

Documentatie testare API-uri PSD2

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1 Inrolarea Automata:

Pentru a putea incepe testarea api-urilor este necesara inrolarea utilizatorului. Pentru a putea face acest lucru trebuie urmati urmatoorii pasi:

- Crearea user-ului
- Crearea unei aplicatii



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In portal vom merge pe fereastra „Our Products” si vom selecta api-ul : API’s for Automation Enrollment.

Dupa selectare vom putea vedea api-ul de „Dynamic Users Register”:

The screenshot shows the CEC Bank API Developer Portal. The header includes the CEC Bank logo, navigation links for PRODUCTS, HOW IT WORKS, and CONTACT US, a language selector set to EN, and a user profile icon. Below the header, a breadcrumb trail reads: Back | API Products | Dynamic Users Register - API Developer Portal | Dynamic Users Register - API Developer Portal. The main title is "Dynamic Users Register" with a version badge "1.0.0". A left sidebar contains a menu with "Overview" (selected), "POST /portal/users/register", "POST /create/app", and "Definitions". The main content area, titled "Overview", displays the following details:

- Type:** REST (OAS2)
- Protocol:** HTTPS
- Endpoint:** Production, Development: <https://api-test.cec.ro/cec/tpp/dynamic-users-register>

At the bottom of the overview section is a link: [Download OpenAPI Document](#) with a download icon.

1.1 Crearea user-ului:

Trebuie selectat primul apel: „POST /portal/users/register” pentru a face apelul de creare de user.

Datele completate in body trebuie retinute deoarece vor fi folosite si in apelul de creare de aplicatie.

In partea de body trebuie completat urmatorul model de body:

```
body : {  
  "username": "john.doe@yahoo.com",  
  "password": "password",  
  "first_name": "John",  
  "last_name": "Doe",  
  "organization": "JohnORG"  
}
```



PRODUCTS ▾HOW IT WORKSCONTACT USEN ▾

DETAILS

TRY IT

POST

Production, Developmentsterhttps://api-test.cec.ro/cec/tpp/dynamic-users-register/portal/users/regi

Parameters

Header ^

Acceptapplication/json

Content-Typeapplication/json

TPP-Signature-Certificate*

Generate

-----BEGIN CERTIFICATE-----xxxEXAMPLExxxxxxxxxxEXAMPLExxxxx...

Body ^

Body*

Generate

generated

```
generated{  "first_name": "John",  "last_name": "Doe",  "organization": "JohnORG"}}
```

RESET

SEND

Daca datele introduse sunt valide apelul va returna un raspuns de „201 created” si pe adresa de email completata in body o sa primiti un email de confirmare in care se va regasii link-ul de activare.

Link-ul trebuie accesat in pagina web pentru a finaliza pasul de inrolare.

1.2 Crearea unei aplicatii:

Trebuie selectat al doi-lea apel: „POST /create/app” pentru a face apelul de creare de de aplicatie si obtinerea unui set de credentiale de test.

The screenshot displays the CEC Bank API Developer Portal interface. At the top, the CEC Bank logo is on the left, and navigation links for 'PRODUCTS', 'HOW IT WORKS', and 'CONTACT US' are on the right. A language selector shows 'EN' and a user profile icon. Below the header, a breadcrumb trail reads 'Back | API Products | Dynamic Users Register - API Developer Portal | Dynamic Users Register - API Developer Portal'. The main title 'Dynamic Users Register' is prominently displayed, with a version indicator '1.0.0' in a green pill. A left sidebar contains a menu with 'Overview', 'POST /portal/users/register', 'POST /create/app' (highlighted), and 'Definitions'. The main content area is titled 'POST : /create/app' and features two tabs: 'DETAILS' and 'TRY IT'. Under the 'DETAILS' tab, the 'POST' method is listed with its production and development URLs. The 'Parameters' section is expanded, showing 'Header' and 'Accept' (set to 'application/json'). Below this, 'Content-Type' is also set to 'application/json'. Two fields for 'TPP-Signature-Certificate*' and 'Redirect-URI*' are shown, each with a 'Generate' button.

CEC Bank PRODUCTS v HOW IT WORKS CONTACT US EN

Back | API Products | Dynamic Users Register - API Developer Portal | Dynamic Users Register - API Developer Portal

Dynamic Users Register 1.0.0

- Overview
- POST /portal/users/register
- POST /create/app**
- Definitions

POST : /create/app

DETAILS **TRY IT**

POST Production, <https://api-test.cec.ro/cec/tpp/dynamic-users-register/create/app>
Development:

Parameters

Header ^

Accept

application/json

Content-Type

application/json

TPP-Signature-Certificate* **Generate**

Redirect-URI* **Generate**



Dynamic Users Register

1.0.0

- Overview
- POST /portal/users/register
- POST /create/app
- Definitions

POST : /create/app

DETAILS

TRY IT

POST

Production, <https://api-test.cec.ro/cec/tpp/dynamic-users-register/create/app>
Development:

Parameters

Header ^

Accept

application/json

Content-Type

application/json

TPP-Signature-Certificate*

Generate

-----BEGIN CERTIFICATE-----xxxEXAMPLExxxxxxxxxxEXAMPLExxxxxx...

Redirect-URI*

Generate

<http://vulo.mz/fopna>

Pentru a putea face apelul trebuie completate urmatoarele header-e :

-TPP-Signature-Certificate = -----BEGIN CERTIFICATE-----

xxxEXAMPLExxxxxxxxxxEXAMPLExxxxxxxxxxEXAMPLExxxxxxxxxxEXAMPLExxxxxxxxE
XAMPLExxxxxxxxxxEXAMPLExxxxxxxxxxEXAMPLExxxxxxxxxxEXAMPLExxxxxxxxEXA
MPLExxxxxxxxxxEXAMPLExxxxxxxxxxEXAMPLExxxxxxxxxxEXAMPLExxxxxxxxEXAMPL
ExxxxxxxxxxEXAMPLExxxxxxxxxxEXAMPLExxxxxxxxxxEXAMPLExxxxxxxxEXAMPL
ExxxxxxxxxxEXAMPLExxxxxxxxxxEXAMPLExxxxxxxxxxEXAMPLExxxxx-----END
CERTIFICATE-----

- Content-Type = application/json

- Redirect-Uri = „<https://www.google.com>”(link-ul trecut este un exemplu si se poate trece orice link de redirect)

In partea de body trebuie completat urmatorul model de body:

```
body : {  
  "username":"john.doe@yahoo.com",  
  "password":"password",  
  "app_name":"JohnAPP",  
  "app_title":"JohnAPP",  
  "organization":"JohnORG"  
}
```

Daca numele organizatiei completat in pasul de inrolare contine spatii ("organization":"John ORG"), cand se completeaza body-ul de request pentru apelul de creare de aplicatie trebuie sa inlocuim spatiile cu „-”.

Ex:

```
body : {  
  "username":"john.doe@yahoo.com",  
  "password":"password",  
  "app_name":"JohnAPP",  
  "app_title":"JohnAPP",  
  "organization":"John-ORG"  
}
```



Parameters

Header ^

Accept

application/json

Content-Type

application/json

TPP-Signature-Certificate*

Generate

-----BEGIN CERTIFICATE-----xxxEXAMPLExxxxxxxxxxEXAMPLExxxxx...

Redirect-URI*

Generate

http://vulo.mz/fopna

Body ^

Body*

Generate

generated

```
{
  "username": "john.doe@yahoo.com",
  "password": "password",
  "app_name": "JohnAPP",
  "app_title": "JohnAPP"
}
```

RESET

SEND

In urma apelului vom primi un raspuns de forma :

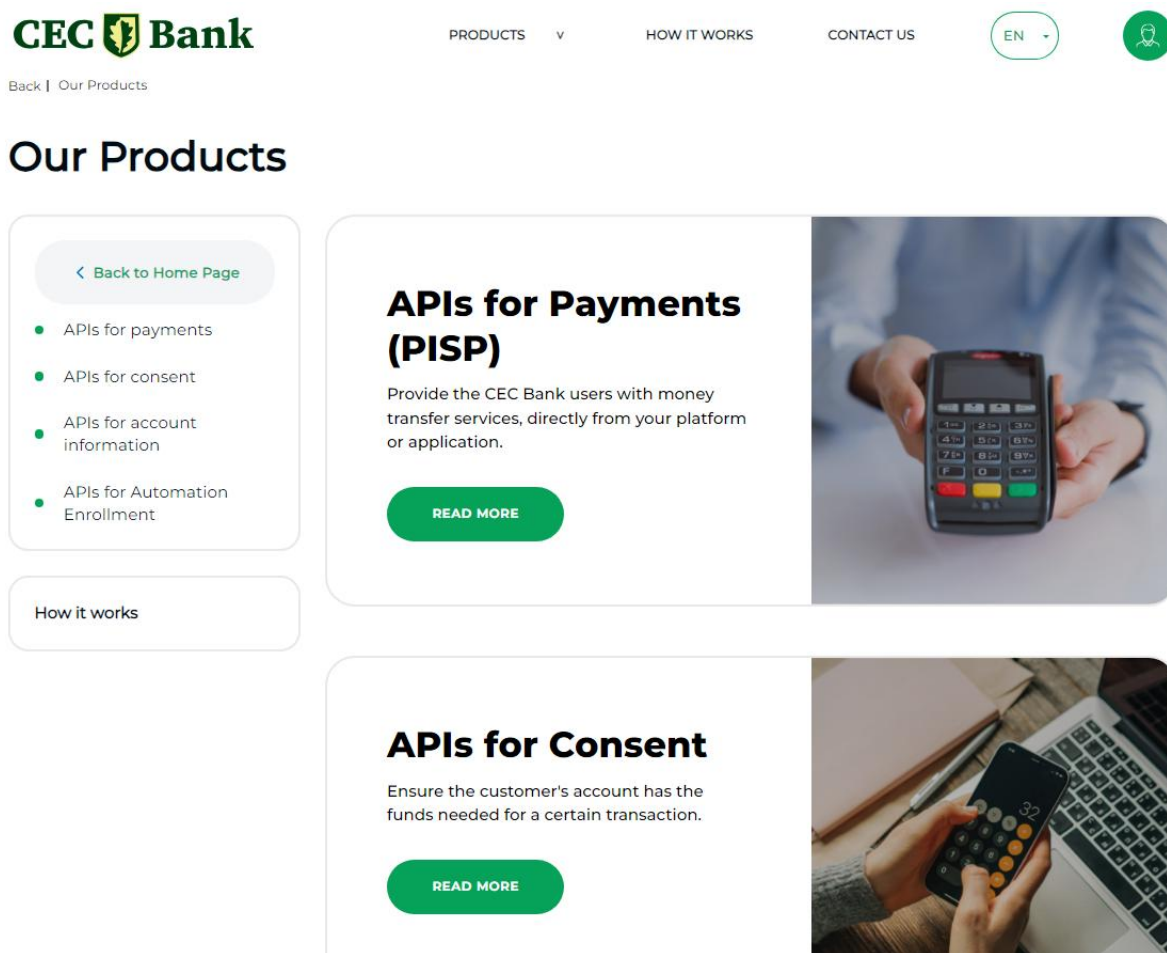
201 Created

```
{
  "Application_Name": " JohnAPP",
  "Application_Title": " JohnAPP",
  "client_id": "f9dTESTa5798TESTc76a837a",
  "client_secret": "b0fTEST5a70TEST2e8460TEST23b50"
}
```

Cu aceste credentiale vom putea face apelurile prezentate mai jos si trebuie salvate pentru a le avea de fiecare data cand va fi nevoie sa le folositi.

2 Descriere functionalitati produs PSD2-CECAPIC

Dupa logarea pe portal, utilizatorii inregistrati au acces la produsul PSD2-CECAPIC



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APIs for Consent

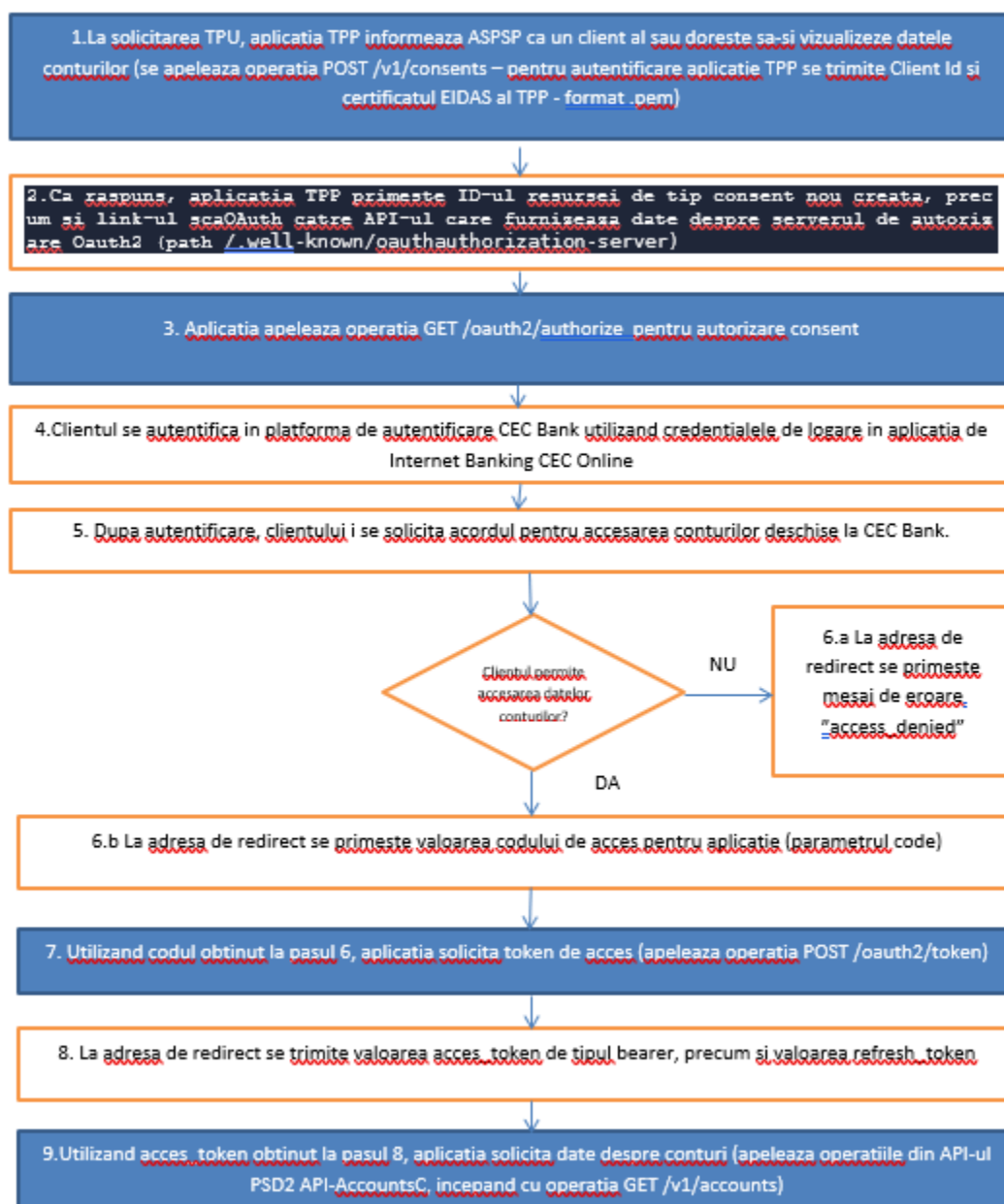
Ensure the customer's account has the funds needed for a certain transaction.

[READ MORE](#)

Acest produs include API-urile necesare dezvoltarii aplicatiilor TPP cu functionalitati de tip AIS/PIS:

- PSD2 API-ConsentC: contine operatiile necesare preluarii consimtamantului clientului pentru accesarea conturilor deschise la CEC Bank;
- PSD2 API-AccountsC: contine operatiile necesare dezvoltarii functionalitatilor AIS (se extrag date despre conturi cu limitarile specificate in consimtamantul clientului);

2.1 Descrierea fluxului pentru obtinere date conturi client



2.1.1 Transmisere solicitare pentru preluare acord accesare conturi client: creare consent.

Se apeleaza operatia POST /v1/consents din API-ul PSD2 API-Consent. In Header se completeaza obligatoriu:

- X-Request-ID
- TPP-Redirect-URI
- Tpp-Signature-Certificate.

In sectiunea „Security” va aparea butonul de Log In iar in urma logarii se va selecta automat aplicatia subscrisa produsului.

In Body nu trebuie transmise informatii. Continutul consentului va fi stabilit de catre client dupa autentificarea in sistemul bancii, in interfata de autorizare consent expusa de catre banca.

The screenshot displays the CEC Bank API documentation interface. On the left, a sidebar lists various API endpoints under the heading 'Overview'. The main content area is titled 'Create consent' and features a 'DETAILS' tab and a 'TRY IT' button. The 'POST' method is highlighted, with the URL 'https://api-test.cec.ro/cec/tpd/psd29c/v1/consents' shown. The 'Security' section includes an 'Identification' dropdown and an 'API Key' field with a 'Copy client ID' link. The 'Parameters' section shows 'Header' and 'Accept' fields, both containing 'application/json', and a 'Content-Type' field also containing 'application/json'. An 'X-Request-ID' field is present at the bottom, and a 'Generate' button is located next to it.

CEC Bank PRODUCTS v HOW IT WORKS CONTACT US EN

- Overview
- POST /v1/consents
- GET /v1/consents/(consenti...
- DELETE /v1/consents/(cons...
- GET /v1/consents/(consenti...
- POST /v1/consents/(consen...
- GET /v1/consents/(consenti...
- GET /v1/consents/(consenti...
- PUT /v1/consents/(consenti...
- GET /v1/d/consents/(conse...
- DELETE /v1/d/consents/(co...
- GET /v1/d/consents/(conse...
- Definitions

Create consent

DETAILS TRY IT

POST Production, Development: https://api-test.cec.ro/cec/tpd/psd29c/v1/consents

Security

Identification ^

API Key Copy client ID

TestAPP - Crede ^

Only subscribed credentials are selectable.

Parameters

Header ^

Accept

application/json

Content-Type

application/json

X-Request-ID

Generate

Response

✓ 201 Created

Body

Headers

```
{
  "consentStatus": "received",
  "consentId": "c9740868-b3de-11ef-a368-0a0800410000",
  "_links": {
    "scaOAuth": {
      "href": "https://api-test.cec.ro/cec/tpp/oauth/.well-known/oauthauthorization-server"
    },
    "self": {
      "href": "https://api-test.cec.ro/cec/tpp/psd29c/v1/consents/c9740868-b3de-11ef-a368-0a0800410000"
    },
    "status": {
      "href": "https://api-test.cec.ro/cec/tpp/psd29c/v1/consents/c9740868-b3de-11ef-a368-0a0800410000/status"
    }
  }
}
```

În structura de răspuns, se primește identificatorul resursei de tip consent nou creată “consentId”, precum și link-ul “scaOAuth” unde sunt furnizate metadatele serverului de autorizare OAuth 2.0 .

Aplicația TPP trebuie să redirecțeze PSU către pagina de autentificare a băncii, utilizând endpointul de autorizare furnizat de link-ul scaOAuth.



Exemplul de formare a URL-ului pentru Redirect poate fi găsit în atributul “Location” al headerului răspunsului operației POST /v1/consents:

Location :

<https://api-test.cec.ro/cec/tpp/oauthcec/oauth2/authorize?>

response_type=code

&scope=AIS:43a5a1a0-a456-11ec-b4e2c-00a0800270000

&redirect_uri=https://example.com/redirect

&client_id=28xxxxxxxxxxfe8a3

&code_challenge=<code challenge value>

&code_challenge_method=<code challenge method>

Înainte de utilizare, link-ul din headerul "Location" trebuie completat de către aplicația TPP cu valoarea parametrului code_challenge (PKCE challenge according to cryptographic RFC 7636 - <https://tools.ietf.org/html/rfc7636> used to prevent code injection attacks, code_challenge_method= "S256")

2.1.2 Autentificarea clientului în sistemul bancii

Aplicația TPP-ului redirecționează clientul la URL de autorizare format la pasul anterior, unde se deschide fereastra de logare în platforma de autentificare.

Clientul se poate loga folosind numele de utilizator din aplicația de Internet Banking-CEC Online și codul generat de dispozitivul de generare coduri sau de aplicația eToken.



2.1.3 Preluare acord client pentru consultare date conturi

Dupa logarea cu succes si identificarea clientului logat, apare fereastra de preluare acord pentru accesarea conturilor de catre aplicatia TPP.

In functie de permisiunile acordate de catre client pentru fiecare cont de plati din lista, aplicatia TPP-ului va putea vizualiza ibanurile conturilor si va avea acces la vizualizarea soldurilor, respectiv a listei de tranzactii

rcid=AI5d3a5a1a0-a456-11ec-b4e2-0a0800270000

Solicitare acord accesare conturi

Bine ati venit, testecapi

Aplicatia APP_Documentatie SOLICITA permisiunea de a accesa conturile dvs. deschise la CEC Bank cu scopul :

AIS: Vizualizare date conturi

☒ Selecteaza / Deselecteaza tot

Conturi

- ☒ RO42CECEQW9898bON9993644
- ☒ RO49CECER79292bON8883343
- ☒ RO12CECER792R8Ueb8883338
- ☒ RO03CECER792R75XV6635199
- ☒ RO46CECEQW93R8Ueb9357561

Balante

- ☒ RO42CECEQW9898bON9993644
- ☒ RO49CECER79292bON8883343
- ☒ RO12CECER792R8Ueb8883338
- ☒ RO03CECER792R75XV6635199
- ☒ RO46CECEQW93R8Ueb9357561

Tranzactii

- ☒ RO42CECEQW9898bON9993644
- ☒ RO49CECER79292bON8883343
- ☒ RO12CECER792R8Ueb8883338
- ☒ RO03CECER792R75XV6635199
- ☒ RO46CECEQW93R8Ueb9357561

Actionati [Permit Acces] daca sunteti de acord sau [Nu sunt de acord] daca nu sunteti de acord.

Apasand Permit Acces! veti fi redirectat la adresa <https://example.com/redirect>.

Nu sunt de acord!

Permit Acces!

Daca se apasa “Nu sunt de acord!” , la adresa de redirect a aplicatiei TPP se transmite “error=acces_denied”

2.1.4 Generare cod acces pentru aplicatie

In urma permitterii accesului la conturi de catre client, la adresa de redirect furnizata de aplicatia TPP, se transmite codul de acces pentru aplicatie (“code”).

https://example.com/redirect?code=AAIAIw82ZhTM7wAPbo6580McU6E9n4oJUznpUe8mw6KzB6owuInP5QD2z9NCMngf_xuk9dtI9W3xZIn64jnGLuFLCFUnq80DN

2.1.5 Obținere token de acces în vederea consultării conturilor

Aplicația TPP va furniza codul de acces de mai sus în schimbul unui token de acces la resurse (Bearer Token), prin apelarea metodei POST /oauth2/token de la URL-ul indicat în metadata “token_endpoint”, în scopul “AIS:consentId” (același scop conținut în codul de acces furnizat la pasul anterior)

Request body trebuie trimis în format *x-www-form-urlencoded* și trebuie să conțină parametrii de mai jos (valorile exemplificate corespund parametrilor in/out ai operației de autorizare prezentată în pasul anterior):

- grant_type=authorization_code
- client_id=28xxxxxxxxxxfe8a3
- code= AAIAIw82ZhTM7wAPbo6580McU6E9n4oJUznpUe8mw6KzB6owuInP5QD2z9NCMngf_xuk9dtl9W3xZln64jnGLuFLCFUnq80DN3CaEGTxfkwE5fp2I17DuxPacZovpRCGplsj7Vfo9lqphLkdxPDVKL3j
- redirect_uri= <https://example.com/redirect>
- scope= AIS:43a5a1a0-a456-11ec-b4e2c-00a0800270000
- code_verifier=ginfeftejisçu

curl --request POST \

```
--url https://api-test.cec.ro/cec/tpp/oauthcec/oauth2/token \  
--header 'accept: application/json' \  
--header 'content-type: application/x-www-form-urlencoded' \  
--header 'x-ibm-client-id: 28xxxxxxxxxxfe8a3\  
--data 'grant_type=authorization_code&client_id=28xxxxxxxxxxfe8a3&code=  
AAIAIw82ZhTM7wAPbo6580McU6E9n4oJUznpUe8mw6KzB6owuInP5QD2z9NCMngf_xuk9  
dtl9W3xZln64jnGLuFLCFUnq80DN3CaEGTxfkwE5fp2I17DuxPacZovpRCGplsj7Vfo9lqphLk  
dxPDVKL3j&redirect_uri= https://example.com/redirect&scope= AIS:a2308f60-76e3-11eb-  
9881-0a06001a0000&code_verifier=ginfeftejisçu'
```

200 OK

{

 "token_type": "bearer",

```

"access_token":
"AAIkMjg2Yjk1NmYtZDQxMS00OTM4LTljMGUtYmI1ODE1YWZlOGZlPNvUaB8KIeDg
PgFbjI7AANcFyG-HCnV-hiqPVlo17k5DjRoCB7PSv8--
qKI1JuneC52uXWAgU7iE1OA_NYC6JJTRYtYBi6I2DL88f4_uxormO0Bi6zBj6lld1D3rtNI9u
T0dUAL2WHk5L5VjhJFQ",

"expires_in": 3595,

"consented_on": 1614240924,

"scope": "AIS:43a5a1a0-a456-11ec-b4e2c-00a0800270000",

"refresh_token": "AAJzRQj3N2Wd-
3pb005516_i9ISl6ZL3Ut5n1w2gbh8YK5vxjb86zMQcwILT29Dq-
4ZNVhvcPBSr90uoemjU9LhUgkF0-dpHPTdShGuPJOWi6gCbfaX3PSFu-
oTgKQzReCKxIOxPldguuu5M7Xquy4NudJ7LDVWRxI52JBNpxtCGYQ",

"refresh_token_expires_in": 2682000

}

```

In raspunsul operatiei POST /oauth2/token, se gaseste valoarea access token necesara apelurilor API-urilor PSD2 API-AccountsC, PSD2 API-ConsentC si operatiei POST /v1/funds-confirmations din PSD2 API-PaymentsC. De asemenea, se precizeaza valoarea refresh_token, cu o perioada de valabilitate corespunzatoare valabilitatii consentului (max.180 zile), care poate fi utilizat pentru generarea unui nou acces_token fara implicarea PSU.

2.1.6 Obtinere refresh_token

Pentru a obtine un nou access_token valid in schimbul refresh_token-ului, se utilizeaza aceeaasi operatie POST /oauth2/token, dar cu grant_type=refresh_token, ca in exemplul de mai jos.

```

curl --request POST \
--url https://api-test.cec.ro/cec/tpp/oauthcec/oauth2/token \
--header 'accept: application/json' \
--header 'content-type: application/x-www-form-urlencoded' \
--header 'x-ibm-client-id: 28xxxxxxxxxxfe8a3\
--data 'grant_type=refresh_token&client_id=28xxxxxxxxxxfe8a3&refresh_token=
AAJzRQj3N2Wd-3pb005516_i9ISl6ZL3Ut5n1w2gbh8YK5vxjb86zMQcwILT29Dq-
4ZNVhvcPBSr90uoemjU9LhUgkF0-dpHPTdShGuPJOWi6gCbfaX3PSFu-
oTgKQzReCKxIOxPldguuu5M7Xquy4NudJ7LDVWRxI52JBNpxtCGYQ

```

2.1.7 Obținerea datelor despre conturi

Se apeleaza operatia GET /v1/accounts din API-ul PSD2-AccountsC, transmitand in header:

"x-ibm-client-id" : "client_id-ul generat la pasul de creare de aplicatie din api-ul de Inrolare Dinamica"

"x-Request-ID" : "id de forma: 123e4567-e89b-12d3-a456-426655440000"

"Authorization": "acces tokenul de tip Bearer obtinut la pasul anterior",

"Consent-ID": "valoarea consentId pentru vizualizare date conturi",

"TPP-Signature-Certificate": "certificat EIDAS al TPP cu rol PSP_AI"

The screenshot displays the CEC Bank PSD2 API-AccountsC 1.0.0 developer portal. The header includes the CEC Bank logo, navigation links (PRODUCTS, HOW IT WORKS, CONTACT US), and a language selector (EN). The main content area is titled 'PSD2 API-AccountsC 1.0.0'. On the left, a sidebar lists various API endpoints under 'Overview'. The main panel shows the 'getAccountList' endpoint details, including the GET method, production and development URLs, and security requirements for API Key and API Secret.

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PSD2 API-AccountsC 1.0.0

- Overview
- GET /v1/accounts
- GET /v1/d/accounts
- GET /v1/accounts/account...
- GET /v1/d/accounts/accou...
- GET /v1/accounts/account...
- GET /v1/d/accounts/accou...
- GET /v1/accounts/account...
- GET /v1/d/accounts/accou...
- GET /v1/accounts/account...
- GET /v1/d/accounts/accou...
- GET /v1/accounts/account...
- GET /v1/d/accounts/accou...
- GET /v1/card-accounts
- GET /v1/card-accounts/acc...
- GET /v1/card-accounts/acc...
- GET /v1/card-accounts/acc...
- Definitions

getAccountList

DETAILS **TRY IT**

GET **Production:** https://api-test.cec.ro/cec/tpp/psd29c/v1/accounts
Development:

Security Identification ^

API Key Copy client ID

TestAPP - Crede

Only subscribed credentials are selectable.

API Secret



Parameters

Header ^

Accept

application/json

X-Request-ID

Generate

2209d600-ce02-53f6-9096-09f33973748c

Consent-ID

Generate

8867797977268224

Digest

Generate

Is contained if and only if the "Signature" element is contained in ...

Signature

Generate

A signature of the request by the TPP on application level. This m...

TPP-Signature-Certificate

Generate

-----BEGIN CERTIFICATE-----xxEXAMPLExxxxxxxxEXAMPLExxxx...

PSU-IP-Address

Generate

Response

200 OK

Body

Headers

```
{
  "accounts": [
    {
      "resourceId": "25511978",
      "iban": "RO42CECEAG0202RON0007466",
      "currency": "RON",
      "product": "Cont curent - persoane fizice - LE
I",
      "cashAccountType": "CurrentAccount",
      "name": "421642",
      "balances": [
        {
          "balanceAmount": {
            "currency": "RON",
            "amount": 26.46
          },
          "balanceType": "closingBooked",
          "referenceDate": "2024-12-06"
        }
      ],
      "_links": {
        "balances": {
          "href": "/v1/accounts/25511978/balance
s"
        },
        "transactions": {
          "href": "/v1/accounts/25511978/transac
tions"
```

2.1.8 Obține detalii cont

CEC Bank

PRODUCTS ▾HOW IT WORKSCONTACT USEN

Back | API Products | PSD2-CEC-API-C | API Developer Portal | PSD2 API-AccountsC - API Developer Portal

PSD2 API-AccountsC1.0.0

Overview

- GET /v/accounts
- GET /v/d/accounts
- GET /v/accounts/{account-id}
- GET /v/d/accounts/{account-id}
- GET /v/accounts/{account-id}/card-accounts
- GET /v/d/accounts/{account-id}/card-accounts
- GET /v/card-accounts/{account-id}
- GET /v/d/card-accounts/{account-id}

Definitions

readAccountDetailsDETAILSTRY IT

GET

Production,
Development:

https://api-test.cec.ro/cec/tpp/psd29c/v1/accounts/{account-id}

Security

Identification

API KeyCopy client IDTestAPP - Credentials

Only subscribed credentials are selectable.

API Secret

Authorization

Authorization URLshttps://192.168.2.31:443/cec/tpp/oauthcec/oauth2/authorizeToken URLs

CEC Bank

PRODUCTS

HOW IT WORKS

CONTACT US

EN

Accept

application/json

X-Request-ID

Generate

Bad42a4c-abb5-54b5-a826-a184ecec797b

Consent-ID

Generate

7097487540092928

Digest

Generate

Is contained if and only if the "Signature" element is contained in ...

Signature

Generate

A signature of the request by the TPP on application level. This mi...

TPP-Signature-Certificate

Generate

-----BEGIN CERTIFICATE-----xxEXAMPLExxxxxxxxxxEXAMPLExxxxxx...

PSU-IP-Address

Generate

The forwarded IP Address header field consists of the correspondi...

PSU-IP-Port

Generate

The forwarded IP Port header field consists of the corresponding ...





PSU-Device-ID

Generate

UUID (Universally Unique Identifier) for a device, which is used by ...

PSU-Geo-Location

Generate

The forwarded Geo Location of the corresponding http request b...

Path



account-id*

Generate

6334995949908698

Query



withBalance

true



RESET

SEND

Response

✓ 200 OK

Body

Headers

```
{
  "accounts": [
    {
      "resourceId": "25511978",
      "iban": "RO42CECEAG0202RON0007466",
      "currency": "RON",
      "product": "Cont curent - persoane fizice - LE
I",
      "cashAccountType": "CurrentAccount",
      "name": "421642",
      "balances": [
        {
          "balanceAmount": {
            "currency": "RON",
            "amount": 26.46
          },
          "balanceType": "closingBooked",
          "referenceDate": "2024-12-06"
        }
      ],
      "_links": {
        "balances": {
          "href": "/v1/accounts/25511978/balance
s"
        },
        "transactions": {
          "href": "/v1/accounts/25511978/transac
tions"
```

Se apeleaza operatia GET /v1/accounts/{account-id} din API-ul PSD2-AccountsC astfel:

In header se trimit:

"x-ibm-client-id" : " client_id-ul generat la pasul de creare de aplicatie din api-ul de Inrolare Dinamica "

"x-Request-ID" : "id de forma: 123e4567-e89b-12d3-a456-426655440000"

"Authorization": "acces tokenul de tip Bearer obtinut la pasul anterior",

"Consent-ID": "valoarea consentId pentru vizualizare date conturi",

"TPP-Signature-Certificate": "certificat EIDAS al TPP cu rol PSP_AI"

Parametrii:

"account-id" : "Id-ul contului pentru care se cer detalii"

Response:

```
{
  "accounts": [
    {
      "resourceId": "25511978",
      "iban": "RO42CECEQW9898bON9993644",
      "currency": "RON",
      "product": "Cont curent - persoane fizice - LEI",
      "cashAccountType": "CurrentAccount",
      "name": "421642",
      "balances": [
        {
          "balanceAmount": {
            "currency": "RON",
            "amount": 320.02
          },
          "balanceType": "closingBooked",
          "referenceDate": "2022-03-16"
        }
      ],
      "links": {
        "balances": {
          "href": "/v1/accounts/25511978/balances"
        },
        "transactions": {
          "href": "/v1/accounts/25511978/transactions"
        }
      }
    }
  ]
}
```

2.1.9 Obținere balanta cont

CEC Bank

PRODUCTS ▾ HOW IT WORKS CONTACT US

EN ▾

Back | API Products | PSD2-CEC-APIC - API Developer Portal | PSD2 API-AccountsC - API Developer Portal

PSD2 API-AccountsC

1.0.0

- Overview
- GET /v1/accounts
- GET /v1/d/accounts
- GET /v1/accounts/{account-id}
- GET /v1/d/accounts/{account-id}
- GET /v1/accounts/{account-id}/balances**
- GET /v1/d/accounts/{account-id}/balances
- GET /v1/accounts/{account-id}/statements
- GET /v1/d/accounts/{account-id}/statements
- GET /v1/accounts/{account-id}/transactions
- GET /v1/d/accounts/{account-id}/transactions
- GET /v1/card-accounts
- GET /v1/card-accounts/{account-id}
- GET /v1/card-accounts/{account-id}/statements
- GET /v1/card-accounts/{account-id}/transactions
- Definitions

getBalances

DETAILS

TRY IT

GET

Production, <https://api-test.cec.ro/cec/tpp/psd29c/v1/accounts/{account-id}/balances>
Developmentes

Security

Identification

API Key

TestAPP - Crede

API Secret

Authorization

Copy client ID

Only subscribed credentials are selectable.

Authorization URLs

<https://192.168.2.31:443/cec/tpp/oauthcec/oauth2/authorize>

Token URLs

<PUBLIC>



Parameters

Header ^

Accept

application/json

X-Request-ID

Generate

c85c4804-978e-522e-8f58-a76ec074ef44

Consent-ID

Generate

6420072971108352

Digest

Generate

Is contained if and only if the "Signature" element is contained in ...

Signature

Generate

A signature of the request by the TPP on application level. This mi...

TPP-Signature-Certificate

Generate

-----BEGIN CERTIFICATE-----xxEXAMPLExxxxxxxEXAMPLExxxxx...

PSU-IP-Address

Generate



▼

PSU-Device-ID

Generate

UUID (Universally Unique Identifier) for a device, which is used by ...

PSU-Geo-Location

Generate

The forwarded Geo Location of the corresponding http request b...

Path ^

account-id*

Generate

5102600656365155

RESET

SEND

Response

✓ 200 OK

Body

Headers

```
{
  "account": {
    "iban": "RO42CECEAG0202RON0007466",
    "currency": "RON"
  },
  "balances": [
    {
      "balanceAmount": {
        "currency": "RON",
        "amount": "26.46"
      },
      "balanceType": "closingBooked",
      "referenceDate": "2024-12-06"
    }
  ]
}
```

Se apeleaza operatia GET /v1/accounts/{account-id}/balances din API-ul PSD2-AccountsC astfel:

In header se trimit:

"x-ibm-client-id" : "client_id-ul generat de aplicatia creata pe portal"

"x-Request-ID" : "id de forma: 123e4567-e89b-12d3-a456-426655440000"

"Authorization": "acces tokenul de tip Bearer obtinut la pasul anterior",

"Consent-ID": "valoarea consentId pentru vizualizare date conturi",

"TPP-Signature-Certificate": "certificat EIDAS al TPP cu rol PSP_AI"

Parametrii:

"account-id" : "Id-ul contului pentru care se cer detalii"

Response:

```
{
  "account": {
    "iban": "RO42CECEQW9898bON9993644",
    "currency": "RON"
  },
  "balances": [
    {
      "balanceAmount": {
        "currency": "RON",
        "amount": "320.02"
      },
      "balanceType": "closingBooked",
      "referenceDate": "2022-03-16"
    }
  ]
}
```

2.1.10 Obținere lista tranzactii pe cont



PRODUCTS ▾HOW IT WORKSCONTACT US

EN ▾

Back | API Products | PSD2-CEC-APIC - API Developer Portal | PSD2 API-AccountsC - API Developer Portal

PSD2 API-AccountsC

1.0.0

- Overview
- GET /v/accounts
- GET /v/d/accounts
- GET /v/accounts/{account-id}
- GET /v/d/accounts/{account-id}
- GET /v/accounts/{account-id}/balances
- GET /v/d/accounts/{account-id}/balances
- GET /v/accounts/{account-id}/transactions
- GET /v/d/accounts/{account-id}/transactions
- GET /v/accounts/{account-id}/statements
- GET /v/d/accounts/{account-id}/statements
- GET /v/card-accounts
- GET /v/card-accounts/{account-id}
- GET /v/d/card-accounts/{account-id}
- GET /v/card-accounts/{account-id}/statements
- GET /v/d/card-accounts/{account-id}/statements
- Definitions

getTransactionList

DETAILSTRY IT

GET

Production, <https://api-test.cec.ro/cec/tpp/psd29c/v1/accounts/{account-id}/transactions>
Development

Security

Identification ^

API Key

Copy client ID

TestAPP - Crede ▾

Only subscribed credentials are selectable.

API Secret

Authorization ^

Authorization URLs

<https://192.168.2.31:443/cec/tpp/oauthcec/oauth2/authorize>

Token URLs



Parameters

Header ^

Accept

application/json

X-Request-ID

Generate

c85c4804-978e-522e-8f58-a76ec074ef44

Consent-ID

Generate

6420072971108352

Digest

Generate

Is contained if and only if the "Signature" element is contained in ...

Signature

Generate

A signature of the request by the TPP on application level. This m...

TPP-Signature-Certificate

Generate

-----BEGIN CERTIFICATE-----xxEXAMPLExxxxxxxxxxEXAMPLExxxx...

PSU-IP-Address

Generate



The forwarded Geo Location of the corresponding http request b...

Path ^

account-id*

Generate

5610580470623499

Query ^

bookingStatus*

booked ▾

dateFrom

07/08/2024 📅

dateTo

07/10/2024 📅

entryReferenceFrom

Generate

jesdearfumunef

deltaList

withBalance

true ▾

Response

✓ 200 OK

Body

Headers

```
{
  "account": {
    "iban": "RO42CECEAG0202RON0007466"
  },
  "transactions": {
    "booked": [
      {
        "transactionId": "1566614557",
        "creditorName": "",
        "creditorAccount": {
          "iban": ""
        },
        "transactionAmount": {
          "currency": "RON",
          "amount": -102.59
        },
        "bookingDate": "2024-12-06",
        "valueDate": "2024-12-06",
        "remittanceInformationUnstructured": "Capitalizare dobanda-Achitare dobanda neta la scadenta din cont curent pentru contractul nr 207493400"
      },
      {
        "transactionId": "1566614556",
        "creditorName": "",
        "creditorAccount": {
          "iban": ""
        }
      }
    ]
  }
}
```

Se apeleaza operatia GET /v1/accounts/{account-id}/transactions din API-ul PSD2-AccountsC astfel:

In header se trimit:

"x-ibm-client-id" : "client_id-ul generat de aplicatia creata pe portal"

"x-Request-ID" : "id de forma: 123e4567-e89b-12d3-a456-426655440000"

"Authorization": "acces tokenul de tip Bearer obtinut la pasul anterior",

"Consent-ID": "valoarea consentId pentru vizualizare date conturi",

"TPP-Signature-Certificate": "certificat EIDAS al TPP cu rol PSP_AI"

Parametrii:

"bookingStatus" : poate fi: "booked", "pending", "both"

"dateFrom": "data inceput ieterval cautare tranzactii"

"dateTo": "data sfarsit ieterval cautare tranzactii"

"account-id" : "Id-ul contului pentru care se cer detalii"

Raspuns:

```
{
  "account": {
    "iban": "RO42CECEQW9898bON9993644"
  },
  "transactions": {
    "booked": [
      {
        "transactionId": "1174425360",
        "creditorAccount": {},
        "transactionAmount": {
          "currency": "RON",
          "amount": -19.8
        },
        "bookingDate": "2021-10-10",
        "valueDate": "2021-10-10",
        "remittanceInformationUnstructured": "Sqpytqlyzqru torqntq-
Qsxytqru torqntq nutq lq ssqtuntq tyn sont surunt pentru sontrqstul nr 894414336"
      },
      {
        "transactionId": "1174425359",
        "creditorAccount": {},
        "transactionAmount": {
          "currency": "RON",
          "amount": -2.2
        },
        "bookingDate": "2021-10-10",
        "valueDate": "2021-10-10",
        "remittanceInformationUnstructured": "Plqtq ympozyt-
Plqtq ympozyt lq ssqtuntq tyn sont surunt pentru sontrqstul nr 894414336"
      },
      {
        "transactionId": "1174425358",
        "debtorAccount": {},

```

```
"transactionAmount": {  
  "currency": "RON",  
  "amount": 22  
},  
"bookingDate": "2021-10-10",  
"valueDate": "2021-10-10",  
"remittanceInformationUnstructured": "Sqpytqlyzqru torqntq-  
Sqpytqlyzqru torqntq rrutq lq ssqtuntq yn sont surunt puntru sontrqstul nr 894414336"  
},
```

2.1.11 Obținere detalii tranzactie



PRODUCTS ▾HOW IT WORKSCONTACT US

EN ▾

Back | API Products | PSD2-CEC-APIC - API Developer Portal | PSD2 API-AccountsC - API Developer Portal

PSD2 API-AccountsC

1.0.0

- Overview
- GET /v/accounts
- GET /v/d/accounts
- GET /v/accounts/{account-id}
- GET /v/d/accounts/{account-id}
- GET /v/accounts/{account-id}/transactions
- GET /v/d/accounts/{account-id}/transactions
- GET /v/accounts/{account-id}/card-accounts
- GET /v/d/accounts/{account-id}/card-accounts
- GET /v/accounts/{account-id}/card-accounts/{card-account-id}
- GET /v/d/accounts/{account-id}/card-accounts/{card-account-id}
- GET /v/accounts/{account-id}/card-accounts/{card-account-id}/transactions
- GET /v/d/accounts/{account-id}/card-accounts/{card-account-id}/transactions
- Definitions

getTransactionDetails

DETAILS

TRY IT

GET

Production, <https://api-test.cec.ro/cec/tpp/psd29c/v1/accounts/{account-id}/transactions/{resourceId}>
Development: [https://api-test.cec.ro/cec/tpp/psd29c/v1/accounts/{account-id}/transactions/{resourceId}](#)

Security

Identification

API Key

TestAPP - Crede

Copy client ID

Only subscribed credentials are selectable.

API Secret

Authorization

Authorization URLs

<https://192.168.2.31:443/cec/tpp/oauthcec/oauth2/authorize>

Token URLs



PRODUCTS ▾HOW IT WORKSCONTACT US

EN ▾

Parameters

Header

Accept

application/json

X-Request-ID

Generate

c85c4804-978e-522e-8f58-a76ec074ef44

Consent-ID

Generate

6420072971108352

Digest

Generate

Is contained if and only if the "Signature" element is contained in ...

Signature

Generate

A signature of the request by the TPP on application level. This mi...

TPP-Signature-Certificate

Generate

-----BEGIN CERTIFICATE-----xxxEXAMPLExxxxxxxxxxEXAMPLExxxxx...

PSU-IP-Address

Generate

The forwarded Geo Location of the corresponding http request b...

Path

^

account-id*

Generate

4903051341521048

resourceId*

Generate

6466182968246272

RESET

SEND

Response

✓ 200 OK

Body

Headers

```
{
  "transactions": {
    "booked": [
      {
        "transactionId": "1444173462",
        "creditorName": "",
        "creditorAccount": {
          "iban": ""
        },
        "transactionAmount": {
          "currency": "RON",
          "amount": -271.46
        },
        "bookingDate": "2023-10-11",
        "valueDate": "2023-10-11",
        "remittanceInformationUnstructured": "Capi-  
talizare dobanda-Achitare dobanda neta la scadenta din con-  
t curent pentru contractul nr 209304160"
      }
    ]
  },
  "account": {
    "iban": "RO42CECEAG0202RON0007466"
  }
}
```

Se apeleaza operatia GET /v1/accounts/{account-id}/transactions/{resourceId} din API-ul PSD2-AccountsC astfel:

In header se trimit:

"x-ibm-client-id" : "client_id-ul generat de aplicatia creata pe portal"

"x-Request-ID" : "id de forma: 123e4567-e89b-12d3-a456-426655440000"

"Authorization": "acces tokenul de tip Bearer obtinut la pasul anterior",

"Consent-ID": "valoarea consentId pentru vizualizare date conturi",

"TPP-Signature-Certificate": "certificat EIDAS al TPP cu rol PSP_AI"

Parametrii:

"account-id" : "Id-ul contului pentru care se cer detalii"

"resourceId": "Id-ul tranzactiei"

Response:

```
{
  "transactions": {
    "booked": [
      {
        "transactionId": "1174425360",
        "creditorAccount": {},
        "transactionAmount": {
          "currency": "RON",
          "amount": -19.8
        },
        "bookingDate": "2021-10-10",
        "valueDate": "2021-10-10",
        "remittanceInformationUnstructured": "Sqpytqlyzqru torqntq-
Qsxytqr torqntq nutq lq ssqtuntq tyn sont surunt pentru sontrqstul nr 894414336"
      },
    ],
  },
}
```

```

    {
      "debtorName": "",
      "debtorAccount": {
        "iban": ""
      },
      "transactionAmount": {}
    }
  ],
  "account": {
    "iban": "RO42CECEQW9898bON9993644"
  }
}

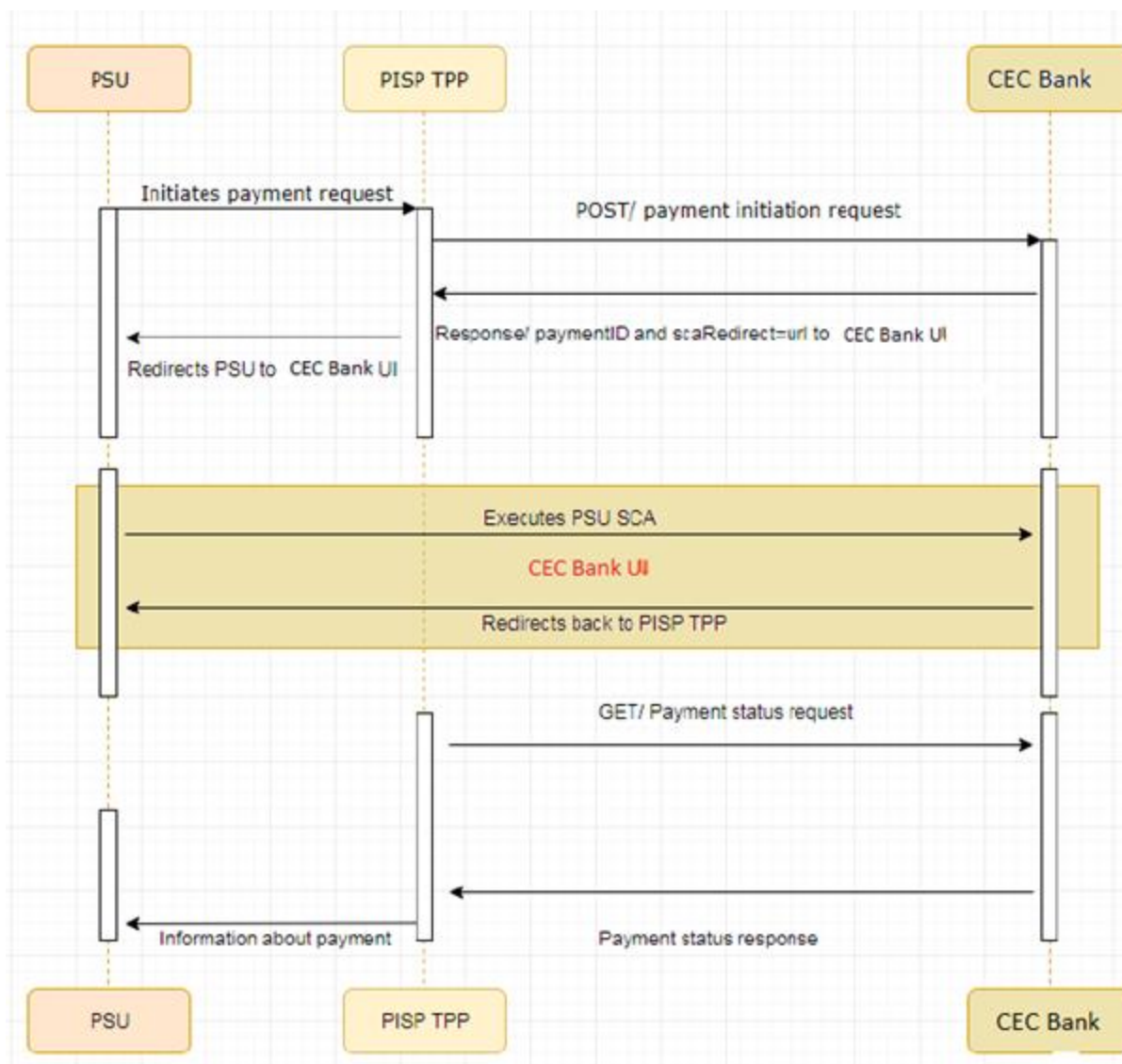
```

2.2 Inițierea și autorizarea plăților utilizând operațiile serviciului PSD2 API-PaymentsC

Serviciul PSD2 API-PaymentsC poate fi utilizat de TPP cu rol PISP (certificat EIDAS care include rolul PSP_PI) pentru a iniția plăți în numele unui client.

Se presupune că datele despre contul debitor implicat în tranzacție au fost obținute anterior, de obicei prin utilizarea operației GET /v1/accounts din serviciul PSD2 API-AccountsC.

Diagrama fluxului de inițiere/procesare plată este prezentată în figura de mai jos:



In flux se disting urmatorii pasi:

1. Clientul (PSU) solicita initierea platii in aplicatia TPP. Aplicatia TPP-ului utilizeaza operatia POST /v1/{payment-service}/{payment-product} pentru a transmite catre Banca datele platii solicitate de client.
2. Serviciul Bancii verifica corectitudinea datelor si memoreaza datele platii, in raspunsul returnat aplicatiei TPP fiind precizat identificatorul platii si link-ul scaOAuth (utilizat pentru determinarea URL-ului interfetei expuse de banca pentru autorizarea platii).
3. Aplicatia TPP redirecteaza clientul catre interfața de autorizare expusa de banca.
4. In interfața CEC Bank Authorization Server, clientul este autentificat in sistemul bancii in baza credentialelor de logare in aplicatia Internet Banking-CEC Online.

5. După autentificarea reușită clientul își dă acordul pentru procesarea plății sau o poate rejecta.
6. Clientul este redirecționat către aplicația TPP. Dacă plata a fost autorizată de către client, la adresa de redirecționare a aplicației TPP se trimite un cod care poate fi utilizat de aplicația TPP pentru obținerea token-ului de accesare a stării/datelor plății.
7. Aplicația TPP obține token pentru accesarea datelor și stării plății. Pentru verificarea stării plății se folosește operația GET `/v1/{payment-service}/{payment-product}/{paymentId}/status`.
8. Serviciul băncii returnează starea plății către aplicația TPP, care o afișează clientului.

Exemplificare flux:

2.2.1 Operația POST

`/v1/{payment-service}/{payment-product}` se poate utiliza cu valorile *payment-service=payments* și *payment-product=sepa-credit-transfer*, iar datele plății se trimit în format JSON. Este obligatorie transmiterea parametrilor TPP-Redirect-URI, X-IBM-Client-Id, X-Request-ID și TPP-Signature-Certificate în header-ul solicitării.

În flux parametrul `debtorAccount` este opțional. Se poate alege opțiunea de a se introduce în body-ul de request sau se poate selecta în pagina de autorizare dacă nu este trimis în body.



PSD2 API-PaymentsC

2.0.0

● Overview

- POST /v1/{payment-ser...
- GET /v1/{payment-service}/...
- DELETE /v1/{payment-servi...
- GET /v1/d/{payment-servic...
- DELETE /v1/d/{payment-se...
- GET /v1/{payment-service}/...
- GET /v1/d/{payment-servi...
- POST /v1/{payment-service...
- GET /v1/{payment-service}/...
- GET /v1/{payment-service}/...
- PUT /v1/{payment-service}/...
- POST /v1/{payment-service...
- GET /v1/{payment-service}/...
- GET /v1/{payment-service}/...
- PUT /v1/{payment-service}/...
- POST /v1/funds-confirmati...
- POST /v1/d/funds-confirma...
- Definitions

initiatePayment

DETAILS

TRY IT

POST

Production, <https://api-test.cec.ro/cec/tpp/psd29p/v1/{payment-service}/{payment-Development;product}>

Security

Identification

API Key

Copy client ID

TestAPP - Crede

Only subscribed credentials are selectable.

Parameters

Header

Accept

application/json

Content-Type

application/json

● Definitions



application/json

Content-Type

application/json

X-Request-ID

Generate

c5271314-0f22-5fe4-89fd-9f6c9efb23dd

PSU-IP-Address

Generate

251.172.186.118

Digest

Generate

Is contained if and only if the "Signature" element is contained in ...

Signature

Generate

A signature of the request by the TPP on application level. This mi...

TPP-Signature-Certificate

Generate

-----BEGIN CERTIFICATE-----xxxEXAMPLExxxxxxxxxxEXAMPLExxxxx...

PSU-ID

Generate

Client ID of the PSU in the ASPSP client interface. Might be mand...

PSU-ID Type



Path ^

payment-service*

payments



payment-product*

sepa-credit-tran



Body ^

body

Generate

generated

```
{
  "instructedAmount": {
    "currency": "RON",
    "amount": "3.50"
  }
}
```

RESET

SEND

Response

✓ 201 Created

Body

Headers

```
{
  "transactionStatus": "RCVD",
  "paymentId": "d9a7b868-b3e0-11ef-9a7b-0a0800410000",
  "_links": {
    "scaOAuth": {
      "href": "https://api-test.cec.ro/cec/tpp/oauth/.well-known/oauthauthorization-server"
    },
    "self": {
      "href": "v1/payments/sepa-credit-transfers/d9a7b868-b3e0-11ef-9a7b-0a0800410000"
    },
    "status": {
      "href": "v1/payments/sepa-credit-transfers/d9a7b868-b3e0-11ef-9a7b-0a0800410000/status"
    }
  }
}
```

In raspuns se indica starea “RCVD” (tranzactie inregistrata in vederea autorizarii), referinta platii-paymentId, precum si linkul scaOAuth care trebuie utilizat pentru determinarea endpoint de autorizare plata, pe baza metadatelor serverului de autorizare OAuth 2.0.

2.2.2 Aplicatia TPP trebuie sa redirecteze PSU catre pagina de autentificare a bancii

utilizand endpointul de autorizare furnizat de link-ul scaOAuth.



```
{
  "issuer": "https://api-test.cec.ro/",
  "authorization_endpoint": "https://api-test.cec.ro/cec/tpp/oauthcec/oauth2/authorize",
  "token_endpoint": "https://api-test.cec.ro/cec/tpp/oauthcec/oauth2/token",
  "response_types_supported": [
    "code",
    "none"
  ],
  "response_modes_supported": [
    "fragment",
    "form_post"
  ],
  "grant_types_supported": [
    "authorization_code"
  ],
  "id_token_signing_alg_values_supported": [
    "RS256"
  ],
  "id_token_encryption_alg_values_supported": [
    ""
  ],
  "id_token_encryption_enc_values_supported": [
    ""
  ],
  "poc": "https://api-test.cec.ro/cec/",
  "name": "OAuthCEC",
  "registration_endpoint": "https://apiportal-test.cec.ro/cec/tpp/"
}
```

Exemplul de formare a URL-ului pentru Redirect poate fi gasit in atributul “Location” al headerului raspunsului operatiei POST /v1/{payment-service}/{payment-product}:

Location :

<https://api-test.cec.ro/cec/tpp/oauthcec/oauth2/authorize?>

response_type=code

&scope=PIS:5d935a04-7756-11eb-a2f7-0a06001a0000

&redirect_uri=https://example.com/redirect

&client_id=286xxxxxxxxxxxxxxxxxxxxfe8a3

&code_challenge=<code challenge value>

2.2.3 Aplicatia TPP redirecteaza clientul catre URL-ul format la pct.2.2.2

unde se deschide ecranul de autentificare client in sistemul bancii. Clientul este autentificat de banca in baza userului definit in aplicatia de Internet Banking-CECOnline si a codului de acces generat de dispozitivul fizic pe care-l detine sau de aplicatia eToken instalata pe telefonul mobil



2.2.4 Daca se autentifica cu succes, clientul poate vizualiza datele platii initiate din aplicatia TPP.

In cazul in care s-a transmis ibanul in parametrul <debtorAccount> acesta este afisat in zona <Iban Cont Platitor>.(vezi figura de mai jos)



Identificator plata	5d935a04-7756-11eb-a2f7-0a06001a0000
Suma de plata	100.00 RON
Iban Cont platitor	RO42CECEQW9898bON9993644
Denumire Beneficiar	Creditor Name
Iban Cont beneficiar	RO51RZBR7531710377217771433
Detalii plata	test description

In cazul in care nu s-a completat la initierea platii parametrul <debtorAccount> in fereastra de autorizare se poate selecta dintr-o lista.Lista se completeaza cu toate iban-urile din care se poate efectua plata.(vezi figura de mai jos)

CEC Bank

Confirmare Plata din cont deschis la CEC Bank
initiată din aplicația "Sandbox dev"

Pentru a confirma plata cu datele de mai jos acționați "Confirm plata!".

Identificator plata	431fb6b2-e059-11ee-9b61-0a1200740000
Suma de plata	3.50 RON
Iban Cont platitor	RO42CECEQW9898bON9993644
Denumire Beneficiar	RO42CECEQW9898bON9993644 RO49CECER79292bON8883343
Iban Cont beneficiar	DE02100100109307118603
Detalii plata	Ref Number Merchant

Refuz plata!

Confirm plata!

Puteți autoriza plata numai dacă sunteți utilizator al serviciului Internet Banking-CECOnline.

Poate autoriza plata prin acționarea butonului "Confirm plata!" sau o poate anula prin acționarea butonului "Refuz plata!"

api-test.cec.ro says

Plata a fost trimisă către procesare. Pentru mai multe informații, verificați statusul plății.

OK

Confirmare Plata din cont deschis la CEC Bank
initiată din aplicația "AppTestTpp1"

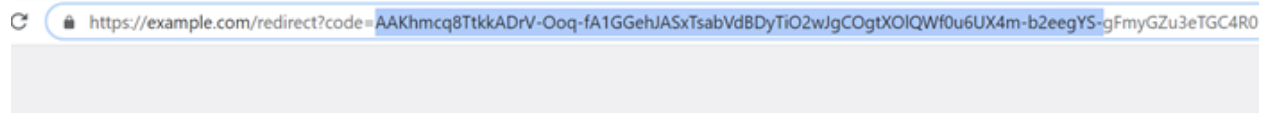
Pentru a confirma plata cu datele de mai jos acționați "Confirm plata!".

Identificator plata	5d935a04-7756-11eb-a2f7-0a06001a0000
Suma de plata	100.00 RON
Iban Cont platitor	RO42CECEQW9898bON9993644
Denumire Beneficiar	Creditor Name
Iban Cont beneficiar	RO51RZBR7531710377217771433
Detalii plata	test description

Refuz plata!

Confirm plata!

2.2.5 Daca plata a fost autorizata de catre client, la adresa de redirect a aplicatiei TPP se trimite un cod care poate fi utilizat de aplicatia TPP pentru obtinere token de accesare a starii platii.



2.2.6 Aplicatia TPP va furniza codul de acces de mai sus in schimbul unui token de access la datele platii (Bearer Token)

prin apelarea metodei POST `/oauth2/token` de la URL-ul indicat in metadata "token_endpoint", in scopul "PIS:paymentId" (acelasi scop continut in codul de acces furnizat la pasul anterior)

Request body trebuie trimis in format *x-www-form-urlencoded* si trebuie sa contina parametrii de mai jos (valorile exemplificate corespund parametrilor in/out ai operatiei de autorizare prezentata in pasul anterior):

- grant_type=authorization_code
- client_id=28xxxxxxxxxxfe8a3
- code= AAKhmcq8TtkkADrV-Ooq-fA1GGehJASxTsabVdBdyTiO2wJgCOgtXOIQWf0u6UX4m-b2eegYS-gFmyGZu3eTGC4R0QGZls6fLVI2XrKjsgJlqwE9gd6cF5YxsxgLqWyCoU8sg_MhhedaRianFHhD6JPF
- redirect_uri= <https://example.com/redirect>
- scope= PIS:5d935a04-7756-11eb-a2f7-0a06001a0000
- code_verifier=ginfeftejiscu

200 OK

```
{ "token_type": "bearer",
```

```

"access_token":
"AAIkMjg2Yjk1NmYtZDQxMS00OTM4LTljMGUtYmI1ODE1YWZlOGZckcP8z5nf6w2H6
KjCNXCtdGSONM3-
wBIrrZcI6kSrgUMFmHWWeJL7jJ6V6TyF4IPrDJ5j7bYt_LBiRxZW_YkFIoN2qn1mHlqEjFFb
Epy2PxFpCn5RgruyLBdc8r5-0vnAB5q2ThhRWQzw8LJXIKw",

"expires_in": 3595,

"consented_on": 1614253740,

scope": "PIS:5d935a04-7756-11eb-a2f7-0a06001a0000",

"refresh_token": "AAJE8ZA8occf5oiHN6ImOYwlwLaTkXDVv9jO1xyNDe3JMRVXMod8e-
Q0Wfu0Q5TOLvDa5OW_4UqiMrhLSDa79xiwI-
7kplVeT_a57AclheDIftRzR1eDWJYohan34yutNrXMU7KY3XMe_rItRIQXSEzbs98FiMc_jU5
AlklZPXGQw",

"refresh_token_expires_in": 2682000

}

```

In raspunsul operatiei POST /oauth2/token, se gaseste valoarea access token necesara apelurilor celorlalte operatii din API-ul PSD2 API-PaymentsC. De asemenea, se precizeaza valoarea refresh_token, cu o perioada de valabilitate corespunzatoare valabilitatii consentului (max.90 zile), care poate fi utilizat pentru generarea unui nou acces_token fara implicarea PSU.

Pentru a obtine un nou access_token valid in schimbul refresh_token-ului, se utilizeaza aceeaasi operatie POST /oauth2/token, dar cu grant_type=refresh_token si completarea obligatorie a parametrilor client_id si refresh_token, ca in exemplul de mai jos.

```

curl --request POST \
--url https://api-test.cec.ro/cec/tpp/oauthcec/oauth2/token \
--header 'accept: application/json' \
--header 'content-type: application/x-www-form-urlencoded' \
--header 'x-ibm-client-id: 28xxxxxxxxxxfe8a3\
--data 'grant_type=refresh_token&client_id=28xxxxxxxxxxfe8a3&refresh_token
AAJE8ZA8occf5oiHN6ImOYwlwLaTkXDVv9jO1xyNDe3JMRVXMod8e-
Q0Wfu0Q5TOLvDa5OW_4UqiMrhLSDa79xiwI-
7kplVeT_a57AclheDIftRzR1eDWJYohan34yutNrXMU7KY3XMe_rItRIQXSEzbs98FiMc_jU5
AlklZPXGQw

```

2.2.7 Statusul platii

Se obtine cu operatia GET /v1/{payment-service}/{payment-product}/{paymentId}/status . In parametrul Authorization din header se introduce valoarea access_token obtinuta la pasul 7.



PRODUCTS ▾HOW IT WORKSCONTACT US

EN ▾

Back | API Products | PSD2-CEC-APIC - API Developer Portal | PSD2 API-PaymentsC - API Developer Portal

PSD2 API-PaymentsC

2.0.0

- Overview
- POST /v1/{payment-service}...
- GET /v1/{payment-service}/...
- DELETE /v1/{payment-servi}...
- GET /v1/d/{payment-servi}...
- DELETE /v1/d/{payment-se}...
- GET /v1/{payment-servi}...
- GET /v1/d/{payment-servi}...
- POST /v1/{payment-service}...
- GET /v1/{payment-service}/...
- GET /v1/{payment-service}/...
- PUT /v1/{payment-service}/...
- POST /v1/{payment-service}...
- GET /v1/{payment-service}/...
- GET /v1/{payment-service}/...
- PUT /v1/{payment-service}/...
- POST /v1/funds-confirmati...
- POST /v1/d/funds-confirma...
- Definitions

getPaymentInitiationStatus

DETAILSDetailsTRY IT

GET

Production, - https://api-test.cec.ro/cec/tpp/psd29p/v1/{payment-service}/{payment-Developmentproduct}/{paymentId}/status

Security

oauth

Identification

API Key

TestAPP - Crede

API Secret

Authorization



Parameters

Header ^

Accept

application/json

Content-Type

application/json

X-Request-ID

Generate

82ccc8d7-92f1-58dd-9e6e-57d22f332a02

Digest

Generate

Is contained if and only if the "Signature" element is contained in ...

Signature

Generate

A signature of the request by the TPP on application level. This mi...

TPP-Signature-Certificate

Generate

-----BEGIN CERTIFICATE-----xxxEXAMPLExxxxxxxxxxEXAMPLExxxxx...

PSU-IP-Address

Generate

38.122.104.38

PSU-IP-Port

Generate



PSU-Geo-Location

Generate

The forwarded Geo Location of the corresponding http request b...

Path ^

payment-service*

payments ▾

payment-product*

sepa-credit-tran ▾

paymentId*

Generate

4895873435697152

RESET

SEND

Response

✓ 200 OK

Body

Headers

```
{
  "transactionStatus": "ACCP"
}
```



Statusul platii poate fi (ISO 20022):

'RCVD': 'Received' - Payment initiation has been received by the receiving agent (status inainte de autorizare plata de catre client)

'ACCP': 'AcceptedCustomerProfile' - Preceding check of technical validation was successful. Customer profile check was also successful(status plata dupa autorizare de catre client).

'ACTC': 'AcceptedTechnicalValidation' - Authentication and syntactical and semantical validation are successful(plata verificata tehnic).

'ACSP': 'AcceptedSettlementInProgress' - All preceding checks such as technical validation and customer profile were successful and therefore the payment initiation has been accepted for execution (plata in curs de executie)

'ACSC': 'AcceptedSettlementCompleted' - Settlement on the debtor's account has been completed (suma de plata a fost debitata din contul platitorului)

'ACCC': 'AcceptedSettlementCompleted' - Settlement on the creditor's account has been completed (suma platita a fost inregistrata in contul creditorului)

'RJCT': 'Rejected' - Payment initiation or individual transaction included in the payment initiation has been rejected.(plata neautorizata de catre client)

'CANC': 'Cancelled'-Payment initiation has been cancelled before execution(plata refuzata de catre banca din motive diverse: lipsa disponibil, restrictii AML/Embargo, etc).

2.3 Serviciul de confirmare de fonduri –functionalitatea PIIS

Operatia care poate fi utilizata pentru confirmarea existentei unei sume in cont este POST /v1/funds-confirmations si este dezvoltata in API-ul PSD2 API-PaymentsC.

La apelul acestei operatii se solicita token de acces de tip bearer valabil pentru scopul “AIS:consentid”, unde identificatorul de acord (consentid) identifica un consent valid, dat de client pentru consultarea soldului respectivului cont.



PRODUCTS ▾HOW IT WORKSCONTACT US

EN ▾

Back | API Products | PSD2-CEC-APIC - API Developer Portal | PSD2 API-PaymentsC - API Developer Portal

PSD2 API-PaymentsC

2.0.0

- Overview
- POST /v1/payment-service...
- GET /v1/payment-service/...
- DELETE /v1/payment-servi...
- GET /v1/d/payment-servic...
- DELETE /v1/d/payment-se...
- GET /v1/payment-service/...
- GET /v1/d/payment-servic...
- POST /v1/payment-service...
- GET /v1(payment-service)/...
- GET /v1(payment-service)/...
- PUT /v1(payment-service)/...
- POST /v1(payment-service...
- GET /v1(payment-service)/...
- GET /v1(payment-service)/...
- PUT /v1(payment-service)/...
- POST /v1/funds-confir...**
- POST /v1/d/funds-confirma...
- Definitions

checkAvailabilityOfFunds

DETAILSDetailsTRY IT

POST

Production, <https://api-test.cec.ro/cec/tpp/psd29p/v1/funds-confirmations>
Development:

Parameters

Header

Accept

application/json

Content-Type

application/json

X-Request-ID*

Generate

a8e50151-ff46-5914-b0b9-9f983c8596c1

Consent-ID

Generate

This data element may be contained, if the payment initiation tra...

<PUBLIC>



Signature

Generate

Is contained if and only if the "Signature" element is contained in ...

Signature

Generate

A signature of the request by the TPP on application level. This mi...

TPP-Signature-Certificate

Generate

-----BEGIN CERTIFICATE-----xxxEXAMPLExxxxxxxxxxEXAMPLExxxxx...

Body

^

body*

Generate

generated

```
{
  "cardNumber": "6976843640995840",
  "account": {
    "iban": "FR7612345987650123456789014",
    "hban": "BARC12345612345678"
  }
}
```

RESET

SEND

Daca tokenul de acces nu corespunde scopului sau a expirat sau resursa de tip consent nu include contul pentru care se solicita confirmarea, se returneaza codurile de eroare 401 (UNAUTHORIZED), respectiv 403 (FORBIDDEN).

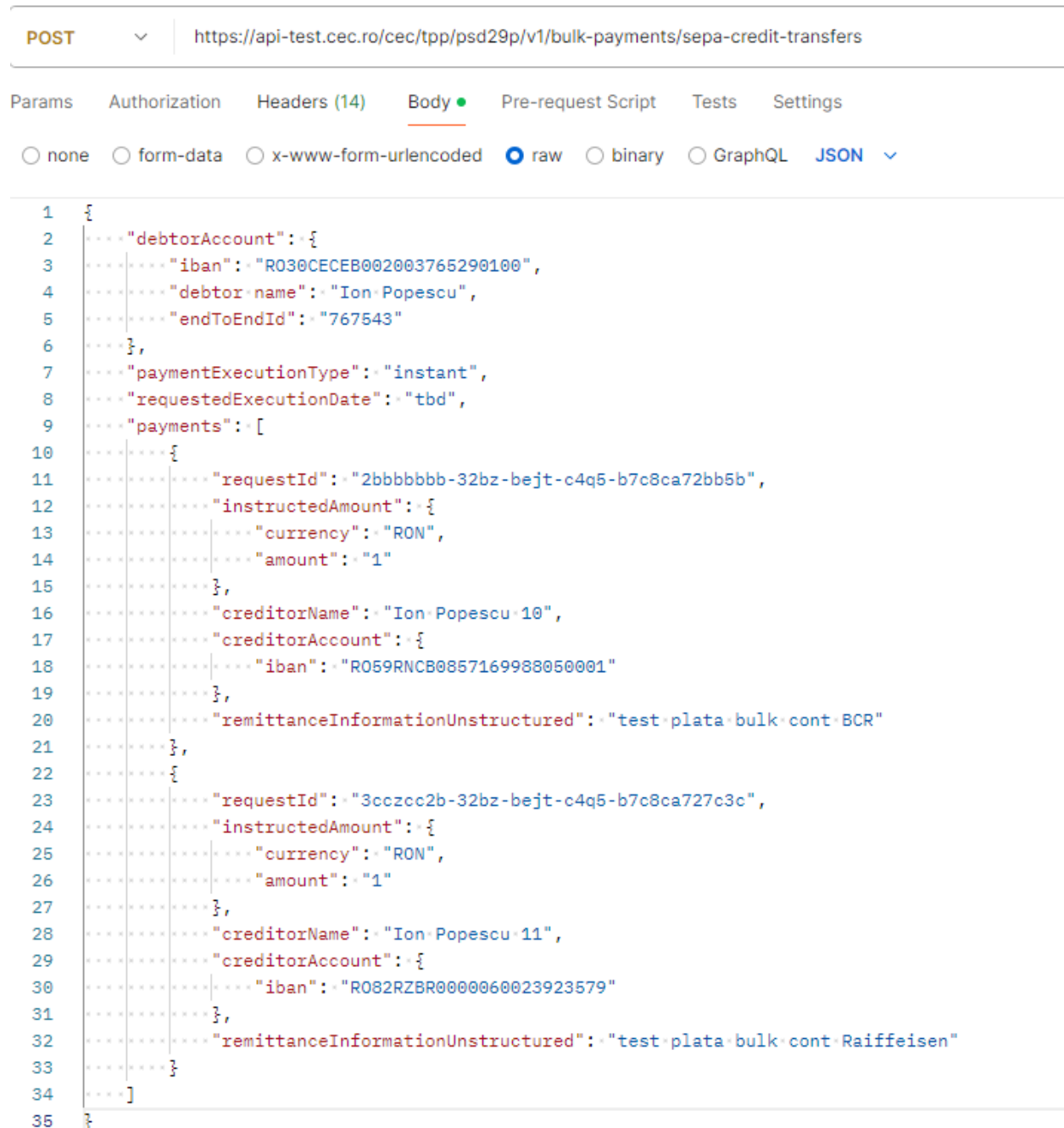
2.4 Initierea si autorizarea platilor bulk utilizand operatiile serviciului PSD2 API-PaymentsC

In flux se disting urmatoorii pasi:

2.4.1 Clientul (PSU) solicita initierea platii in aplicatia TPP.

Aplicatia TPP-ului utilizeaza operatia POST <https://api-test.cec.ro/tpp/psd29p/v1/bulk-payments/sepa-credit-transfer> pentru a transmite catre Banca datele platii solicitate de client.

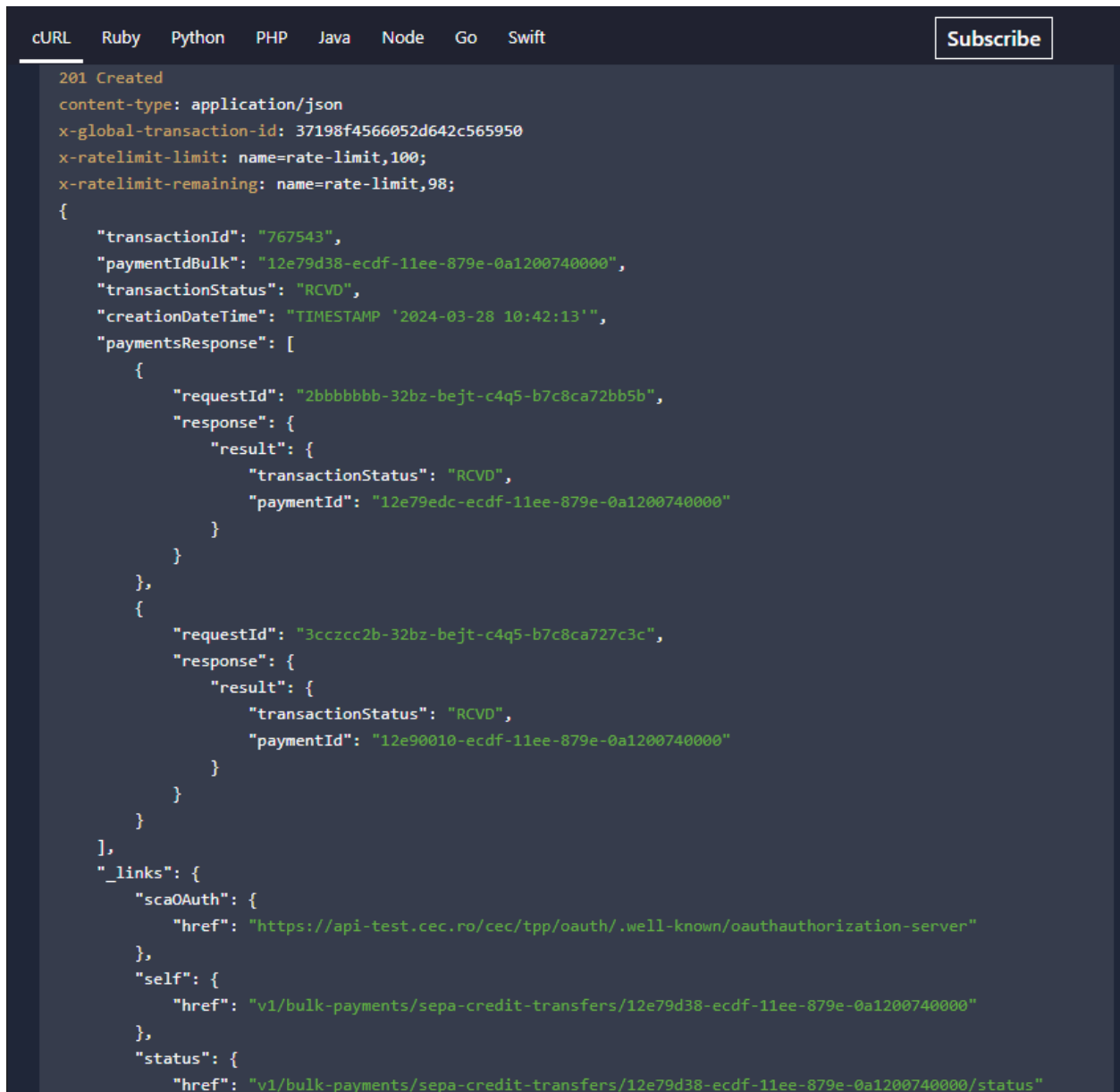
In imaginea de mai jos este prezentat un exemplu de apel utilizand POSTMAN precum si body-ul utilizat:



2.4.2 Serviciul Bancii verifica corectitudinea datelor si memoreaza datele platii

In raspunsul returnat aplicatiei TPP fiind precizat identificatorul platii si link-ul scaOAuth (utilizat pentru determinarea URL-ului interfetei expuse de banca pentru autorizarea platii).

In figura de mai jos se regaseste un exemplu de response la initierea platii daca se utilizeaza developer portalul <https://apiportal-test.cec.ro/cec/tpp>



The screenshot displays a REST client interface with a dark theme. At the top, there are tabs for different languages: cURL, Ruby, Python, PHP, Java, Node, Go, and Swift. A 'Subscribe' button is located in the top right corner. The main area shows a '201 Created' response with the following content:

```
content-type: application/json
x-global-transaction-id: 37198f4566052d642c565950
x-ratelimit-limit: name=rate-limit,100;
x-ratelimit-remaining: name=rate-limit,98;
{
  "transactionId": "767543",
  "paymentIdBulk": "12e79d38-ecdf-11ee-879e-0a1200740000",
  "transactionStatus": "RCVD",
  "creationDateTime": "TIMESTAMP '2024-03-28 10:42:13'",
  "paymentsResponse": [
    {
      "requestId": "2bbbbbbb-32bz-bejt-c4q5-b7c8ca72bb5b",
      "response": {
        "result": {
          "transactionStatus": "RCVD",
          "paymentId": "12e79edc-ecdf-11ee-879e-0a1200740000"
        }
      }
    },
    {
      "requestId": "3cczcc2b-32bz-bejt-c4q5-b7c8ca727c3c",
      "response": {
        "result": {
          "transactionStatus": "RCVD",
          "paymentId": "12e90010-ecdf-11ee-879e-0a1200740000"
        }
      }
    }
  ],
  "_links": {
    "scaOAuth": {
      "href": "https://api-test.cec.ro/cec/tpp/oauth/.well-known/oauthauthorization-server"
    },
    "self": {
      "href": "v1/bulk-payments/sepa-credit-transfers/12e79d38-ecdf-11ee-879e-0a1200740000"
    },
    "status": {
      "href": "v1/bulk-payments/sepa-credit-transfers/12e79d38-ecdf-11ee-879e-0a1200740000/status"
    }
  }
}
```

2.4.3 Aplicatia TPP redirecteaza clientul catre interfata de autorizare expusa de banca

care este aceeași ca la o plată singulară. În interfața CEC Bank Authorization Server, clientul este autentificat în sistemul băncii în baza credențialelor de logare în aplicația Internet Banking-CEC Online.

2.4.4 După autentificarea reușită clientul își dă acordul pentru procesarea plății bulk sau o poate rejecta.

CEC Bank

**Confirmare Plata din cont deschis la CEC Bank
inițiată din aplicația**

Iban Platitor RO30CECEB002003765290100

Pentru a confirma plata cu datele de mai jos acționați "Confirm plata!"

Suma de plata	Denumire Beneficiar	Iban Beneficiar	Detalii Plata
1.00 RON	Ion Popescu 10	RO59RNCB0857169988050001	test plata bulk cont BCR
1.00 RON	Ion Popescu 11	RO82RZBR0000060023923579	test plata bulk cont Raiffeisen

Refuz plata! **Confirm plata!**

Puteti autoriza plata numai daca sunteti utilizator al serviciului Internet Banking-CECOnline.

2.4.5 Clientul este redirectat catre aplicatia TPP.

Daca plata bulk a fost autorizata de catre client, la adresa de redirect a aplicatiei TPP se trimite un cod care poate fi utilizat de aplicatia TPP pentru obtinere token de accesare a starii/datelor platii.

2.4.6 Aplicatia TPP obtine token pentru accesarea datelor si starii platii bulk.

Pentru verificare stare plata bulk se foloseste operatia GET **`https://api-test.cec.ro/cec/tpp/psd29p/v1/d/{payment-service}/{payment-product}/{paymentId}`**

Serviciul bancii returneaza starea platii bulk catre aplicatia TPP, care o afiseaza clientului.(vezi figurile de mai jos)

In figura de mai jos se observa ca plata bulk are statusul "ACCP".

```

200 OK
content-type: application/json
x-global-transaction-id: 37198f4566052e981e69bf91
x-ratelimit-limit: name=rate-limit,100;
x-ratelimit-remaining: name=rate-limit,93;
{
  "transactionId": "767543",
  "paymentIdBulk": "12e79d38-ecdf-11ee-879e-0a1200740000",
  "transactionStatus": "ACCP",
  "creationDateTime": "TIMESTAMP '2024-03-28 10:42:13'",
  "debtorAccount": {
    "iban": "RO30CECEB002003765290100"
  },
  "paymentsResponse": [
    {
      "requestId": "2bbbbbbb-32bz-bejt-c4q5-b7c8ca72bb5b",
      "response": {
        "result": {
          "transactionStatus": "ACCP",
          "paymentId": "12e79edc-ecdf-11ee-879e-0a1200740000",
          "creditorAccount": {
            "iban": "RO59RNCB0857169988050001"
          },
          "creditorName": "Ion Popescu 10",
          "instructedAmount": {
            "currency": "RON",
            "amount": "1.00"
          },
          "remittanceInformationUnstructured": "test plata bulk cont BCR"
        }
      }
    },
    {
      "requestId": "3cczcc2b-32bz-bejt-c4q5-b7c8ca727c3c",
      "response": {
        "result": {
          "transactionStatus": "ACCP",
          "paymentId": "12e90010-ecdf-11ee-879e-0a1200740000"
        }
      }
    }
  ]
}

```

În urma executiei platilor bulk statusul se poate modifica acesta devenind "PART" ca urmare a executiei esuate a unei plati singulare din bulk ca in figura de mai jos:

Response

```
200 OK
content-type: application/json
x-global-transaction-id: 37198f4566052eff2d9c77b2
x-ratelimit-limit: name=rate-limit,100;
x-ratelimit-remaining: name=rate-limit,92;
{
  "transactionId": "767543",
  "paymentIdBulk": "12e79d38-ecdf-11ee-879e-0a1200740000",
  "transactionStatus": "PART",
  "creationDateTime": "TIMESTAMP '2024-03-28 10:42:13'",
  "debtorAccount": {
    "iban": "RO30CECEB002003765290100"
  },
  "paymentsResponse": [
    {
      "requestId": "2bbbbbbb-32bz-bejt-c4q5-b7c8ca72bb5b",
      "response": {
        "result": {
          "transactionStatus": "ACCP",
          "paymentId": "12e79edc-ecdf-11ee-879e-0a1200740000",
          "creditorAccount": {
            "iban": "RO59RNCB0857169988050001"
          },
          "creditorName": "Ion Popescu 10",
          "instructedAmount": {
            "currency": "RON",
            "amount": "1.00"
          },
          "remittanceInformationUnstructured": "test plata bulk cont BCR"
        }
      }
    },
    {
      "requestId": "3cczcc2b-32bz-bejt-c4q5-b7c8ca727c3c",
      "response": {
        "result": {
```

```

{
  "requestId": "3cczcc2b-32bz-bejt-c4q5-b7c8ca727c3c",
  "response": {
    "result": {
      "transactionStatus": "CANC",
      "paymentId": "12e90010-ecdf-11ee-879e-0a1200740000",
      "creditorAccount": {
        "iban": "RO82RZBR0000060023923579"
      },
      "creditorName": "Ion Popescu 11",
      "instructedAmount": {
        "currency": "RON",
        "amount": "1.00"
      },
      "remittanceInformationUnstructured": "test plata bulk cont Raiffeisen"
    }
  }
}
1
}

```

NOTA:

PART, ACSC – statusuri finale pentru o operatie de initiare plati bulk // status PART este prevazut in Berlin Group

Orice alt status pana la obtinerea acestora reprezinta status intermediar.

PART – cel putin o plata din bulk nu a fost finalizata cu succes.

ACSC- toate platile din bulk au fost finalizate cu succes.

PATC - plata necesita semnaturi suplimentare