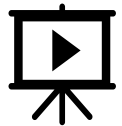


MATS GoTo Session #4



[Click here to watch the recording of the session](#)

EPEX SPOT Webinar
24 March 2025



Confidentiality disclaimer

All information disclosed during this webinar is strictly confidential and cannot be shared with any third party without the prior authorisation of EPEX SPOT.

Agenda

01 Welcome & Introduction

02 Feature Spotlight

- Zero-volume rule: linear bidding in MATS
- SDAC 15MTU in MATS: linear and block bidding with multiple duration

03 API Spotlight

- API 2FA principles
- API Conformance testing approach

04 Member testing and readiness

05 Q&A Session

Your panelists



Marko BEZBRADICA
MATS Project Manager



Antoine THIERS
Senior Key Account Manager



Audrey GIFFARD
Senior Marketing Manager



Jean-Marc POURNIN
API Customer Services Manager

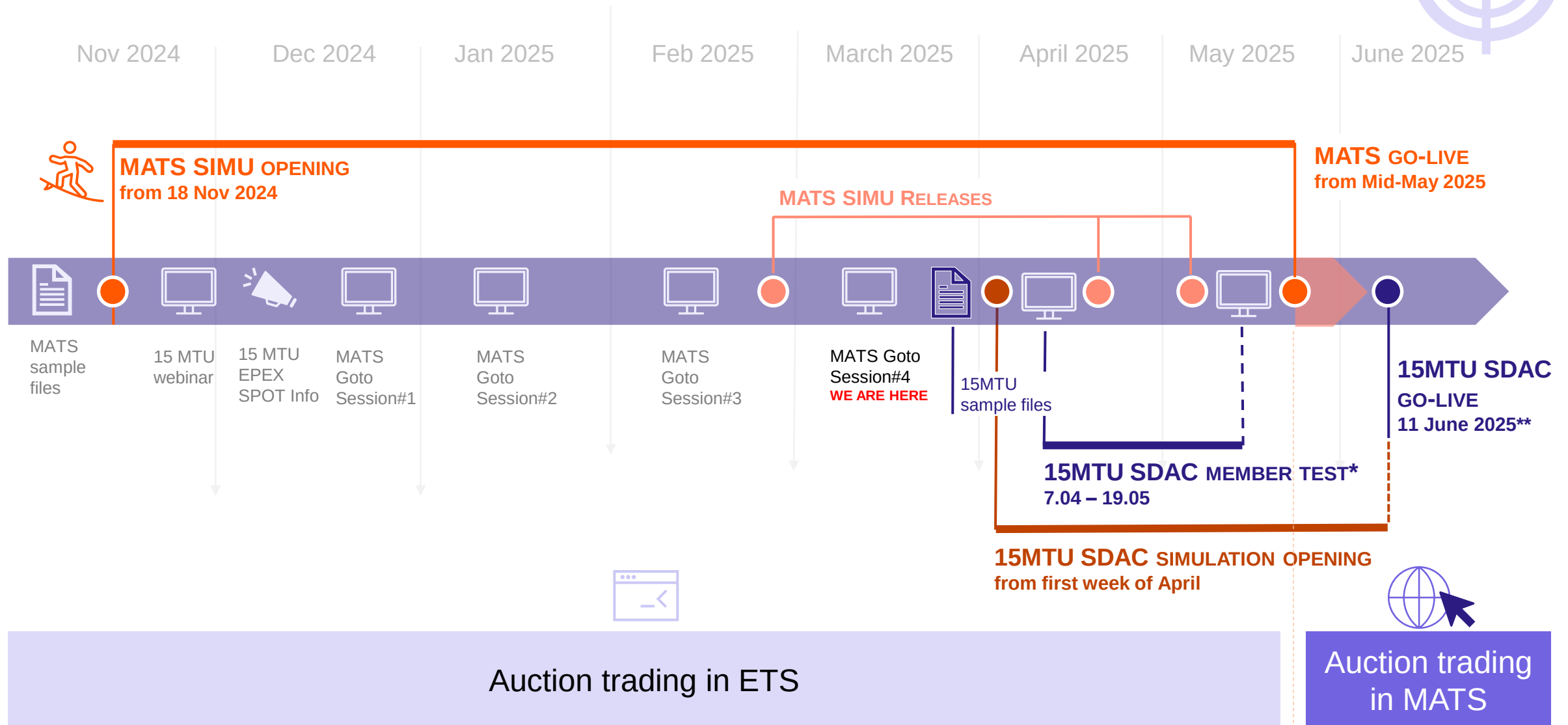
Also,
Matthieu NEAUPORT, MATS Product Owner
Luisa NEUBERT, Sales Assistant

Welcome & Introduction

01

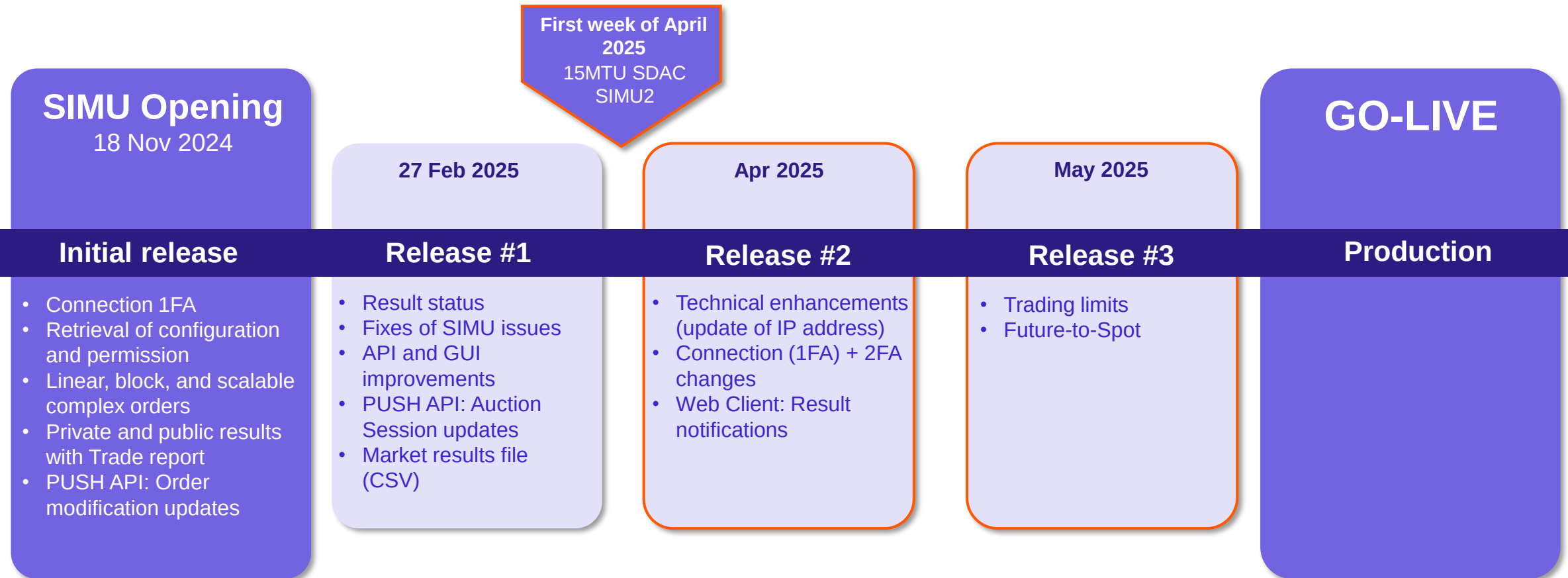


Timeline: 15MTU SDAC project and MATS



MATS Roadmap*

The road towards delivery of MATS Go-live (subject to successful testing)



Feature Spotlight

02



Zero volume rule



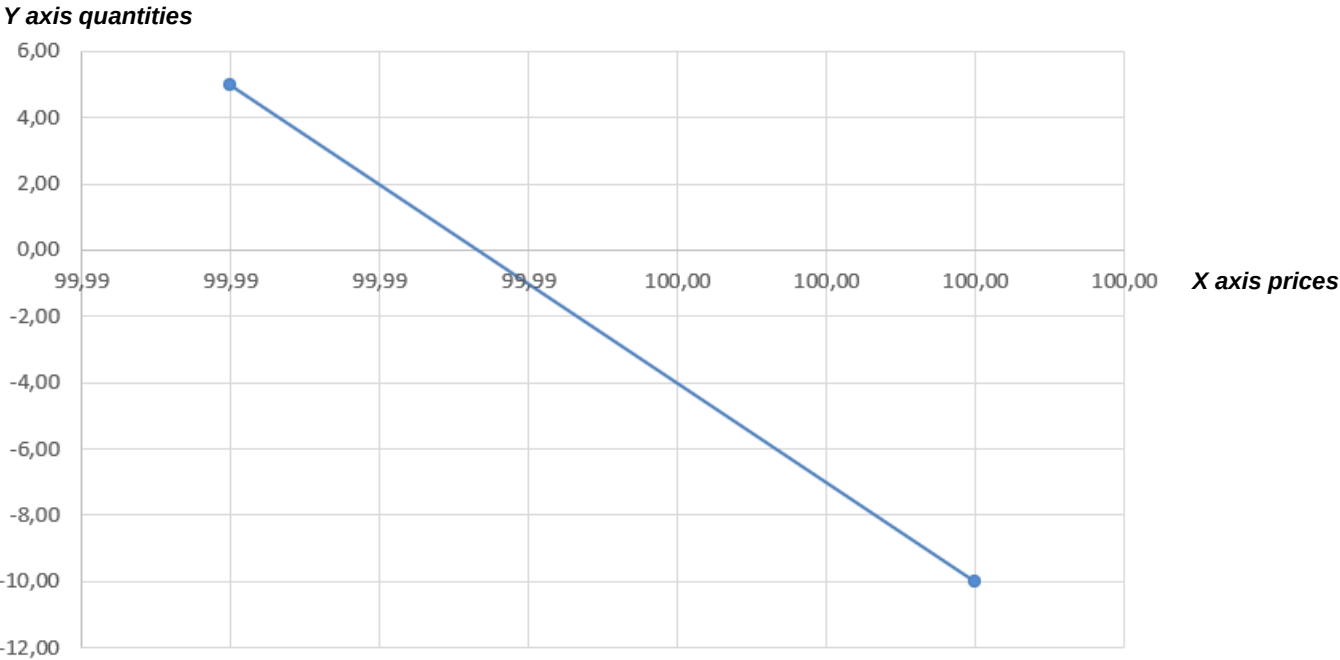
Zero volume rule

- › It increases algo performances
- › Market participants in control when switching from buy to sell
- › No change in terms of execution

- › Euphemia using exact price to execute orders
 - Exact price has up to 11 decimals

Current situation in ETS without the 0 volume rule

	€ -500.00	€ 99.99	€ 100.00	€ 4,000.00
1	10.0	5.0	-10.0	-10.0



Zero volume rule

With zero volume on buy side – First option

€ -500.00	€ 99.99	€ 99.99	€ 100.00	€ 4,000.00
10.0	5.0	0.0	-10.0	-10.0



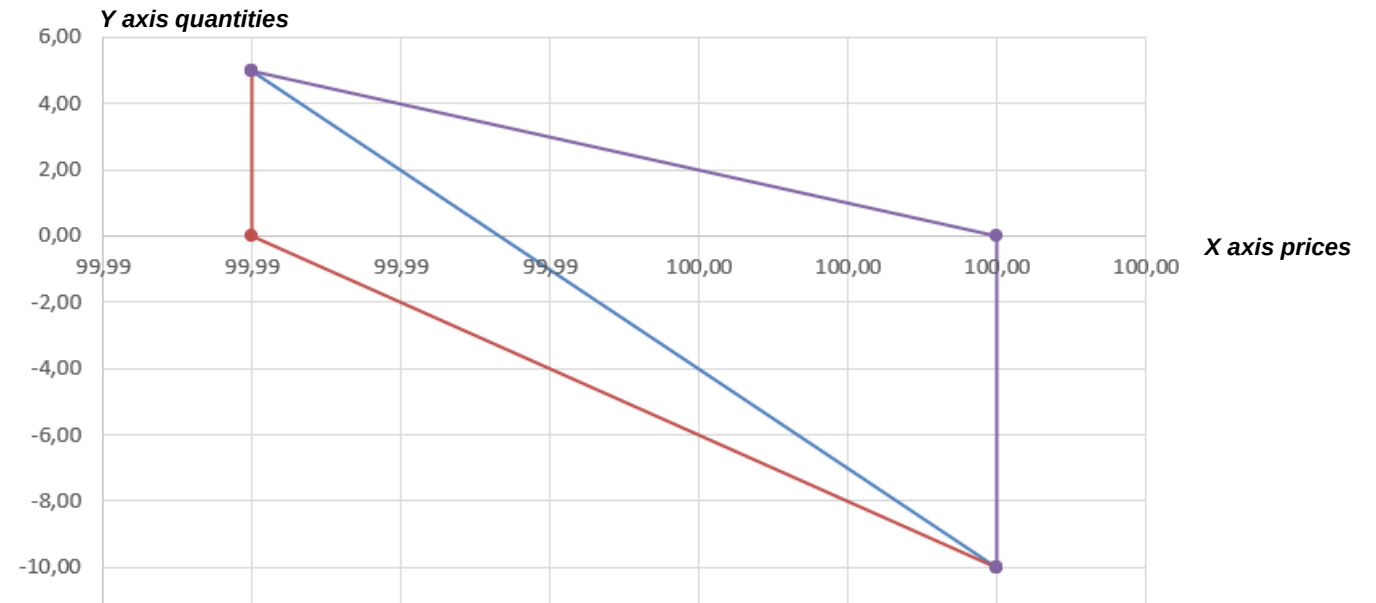
Zero volume rule

› With zero volume on sell side – Second option

€ -500.00	€ 99.99	€ 100.00	€ 100.00	€ 4,000.00
10.0	5.0	0.0	-10.0	-10.0

Sample files provided as part of supportive materials

- › 'LinearOrder_15min.xlsx' – Example of a 15min order
- › 'LinearOrder_30min.xlsx' – Example of a 30min order
- › 'LinearOrder_60min.xlsx' – Example of a 60min order



15MTU in MATS - Demo



15MTU SDAC at a glance

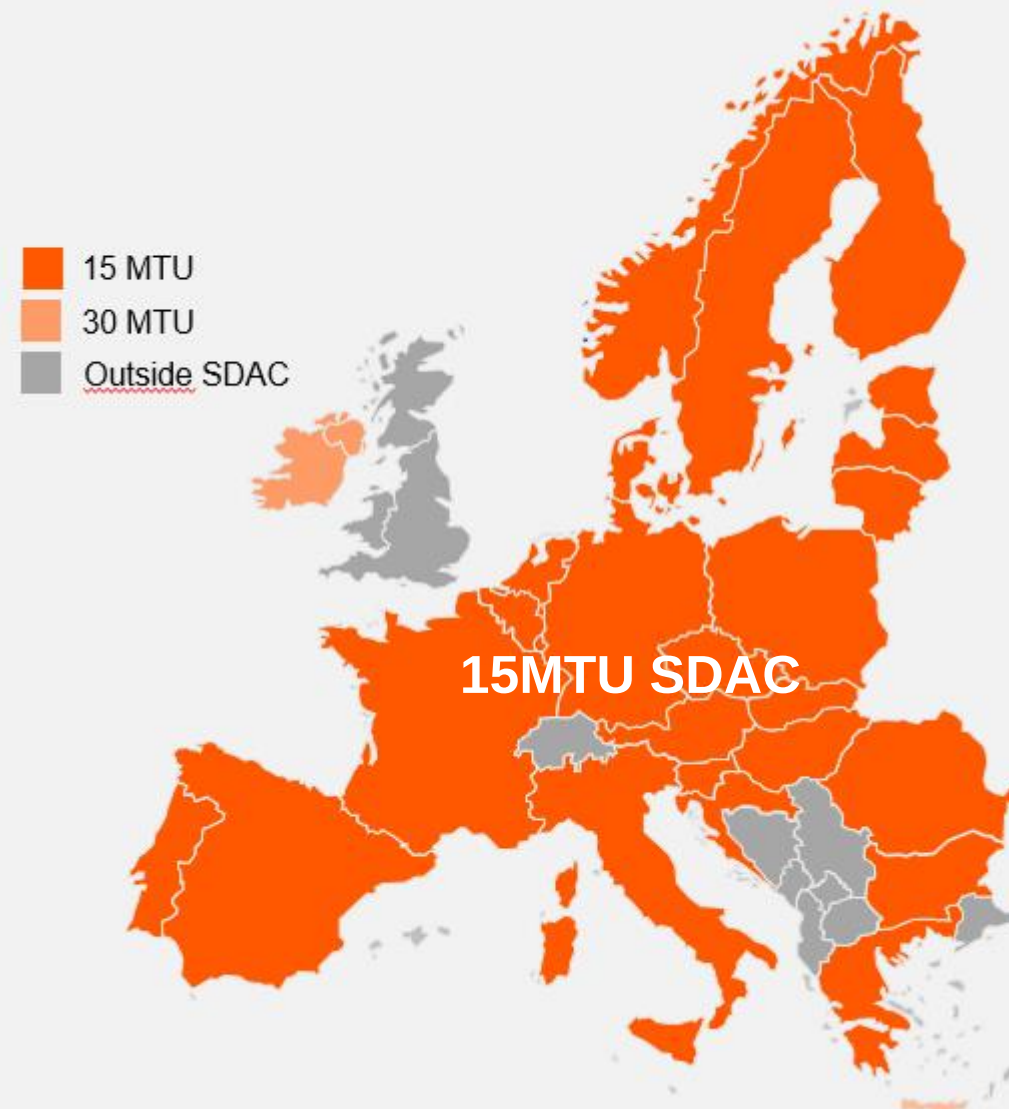
From 11 June 2025, all SDAC coupled day-ahead auctions will shift to 15-minute Market Time Unit (30-minute for Ireland).

- › All SDAC coupled markets will switch **on the same day**
- › The Market Time Unit refers to the **delivery period for which the market price is established**
- › Exchanges are **free to propose multiple duration bidding** on their day-ahead coupled auctions, including the MTU.

The material and recording of our dedicated 15MTU Webinar are available [here](#) (accessible to EPEX SPOT members only)

› This harmonization aims at:

- creating consistency across EU markets
- enhance efficiency in electricity balancing processes.



MATS SIMU 2 – Facilitating 15/30MTU SDAC transition

Current SIMU – All available auctions with existing durations



<https://mats-simu.epexspot.com>
<https://mats-simu-api.epexspot.com>



<https://semopx.mats-simu.epexspot.com>
<https://semopx.mats-simu-api.epexspot.com>



<https://hupx.mats-simu.epexspot.com>
<https://hupx.mats-simu-api.epexspot.com>



<https://bsp.mats-simu.epexspot.com>
<https://bsp.mats-simu-api.epexspot.com>

SIMU2 – SDAC auctions with multiple duration bidding including *official MTU*



<https://mats-simu2.epexspot.com>
<https://mats-simu2-api.epexspot.com>



<https://semopx.mats-simu2.epexspot.com>
<https://semopx.mats-simu2-api.epexspot.com>



<https://hupx.mats-simu2.epexspot.com>
<https://hupx.mats-simu2-api.epexspot.com>



<https://bsp.mats-simu2.epexspot.com>
<https://bsp.mats-simu2-api.epexspot.com>

Auction	Submission granularity	Mkt Res. (MCP/MCV)
CORE	15'/30'/60'	15'
NORDIC	15'/30'/60'	15'

Auction	Submission granularity	Mkt Res. (MCP/MCV)
SEM-DA	30'	30'

Auction	Submission granularity	Mkt Res. (MCP/MCV)
HU	15'/60'	15'

Auction	Submission granularity	Mkt Res. (MCP/MCV)
SI	15'/60'	15'

=> We will copy your current MATS SIMU accounts to MATS SIMU2.

15MTU / Cross-Product Matching

What you can expect today

After today's session, you will know:

- › How order management screen will look like with additional durations / combinations
- › How to use bulk import with different durations
- › How to view and understand your public and private results (in the context of 15MTU / CPM)

Sample files provided as part of supportive materials

- › *'LinearOrder...15MTU_bulkImport'* – Import of 3 linear orders (15'/30'/60')
- › *'BlockOrder...15MTU_bulkImport'* – Import of 3 “sets” of block orders (15'/30'/60')
- › *'20250326....-MRC-D+1.xml'* – Sample Trade report
- › *'20250406....-MRC-D+1.csv'* – Sample Market result report

Useful documentation

- › All the documentation published so far has, where applicable, a **15MTU SDAC** tag to indicate specifics of this change, e.g.:
 - › MATS Fundamentals
 - › MATS & ETS – Changes overview
 - › Web Client User guide (SwaggerHub portal)
 - › etc.

Delivery end date time of the period in UTC. Format: YYYY-MM-DDTHH24:MI:SSZ

Delivery start date time follows MTU granularity, i.e. the lowest market time unit.

15MTU SDAC: this field will have 15-minute granularity independent on the duration of the submitted orders which resulted in a trade.

Query Parameters

bidding-level string

Bidding level name

Example:

duration integer

Duration of order. Possible values: 60, 30, or 15

Example:

portfolio string

Portfolio name

Example:

API Spotlight

03



API 2FA principles

- . Login / Logout / Password management REST API

- .Changes with Keycloak



Understanding Login/Logout REST API: Connect, Tokens & Disconnection

ETS API

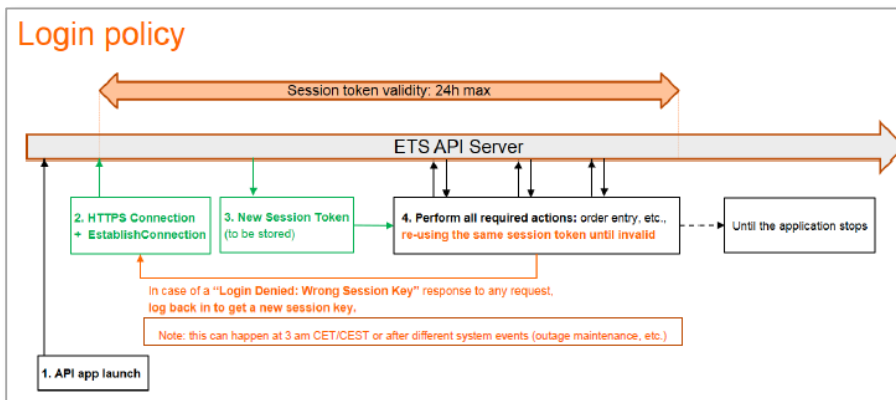
› Login: *EstablishConnection*

- **Technically:** you can send as many EstablishConnection as you want, and create many **session keys**.
 - **session token = user + session key**
- Each token is valid and can be successfully used in parallel.
- **Terms of Reference :** must store the token in the response, and use it as long as valid (until getting an error)

› Token duration: All tokens expire at 03:00am.

› Logout (user + session key):

- log out from one specific session,
- No impact on other sessions of this user.



MATS API

› Login: *Connect*

- “Can log in only once” = “can only have one active token at a time”
- Not required anymore to store a persistent token...but you must handle one single active token at a time: flag **alreadyConnected**:

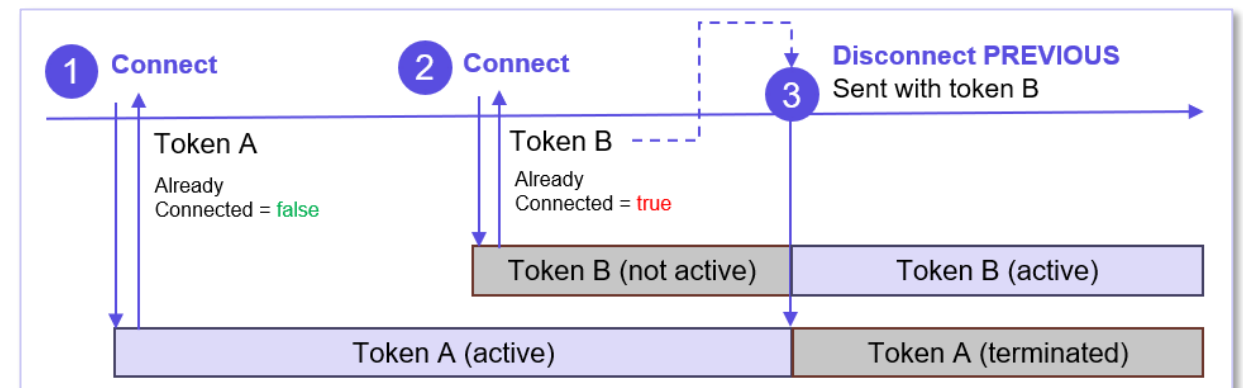
If **true**, disconnect the previous active token

› Token duration: 24 hours

› Logout: *Disconnect*

- from CURRENT session
- from PREVIOUS sessions

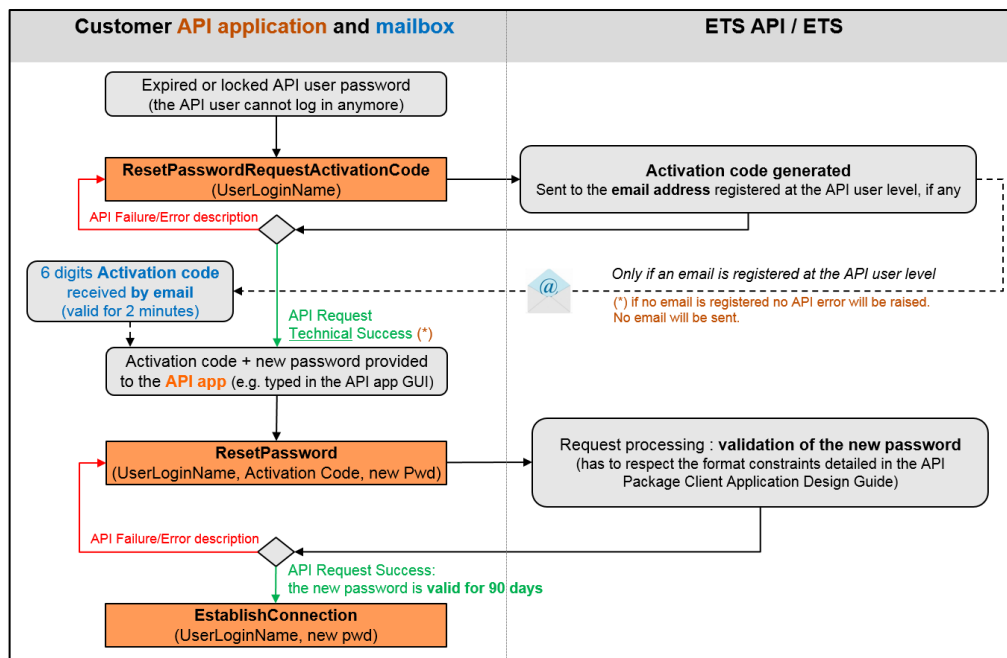
```
{
  "_data": {
    "token": "eyJ0eXAiOiJKV1QiLCJhbGciOiJSUzI1NiJ",
    "group": "TRADER",
    "userName": "APIUSER",
    "login": "APIUSER",
    "tokenDuration": 1440,
    "alreadyConnected": true,
    "passwordTimeIntervalBeforeExpiry": 7548103
  }
}
```



User Password management

ETS API

- **Initial password** provided by Market Operations
 - Password default validity = 7 days, can be extended to 90 days.
- **UpdatePassword** (current pwd, new pwd)
- **ResetPasswordRequestActivationCode**
- **ResetPassword**



MATS API

- **Initial password:** email with a **reset token** (email at user level)
Note: the **pwd remaining validity** in seconds given in the connect response

Email Subject: [MATS] - EPEX - Password Reset Request

Dear APIUSER,

We received a request to reset your password for APIUSER. If this request does not come from you or your organization, please contact Market Operations team.

To reset your password:

token

Please use the token below:

eyJ0eXAI0iKV1Q1LC1hbGGOiSUz11N1U9.eypc3MiOiUuYXRZlwiidWlkoJtoTjPjliwiYXVkoJiUuY2Z3SiZlZWtKCi6MTczMDQ0OTY4MiwiZXhwoJnoXzNmWnNtc2MDdyfQ.Q866MCZQF91ZJAW6vu0zHjNkNwJLtfJfKXnRbUosFCvYd4BgArJcnFOHsFdtx5m6fPouKzYn9KxoAoGlmtb6Hd2tdrtgT_BZ-avTr1Z356p6444K4mK3mfYv9y9QMre_9CRCPvY14nMqq646a5P9rMKM_ZeK2urJv7rAnQexA0hc_ChlieLebu_T84Z05rdD1P05LiselFMCYpJ6BNTITKNzWJ_EwsPQ

For security purpose, the token is valid only for the next 24 hours. After this period, you will need to restart the password reset process.

If you encounter any issues or have any questions, please do not hesitate to contact us.

Kind regards,
Market Operations team

- **Password Initialization:** /api/security/credential
 - **Reset password:** new pwd + pwd reset token
 - **Modify current password :** current pwd + new pwd (being connected)
- **Password Initialization/Reset Token:** /api/security/initialize-password
 - Request a **password token** which can be used to **reset password**.
 - No token required.
 - A valid email address must be configured for the user (please contact Market Operations).

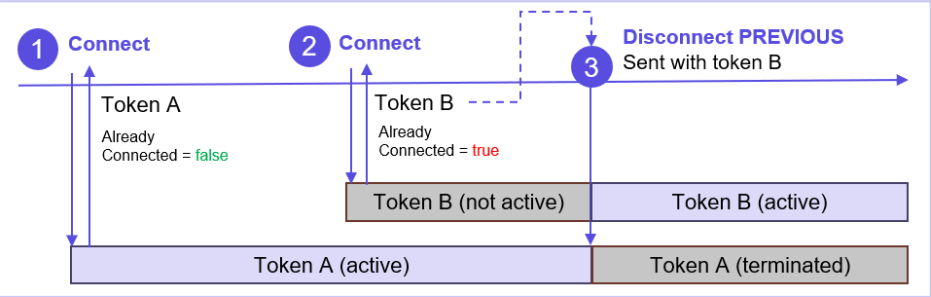
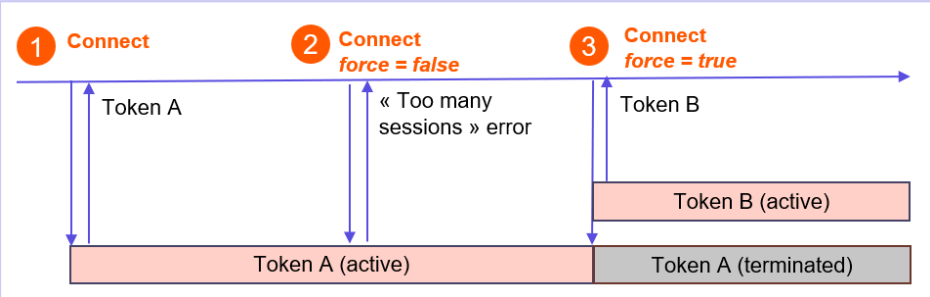
Changes with Keycloak

2nd authentication factor = certificate

API Customer Services
24 March 2025



Changes with Keycloak

Functionality	REST API	Keycloak 2 nd factor = certificate
End Points / URL	URL : same for all exchanges (but one user per exchange login) Content : application/json	new keycloak URLs, - Include : realms = exchange → must be configurable per exchange Content: application/x-www-form-urlencoded (for Login, Logout)
Response format	Json: _data + _notification Notifications: contains errors & warnings	Json different format <pre>{ "error": "invalid_grant", "error_description": "Invalid user credentials" }</pre>
Login	/connect: user + pwd Kickout: flag alreadyConnected, disconnect PREVIOUS, token provided in the failing connect response  The diagram shows a sequence of three steps: 1. Connect (Token A, Already Connected = false, Token A active), 2. Connect (Token B, Already Connected = true, Token B not active), and 3. Disconnect PREVIOUS (Sent with token B, Token B active, Token A terminated). A dashed arrow indicates the transition from step 2 to step 3.	Connect new URL: user + pwd + certificate (accepts existing ETS certificate – not about to expire) Kickout : « Too many sessions » error if the user is already connected. force attribute, token only provided once connected (in the response)  The diagram shows a sequence of three steps: 1. Connect (Token A, Token A active), 2. Connect force = false (« Too many sessions » error, Token A active), and 3. Connect force = true (Token B, Token B active, Token A terminated). A dashed arrow indicates the transition from step 2 to step 3.

Changes with Keycloak

Functionality	REST API	Keycloak
Logout	• /disconnect • Push : client must disconnect explicitly	• New keycloak URL • Push : connection automatically closed
Password expiry	• in the /connect response	• new request /openid-connect/userinfo
Modify Password (while connected)	• /credential/password	• New keycloak URL • Email pwd modification confirmation (if shared account: everyone is informed)
Reset Password	1) /security/initialize-password: Pwd Token received by email 2) Set the new password via a request: /security/credential (new pwd + pwd token) 3) Connect with the new password	1) New keycloak URL: Link to reset webpage received by email 2) Set new password: manually via the webpage 3) Email pwd change confirmation 4) Connect with the new password

MATS Password Policy

MATS Fundamentals document:

› A user password must have:

- a minimum of 12 characters
- a maximum of 128 characters
- a minimum of one capital letter
- a minimum of one small letter
- a minimum of 1 digit
- a minimum of 1 special sign (space,!#\$%&'()*+,-.:=?@[^_`{}~\ / " | :<>)
- the first character and last character must not be a space

› Last 5 passwords cannot be reused

› Password cannot be same as login

› Maximum password age = 90 days



› User account **lockout policy**: **simplified**

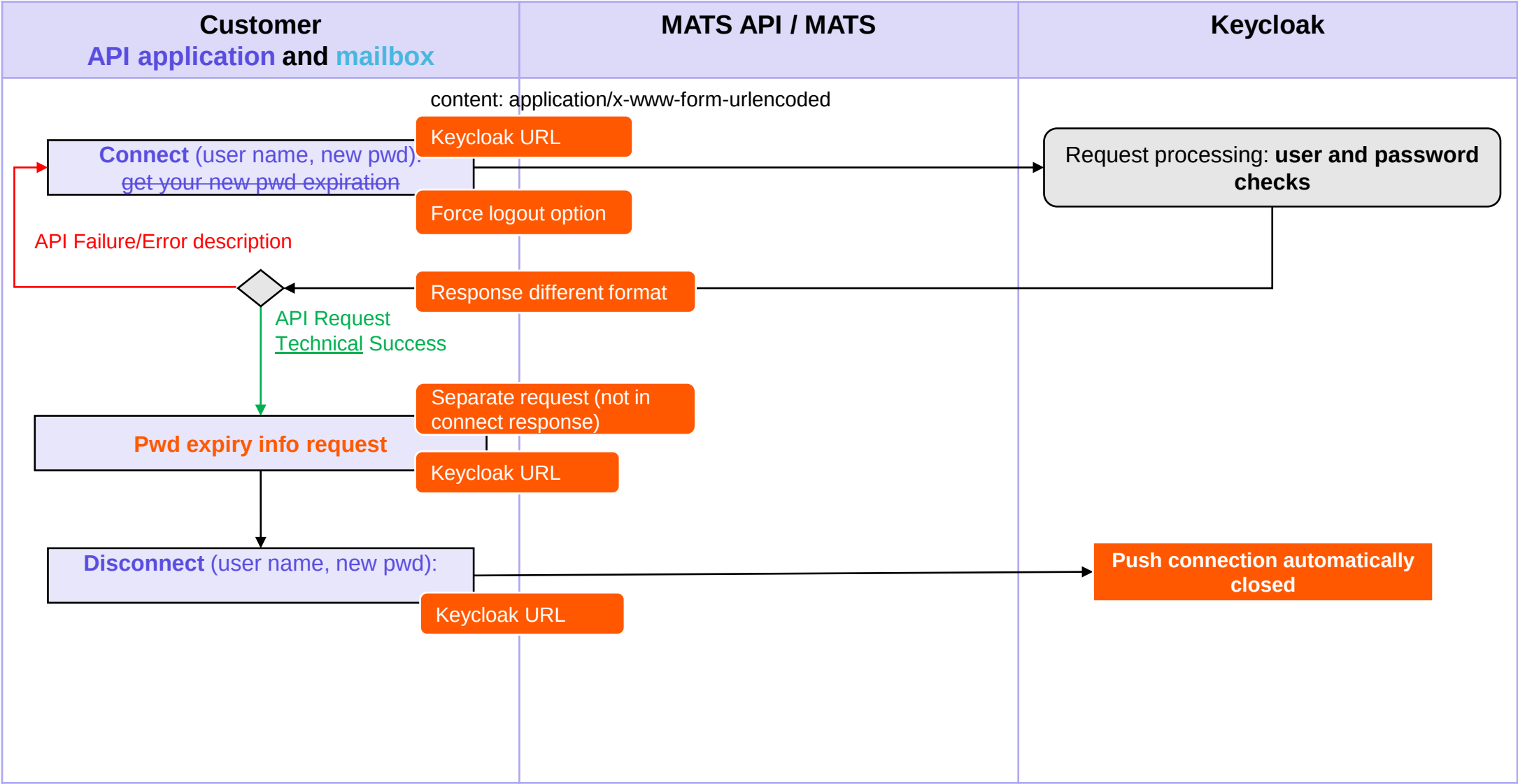
•No more temporary ban

•After 5 failed connection attempts due to invalid credentials, user account is permanently locked.

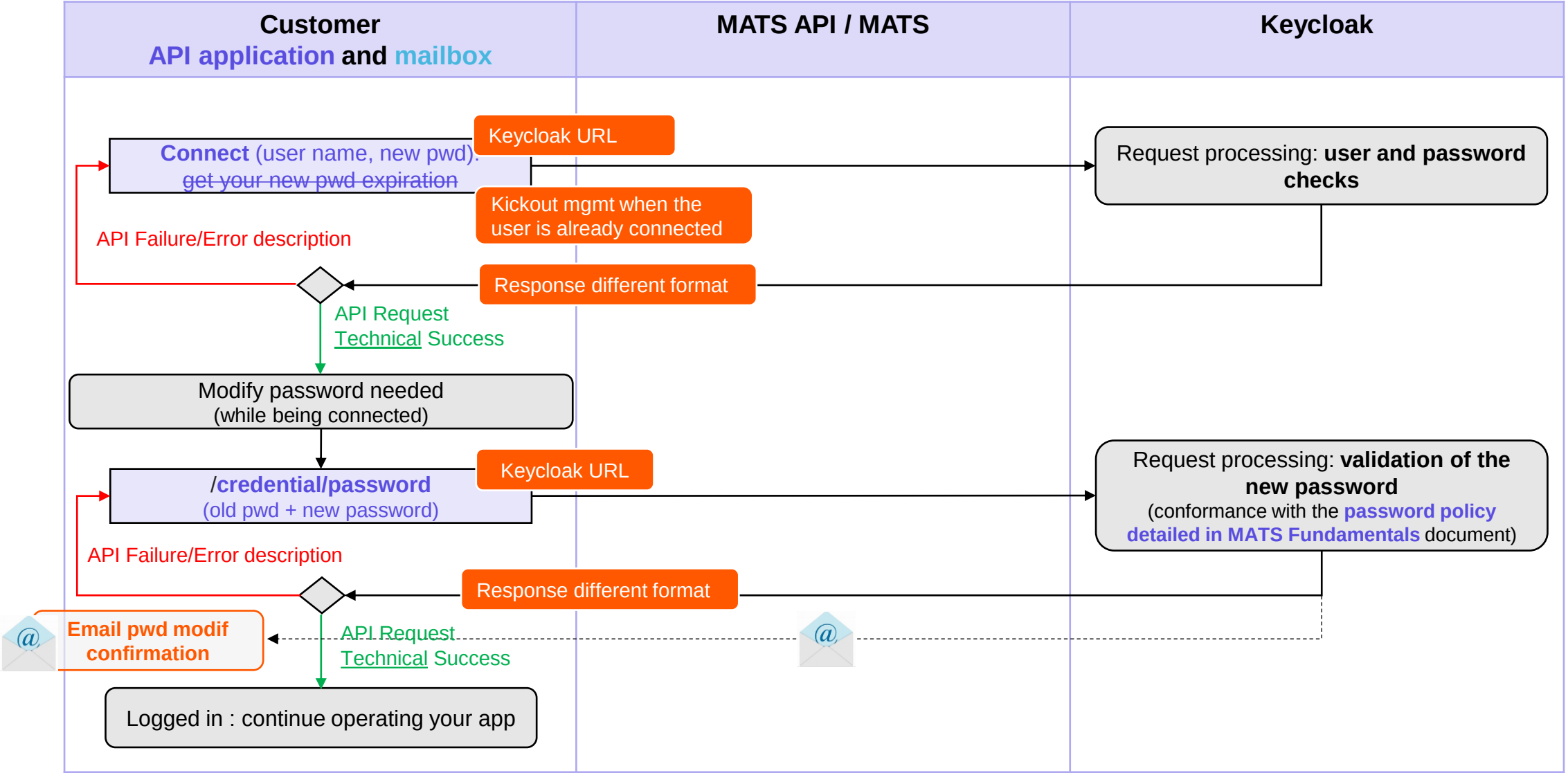
•If locked, please contact **Market Operations Team** to unlock your user account.

•(no more temporary ban mechanism)

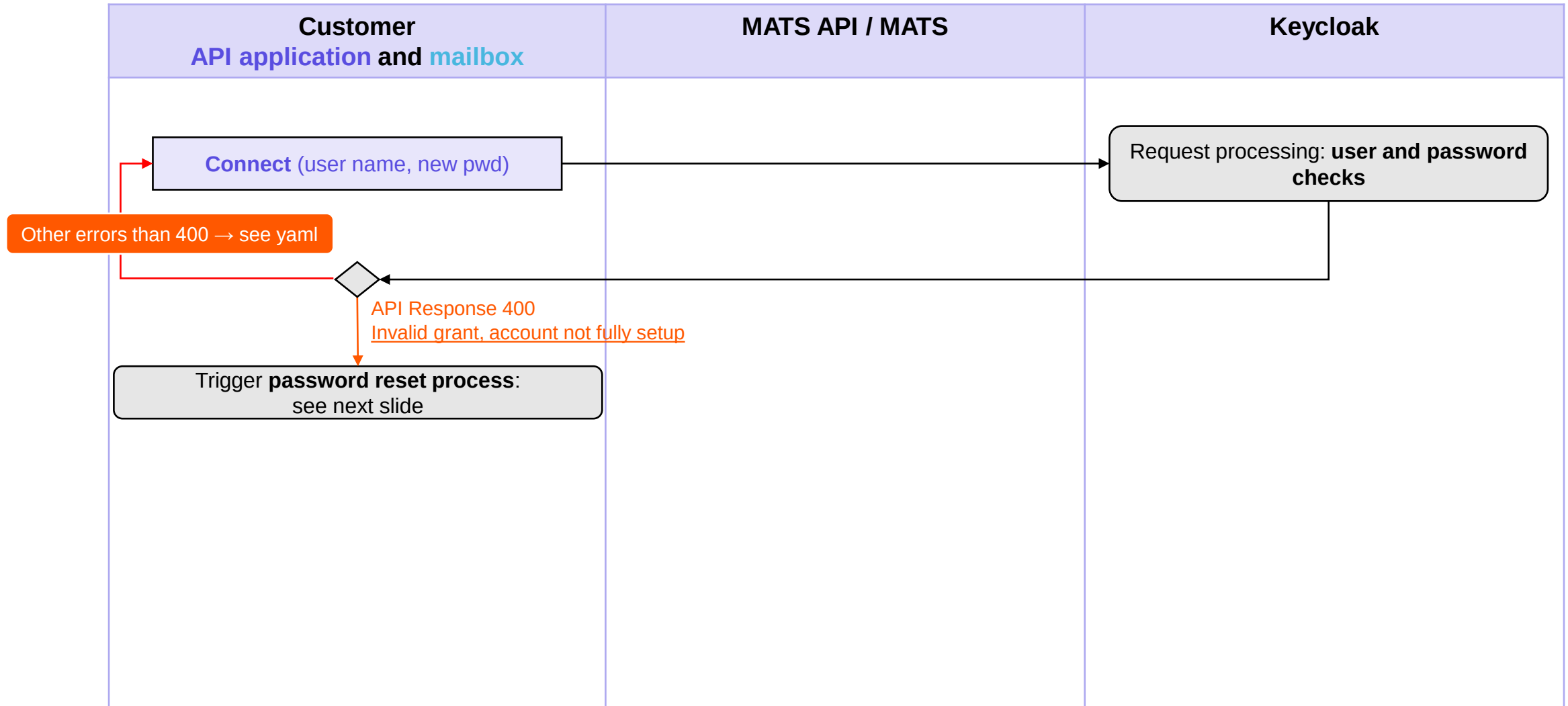
User connect/disconnect **changes** with keycloak



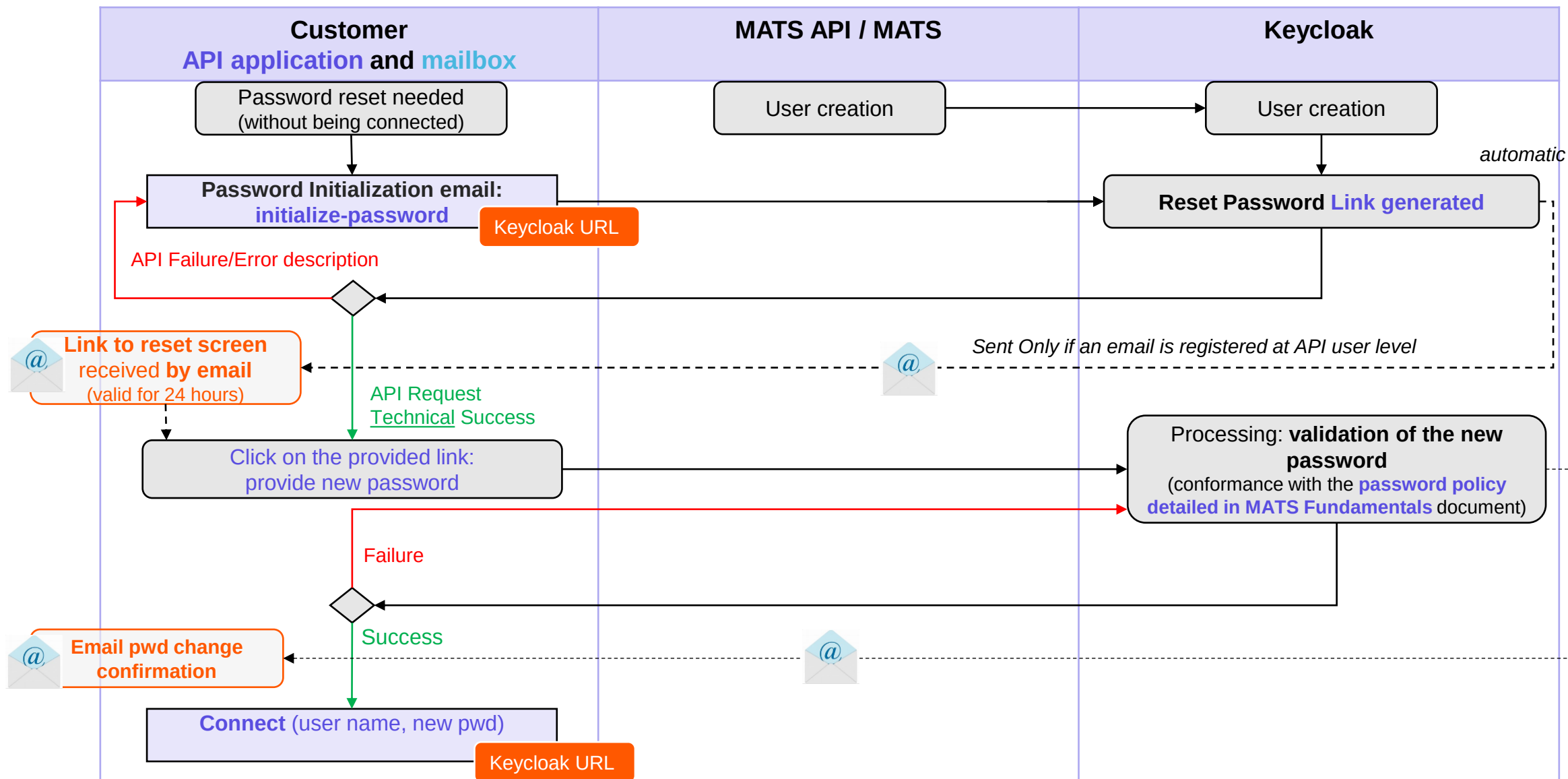
User Password management: password modification while connected



User Password management: password modification once expired



User Password management: password reset (cannot connect anymore)



Conformance Test Update



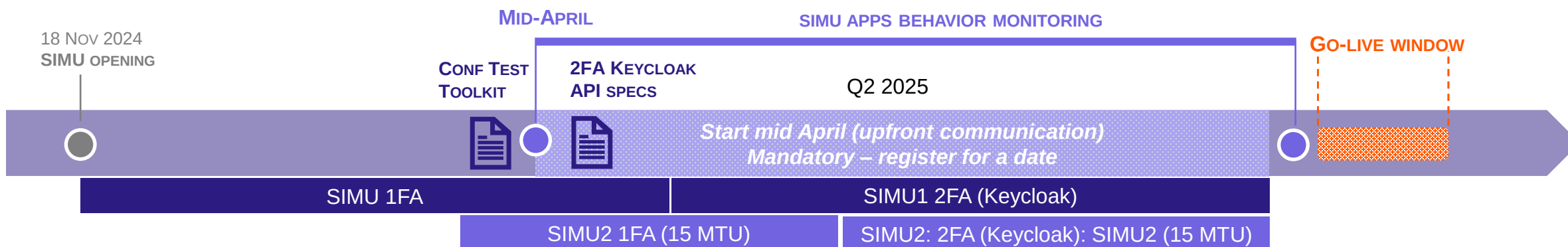
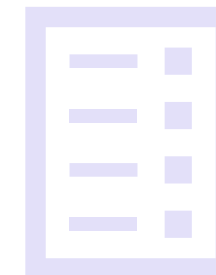
API apps Conformance Test: accompany you best towards Production

The principles of API apps Conformance tests remain:

› Conformance Test to our Terms Of Reference (ToR)

- ToR will be slightly simplified (e.g. login), but principles remain the same: **chasing “abusive” patterns** (ad hoc requests always allowed).

› Accompany you best, not block you from going live! (passed with a caveat)



When can I go through a conformance test?

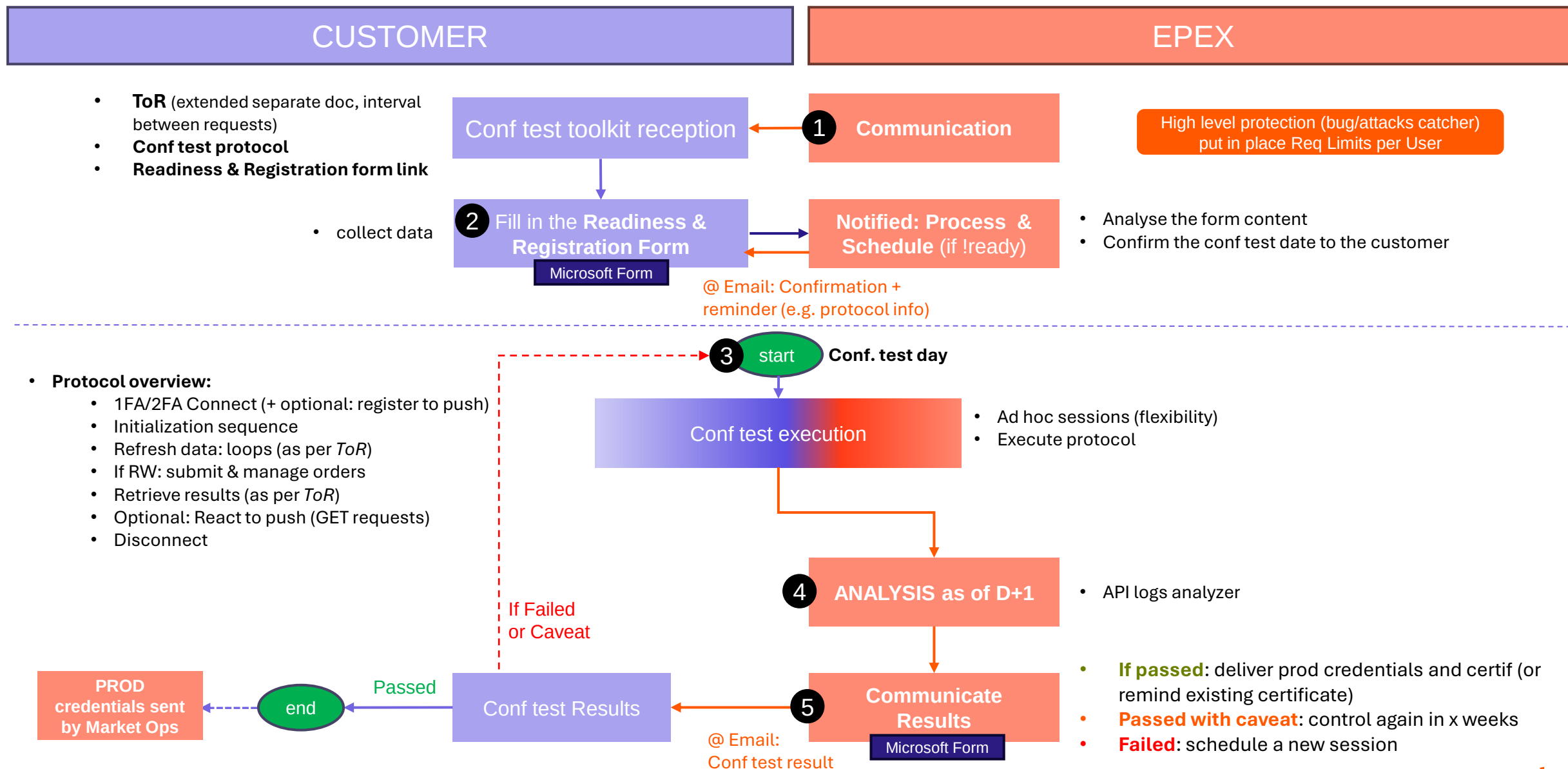
- › Once I have fully tested my API app,
- › Even if Keycloak not yet implemented (2FA done later),
- › If you use an ISV: conf test only done by the ISV

Do I need to go through one conf test per exchange?

› No, only for 1 exchange

- If Epex + another exchange -> Epex conf test

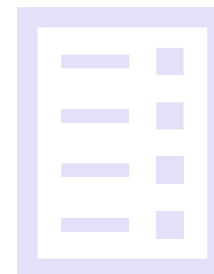
Conformance Process Overview – as of mid-April



Customer API apps : indicate your app name

Please fill in the **User Agent http header** when sending a request:

- To facilitate the conformance test analysis and general API application monitoring,
- **User-Agent** = <product>/<product-version> <comment>
 - With product = [member, DV or ISV name] – [Application name]
 - Example: `EpexSpot-JavaSampleTestClient/1.4`



Member Testing and Readiness

04



Member testing

First scheduled testing sessions

- › We altered the initial approach to rationalize resources and secure good continuity until Go-Live.
- › We will send monthly schedule in advance to explain the scenarios, but for now:
 - › EPEX: 25/03, SVPX: 26/03 [Normal day + DST23]
 - › EPEX: 01/04, SVPX: 02/04 [Normal day]
- › Objective of these sessions is to give you an opportunity to 'tick the boxes' to secure your readiness and submit more realistic bids in the system (to also test our new business rules).

Self-paced testing is still there

- › Since SIMU opening, we have been running all auctions on daily basis (excl. weekend and public holidays) and this will continue until Go-live.

Sample files provided as part of supportive materials

- › '*LinearOrder_XXmin_DST23.xlsx*' – Three examples, one for each duration
- › '*BlockOrder_XXmin_DST23.xlsx*' – Three examples, one for each duration

Member Readiness Criteria

We want to make sure you can:

- › Connect to the system with 1FA and (re-)set your password
- › Retrieve orders and necessary configuration information
- › Submit, modify, delete, export different order types and understand the key business rules differences
- › View / retrieve public and private results, download Trade Report
- › View Trading limits
- › Use the PUSH (if it is of interest to you)

Next elements to be delivered throughout SIMU:



Connection changes (1FA)
Second-factor authentication (2FA)

Planned in Release #2



Future-to-Spot orders

Planned in Release #3



Market Results file

Delivered in Release #1



Trading limits

Planned in Release #3

We have started and will continue calling you directly. As it may take some time until we reach everyone, we kindly ask you to fill in already the member readiness **FORM**.



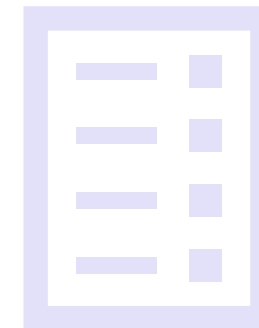
POLL

Following our webinar, simulation opening and communication releases, how would you describe your autonomy?



Your material

MATS Overview and updates



MATS Toolkit



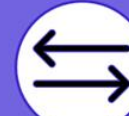
Get Started Checklist

Explanation of the package with useful links



MATS Fundamentals

MATS functional specification and sample files



MATS & ETS – Changes overview

Notable changes between MATS and ETS



MATS FAQ

Frequently asked questions from MATS community



MATS API package

Specifications and sample codes



MATS Portal



Web client Userguide

Comprehensive userguide of MATS web client



API Swagger

Comprehensive description of the structure of the API



Customer support



mats-support

@epexspot.com



mats-support-svpx

@epexspot.com

Q&A

05





part of eex group



MATS GoTo session #5 : 17 April 2025

We remain available at:

- mats-support@epexspot.com
- mats-support-svpx@epexspot.com