*	

Table 1, Hardware requirements

) In case of external DB

3. ECP3 to ECP4 Switch process

This chapter describes, how the switch procedure itself will take place for data providers and data consumers, further both marked as users.

3.1. Option 1 – Users ECP Switch Using New vCodes

After central (ENTSO-E) components upgrade to the ECP4, users can install their ECP4 Endpoints with new vCodes. The switch procedure to ECP4 Endpoint for users will be following:

1. User decides to install its ECP4 Endpoint
   1. User requests for the new vCode (the process of requesting the vCode is described in the chapter 4.1)
   2. User installs ECP4 Endpoint and sends registration request to ECP4 Component Directory
   3. ENTSO-E approves registration
   4. User configures ECP message paths (described in the chapter 4.4)
2. User decides to start using ECP4 Endpoint
   1. Stop publishing messages from user's business application to user's ECP3 Endpoint
   2. Wait few minutes until all messages are processed and business acknowledgements delivered back to user's ECP3 Endpoint
   3. Receive all messages (business acknowledgements) from user's ECP3 Endpoint (in case of WS channel) by user's business application
   4. User creates new machine user for ECP channel with the new ECP4 vCode in TP GUI (described in the chapter 4.6.1)
      • after that, TP is configured to receive data from this ECP Endpoint vCode
      • in case that user has configured Subscription channel by ECP, also this Endpoint Code has to be changed (described in the chapter 4.6.2)
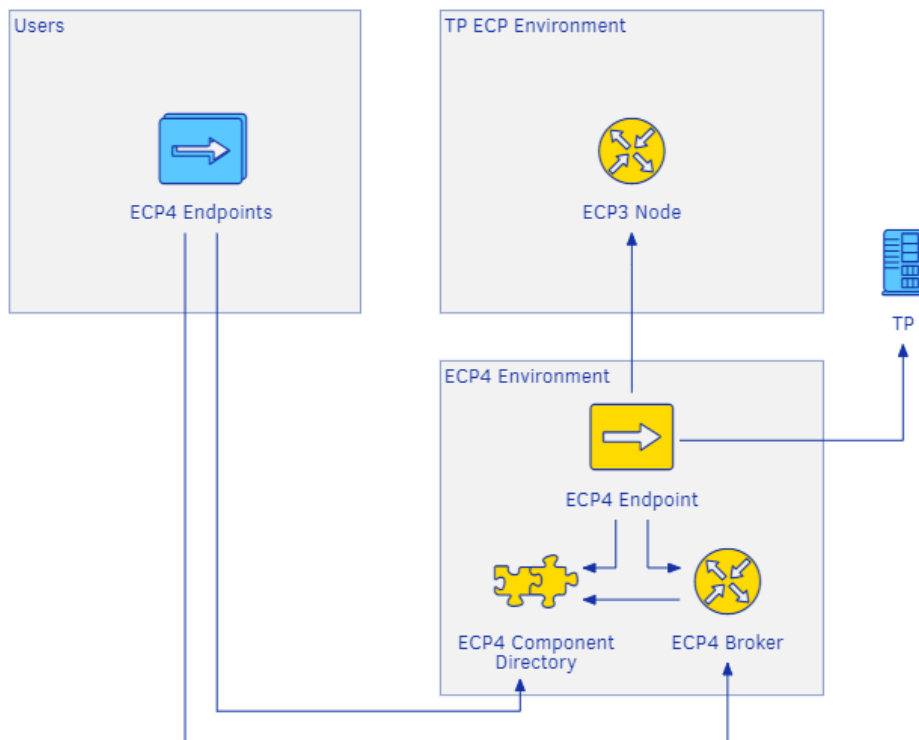   5. User configures its BA to its ECP4 Endpoint and starts sending/receiving messages through it

Figure 4: The state of environment after user's ECP Endpoint upgrade.

3.1.1. Alternative scenario: Participants with own Broker Using New vCodes

In case that the user would like to use own ECP4 central component (ECP Broker) instead of ECP3 Node, the user, has to install also own ECP Broker. The switch procedure will be the following:

1. User decides to install its ECP Endpoint and ECP Broker
   1. User asks for 2 new vCodes (the process of requesting the vCode is described in the chapter 4.1)
   2. User installs ECP4 Endpoint and ECP Broker and sends registration of both components to ECP4 Component Directory
   3. ENTSO-E approves registrations
   4. User configures ECP message paths (described in the chapter 4.4)
2. User decides to start using ECP4
   1. Stop publishing messages from user's business application to user's ECP3 Endpoint
   2. Wait few minutes until all messages are processed and business acknowledgements delivered back to user's ECP3 Endpoint
   3. Receive all messages (business acknowledgements) from user's ECP3 Endpoint (in case of WS channel) by user's business application
   4. User creates new machine user for ECP channel with the new ECP4 vCode in TP GUI (described in the chapter 4.6.1)
      - after that, TP is configured to receive data from this ECP Endpoint vCode
      - in case that user has configured Subscription channel by ECP, also this Endpoint Code has to be changed (described in the chapter 4.6.2)
   5. User configures its BA to its ECP4 Endpoint and starts sending/receiving messages through it
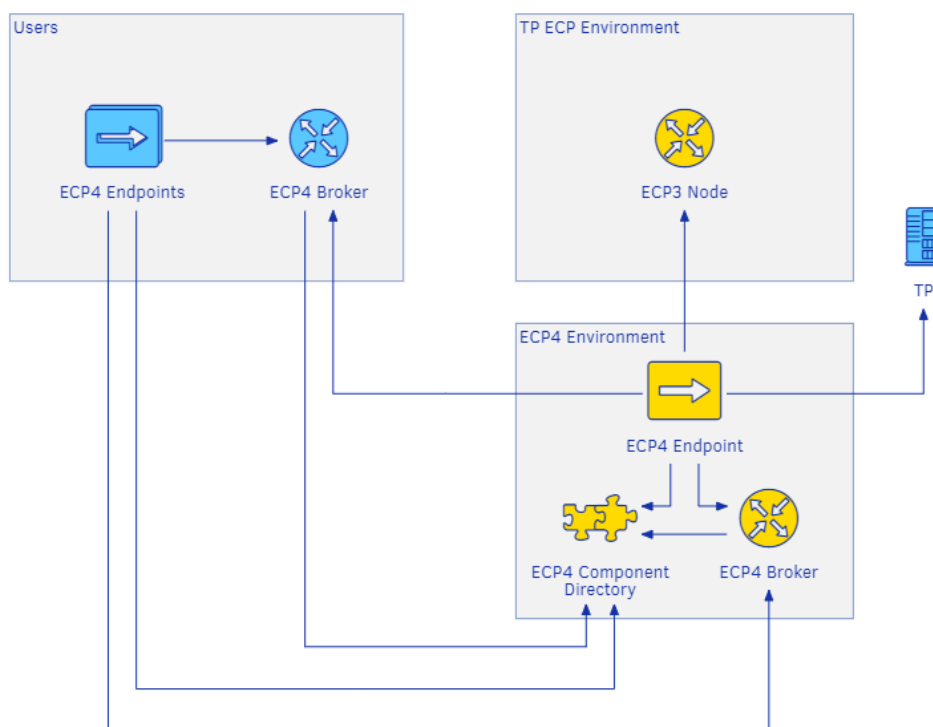

Figure 5: The state of environment after user's ECP Endpoint and Broker upgrade.

3.1.2. Option 1 – Summary

The usage of new vCode for ECP4 allows to the user the possibility to choose which ECP version user wants to use. When new vCode will be received, new machine user in TP can be created. The switch between ECP versions is simple and straightforward via machine user in TP and no cooperation with ENTSO-E is needed once new machine user is created.

3.2.   Option 2 – Users ECP Switch Using Same vCodes

After central (ENTSO-E) components upgrade to the ECP4, users can upgrade their ECP Endpoints. In this option user's uses the same ECP3 Endpoint's vCode for the new ECP4 Endpoint. The procedure for users will be following:

1. Stop publishing messages from user's business application to user's ECP3 Endpoint.
2. Wait until all messages are processed and business acknowledgements delivered back to user's ECP3 Endpoint.
3. Receive all messages (business acknowledgements) from user's ECP3 Endpoint (in case of WS channel) by user's business application.
4. Approval of the ECP4 Endpoint registration on the ECP Component Directory - performed by ENTSO-E
    a. ECP4 Endpoint can be installed and the registration request sent in any time before.
    b. When the registration request is approved, the TP ECP4 Endpoint starts sending messages to the user's ECP4 Endpoint.
    c. User has to configure Message Path for receiving messages on the ECP4 Endpoint (configuration described in the chapter 4.4).
5. Start publishing messages from user's business application to the new user's ECP4 Endpoint.

The visualization of the environment state is displayed on the *Figure 4* (it is the same as for option 1).

3.2.1. Alternative Scenario: Participants with own Broker Using Same vCodes

In case that the user would like to use own ECP4 central component (ECP Broker) instead of ECP3 Node, the user has to install also own ECP Broker (with ECP3 Node vCode). The upgrade procedure will be the following:

1. Stop publishing messages from user's business application to user's ECP3 Endpoint.
2. Wait until all messages are processed and business acknowledgements delivered back to user's ECP3 Endpoint.
3. Receive all messages (business acknowledgements) from user's ECP3 Endpoint (in case of WS channel) by user's business application.
4. Approval of the ECP4 Endpoint and ECP4 Broker registration on the ECP Component Directory - performed by ENTSO-E
    a. ECP4 Endpoint and ECP4 Broker can be installed and the registration request sent in any time before.
    b. When the registration request is approved, the TP ECP4 Endpoint starts sending messages to the user's ECP4 Endpoint.
    c. User has to configure Message Path through own ECP4 Broker for receiving messages on the ECP4 Endpoint (configuration described in chapter 4.4).
5. Start publishing messages from user's business application to the new user's ECP4 Endpoint.

The visualization of the environment state is displayed on the *Figure 5* (it is the same as for option 1).

3.2.2. Option 2 – Summary

Reusing of ECP3 vCode in ECP4 is not recommended. The switching between ECP versions is more complex than Option 1 (using new vCodes) and require timing on cooperation between user and ENTSO-E.

When ECP4 Endpoint's registration is approved on ECP4 Component Directory, the ECP3 Endpoint is not resolved as the receiver anymore. All messages are then routed to the user's ECP4 Endpoint. This means that there is needed cooperation with ENTSO-E on the time when the registration should be approved. However, in case of switch back to ECP3 Endpoint the ECP4 Endpoint registration has to be manually revoked on ECP4 Component Directory, which means also the cooperation with ENTSO-E

3.3.   ECP4 Network – Final State

When all users' ECP Endpoints are upgraded, ENTSO-E's ECP3 Node can be removed. The final state of the environment is on the following picture.
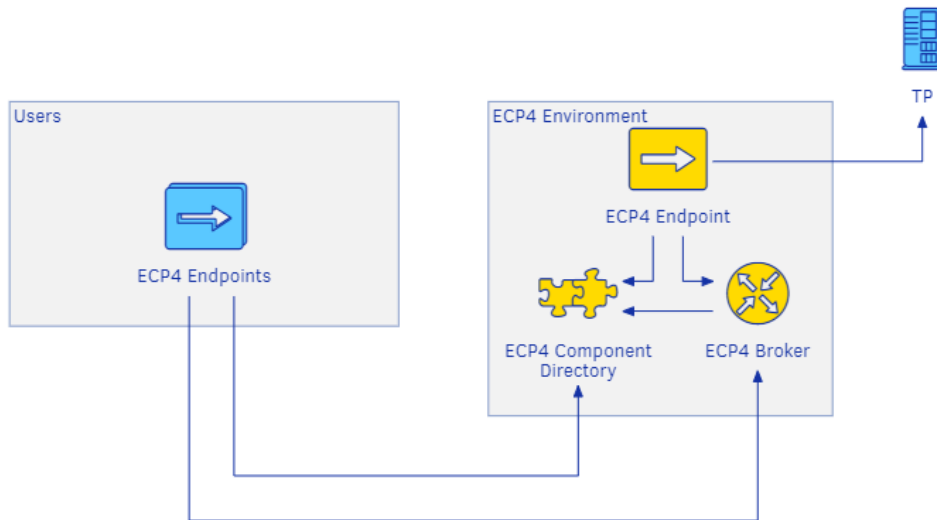
Figure 6: Scheme of the final state of the environment.

3.3.1. Alternative: Participants with own ECP Broker

In case that the participant has his own central component (ECP Broker), his final status will be like it is visualized in the scheme below (*Figure 7*), otherwise, his final status will be like described in *Figure 6*.
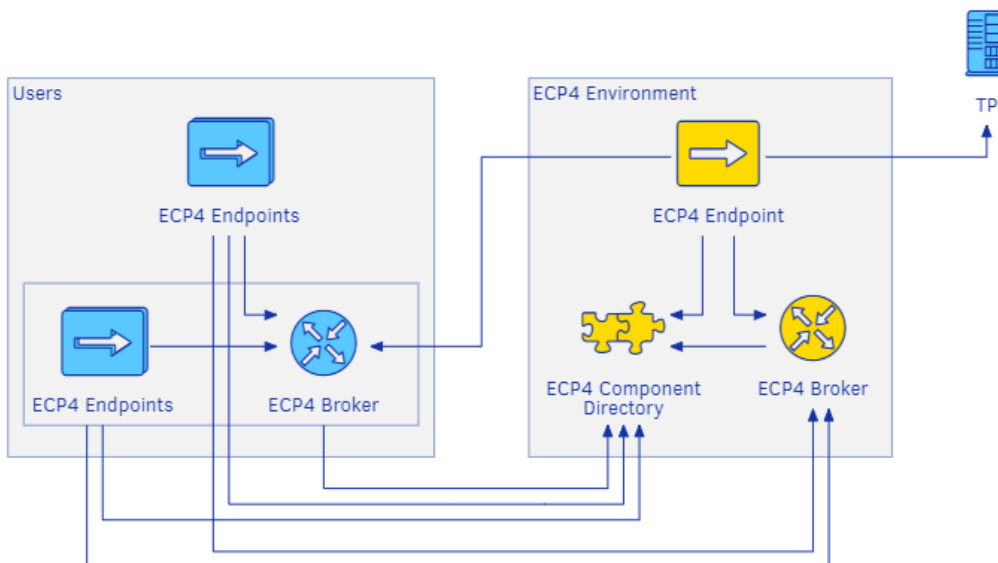

Figure 7: The scheme of the final state of the environment (with central components).

4. How to Get Connected

This chapter describes the steps that have to be done during the installation of ECP4 Endpoint and switching from ECP3 Endpoint to ECP4 Endpoint.

4.1. Requesting EIC V-Code

To successfully register your ECP Endpoint in the ECP Component Directory, you need to set the Component code during the ECP Endpoint registration process. Please, request the new EIC V-code from your LIO: https://www.entsoe.eu/data/energy-identification-codes-eic/eic-lio-websites/Pages/default.aspx. Please, use the Endpoint function in your request.

4.2. Configuration for your TSO

For the successful installation, configuration and connection, the following configurations are needed:

Information	Value	Where to use it
Registration keystore	registrationKeystore.jks	ECP Endpoint registration process, Import Certificates
ECP Component Directory URL	https://ecp.entsoe.eu:8443/ECP_MODULE	ECP Endpoint registration process, Connect to component Directory
ECP Component Directory Code	10V1001C--00042A	ECP Endpoint registration process, Connect to component Directory

Table 2: Configuration for your TSO

4.3. Firewall Configuration

IP	Port	Protocol	Direction	Purpose
ecp.entsoe.eu (62.209.222.29)	8443	https	Outgoing	DP ECP Endpoint -> ECP Component Directory
ecp.entsoe.eu (62.209.222.29)	5672	amqps	Outgoing	DP IOP ECP Endpoint -> ECP Broker – IOP
ecp.entsoe.eu (62.209.222.29)	5671	amqps	Outgoing	DP PROD ECP Endpoint -> ECP Broker – PROD

Table 3: Firewall Configuration

4.4. Message Path Settings

In the ECP GUI, configure the following paths:

Message type	Path (broker)	Info
*	10V1001C--000438	Configuration of message path for IOP ECP Endpoint
*	10V1001C--000446	Configuration of message path for PROD ECP Endpoint

Table 1: Message Type

After installation of ECP endpoint there will be no message paths present and it will not be possible to send or receive messages to or from the current endpoint. The following instructions describe how to add a new message path.

4.4.1. How to Add a New Message Path

Open the ECP Endpoint web interface and navigate to the page "Settings". Locate the paths section and click the "New path" button. A new path dialog box will open.

Figure 8: Addition of the New Path

Message for TP usage will be configured:

1. Senders = All
2. Message Type = *
3. Path = Indirect
    1. Selected ECP Broker vCode for IOP = 10V1001C--000438
    2. Selected ECP Broker vCode for PROD = 10V1001C--000446
4. Valid from = keep prefilled value
5. Valid to = keep empty

This configuration means that the ECP Endpoint, where the message path is configured, is receiving all incoming messages via the selected ECP Broker.

When a new message path is successfully created, it will be distributed to other ECP components through the component directory synchronization. Please note that this process is asynchronous and requires time to complete.

4.5. ECP Endpoint Certificate Renewal

ECP Endpoint's certificates are generated for one year. To enable automatic renewal of the certificates open ECP Endpoint web interface and navigate to the tab "Settings". Locate the certificates section and on the button "Enable" for Automatic renewal. Certificates will be then automatically renewed 30 days before their expiration.

Figure 11: Automatic certificate renewal

4.6. Changes in Transparency Platform

User can choose, whether he will create new machine user or whether he will edit the current machine user. This chapter describes the steps, how to proceed in both situations, how to create, and also, how to edit the machine user in the Transparency platform in GUI.

4.6.1. How to Add New Machine User

At first, user chooses the option "Administration". Then, in the "Application Management and Settings" user chooses the "Machine User Management".

In the part "Machine User Management", by choosing the option "Create Machine User" user can create new machine user.

After choosing this option, the window "New Machine User" will be displayed as shown in the screenshot below. Fields marked with the red star are mandatory, so new user cannot be created in case that they are not filled in.

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After all the mandatory information is filled in, by clicking on the "Create User", new machine user will be created and shown in the list of users in the part "Machine User Management".

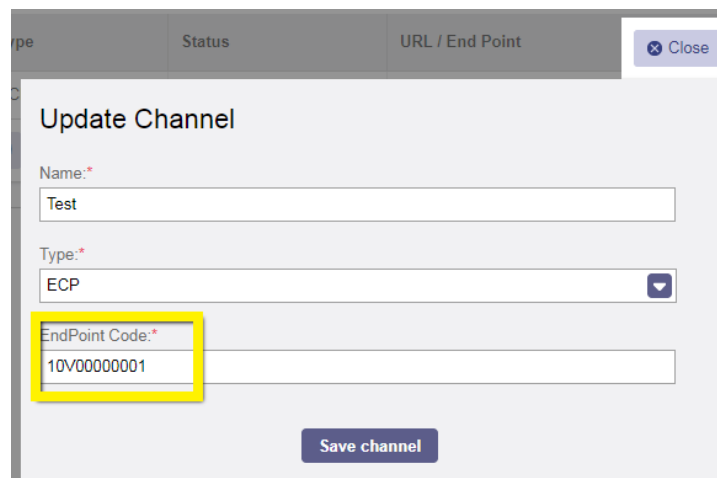## 4.6.2. How to Change the Subscription ECP Endpoint

In case that user uses Subscription Channel, the Endpoint code has to be edited too. Please navigate to the User menu and select "My subscription channels".

For editing of Subscription channel click on the "pencil" button on the row which is wanted to be changed.

Then change the vCode to the new one, which corresponds to the new ECP4 Endpoint and then click save. From that point all subscriptions are sent to the ECP4 Endpoint.