

PSD2 API Solution - Test backend

Addressees:

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Document history

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0.9	First draft	May 28 th , 2019	David Schneider, Lars Kieffer
1.0	Version 1.0	September 9 th , 2020	David Schneider
1.1	Chapter 3.2: SCA at Login removed, Chapter 3 and 4 order reversed	June 20 th , 2020	David Schneider
1.2	Change to a generic documentation, updated GUI Screenshots	November 23 th , 2020	David Schneider

1 Introduction

This document describes how TPPs can connect the Crealogix PSD2 API Solution.

The document assumes that you have basic knowledge about Payment Services Directive 2 (PSD2) regulation of the European Union, its terminology and use cases. Please refer to the References section below for an overview and detailed information about the regulation. In addition, you will also find a Glossary below with the most important PSD2 terms. Furthermore, this document assumes that you have read the Functional description of the PSD2 API Solution and the TPP documentation.

TPPs can use the Crealogix PSD2 API Solution to connect their services. A TPP uses the integrated API Management tool in order to make use of the Crealogix PSD2 API Solution public API. After login the TPP can subscribe to respective API. Crealogix PSD2 API Solution will rely on [NextGenPSD2 Access to Account Interoperability Framework](#) specified by *The Berlin Group* version 1.3. The subscription is necessary to allow TPPs to consume the API. This process is explained in this document. The Crealogix PSD2 API Solution will follow the Berlin Group Specification for the comply-only features. Thus, it is possible for an end customer - amongst other functions - to get a balance or postings of the customer's payment accounts, make a payment initiation and check the availability of funds via a TPP. However, not all Methods and fields will be available. For further details see TPP Documentation.

Having received a request from a TPP the PSD2 API Solution will then identify the TPP before executing the request. If the ASPSPs backend enforces a SCA via the PSU, the OTP needs to be entered.

A description of the workflows will be given in the TPP documentation. In comparison to the first rollout of the sandbox consecutive requests will now be possible. The TPP needs to remember some information like Consent-ID, Payment-ID etc. See Berlin Group Implementation Guidelines.

A TLS-connection between TPP and ASPSP has to be established always including client (i.e. TPP) authentication. For this authentication the TPP will use a qualified certificate for website authentication (QWAC). This qualified certificate is issued by a Qualified Trust Service Provider (QTSP) according to the eIDAS regulation. The certificate of the TPP will indicate all roles the TPP is authorized to use. And the QWAC has to be fully compliant to the official standard ETSI TS 119 495.

The TPP will always be identified on Transport Layer (with qualified digital certificate). Additional identification of the TPP at application level (with electronic seal) is not part of the solution. TPP requests data, ASPSP only responses to requests.

Representational state transfer (REST) is used for communication through requests and responses.

2 Description

The test system offers 30 different PSUs. These are identical in content and all have the same account types with the same transactions. Thus, each testing TPP can arbitrarily pick one or two PSU and test the API with them. The necessary information is listed in the table below.

Every 24 hours the deposited test data is renewed and the balance available for transfers is replenished. It is therefore advisable to use as small amounts as possible for the test of payments, as each payment has an influence on the available account balance - it therefore also changes the balance query.

The SCA is simulated here. A TAN ending in "5" is recognized as valid by the system, any other TAN is a failed attempt. After too many unsuccessful attempts, the PSU may be locked in the system. It must then be unlocked via the associated GUI. The process is described in Chapter 4.2.

A payment is only accepted by the system as earmarked sales. The test backend simulates a batch booking.

URL to API Store:

<https://preview.wso2-clx.crealogix-online.com/store/>

3 Demo data

PSU	Password	Name	Account-Type	IBAN
demo01	demo	John Doe01	Basic Cash	DE27600121662934953891
			Extra Cash	DE90600121662934954891
			Premium Cash	DE28600121662934955231
			Sparkonto	DE57600121662934957231
demo02	demo	John Doe02	Basic Cash	DE97600121662934953892
			Extra Cash	DE63600121662934954892
			Premium Cash	DE98600121662934955232
			Sparkonto	DE30600121662934957232
demo03	demo	John Doe03	Basic Cash	DE70600121662934953893
			Extra Cash	DE36600121662934954893
			Premium Cash	DE71600121662934955233
			Sparkonto	DE03600121662934957233
demo04	demo	John Doe04	Basic Cash	DE43600121662934953894
			Extra Cash	DE09600121662934954894
			Premium Cash	DE44600121662934955234
			Sparkonto	DE73600121662934957234
demo05	demo	John Doe05	Basic Cash	DE16600121662934953895
			Extra Cash	DE79600121662934954895
			Premium Cash	DE17600121662934955235
			Sparkonto	DE46600121662934957235
demo06	demo	John Doe06	Basic Cash	DE86600121662934953896
			Extra Cash	DE52600121662934954896
			Premium Cash	DE87600121662934955236
			Sparkonto	DE19600121662934957236
demo07	demo	John Doe07	Basic Cash	DE59600121662934953897
			Extra Cash	DE25600121662934954897
			Premium Cash	DE60600121662934955237
			Sparkonto	DE89600121662934957237
demo08	demo	John Doe08	Basic Cash	DE32600121662934953898
			Extra Cash	DE95600121662934954898
			Premium Cash	DE33600121662934955238
			Sparkonto	DE62600121662934957238
demo09	demo	John Doe09	Basic Cash	DE05600121662934953899
			Extra Cash	DE68600121662934954899
			Premium Cash	DE06600121662934955239
			Sparkonto	DE35600121662934957239
demo10	demo	John Doe10	Basic Cash	DE75600121662934953900
			Extra Cash	DE41600121662934954900
			Premium Cash	DE76600121662934955240
			Sparkonto	DE08600121662934957240
demo11	demo	John Doe11	Basic Cash	DE48600121662934953901
			Extra Cash	DE14600121662934954901
			Premium Cash	DE49600121662934955241
			Sparkonto	DE78600121662934957241
demo12	demo	John Doe12	Basic Cash	DE21600121662934953902
			Extra Cash	DE84600121662934954902
			Premium Cash	DE22600121662934955242
			Sparkonto	DE51600121662934957242

demo13	demo	John Doe13	Basic Cash	DE91600121662934953903
			Extra Cash	DE57600121662934954903
			Premium Cash	DE92600121662934955243
			Sparkonto	DE24600121662934957243
demo14	demo	John Doe14	Basic Cash	DE64600121662934953904
			Extra Cash	DE30600121662934954904
			Premium Cash	DE65600121662934955244
			Sparkonto	DE94600121662934957244
demo15	demo	John Doe15	Basic Cash	DE37600121662934953905
			Extra Cash	DE03600121662934954905
			Premium Cash	DE38600121662934955245
			Sparkonto	DE67600121662934957245
demo16	demo	John Doe16	Basic Cash	DE10600121662934953906
			Extra Cash	DE73600121662934954906
			Premium Cash	DE11600121662934955246
			Sparkonto	DE40600121662934957246
demo17	demo	John Doe17	Basic Cash	DE80600121662934953907
			Extra Cash	DE46600121662934954907
			Premium Cash	DE81600121662934955247
			Sparkonto	DE13600121662934957247
demo18	demo	John Doe18	Basic Cash	DE53600121662934953908
			Extra Cash	DE19600121662934954908
			Premium Cash	DE54600121662934955248
			Sparkonto	DE83600121662934957248
demo19	demo	John Doe19	Basic Cash	DE26600121662934953909
			Extra Cash	DE89600121662934954909
			Premium Cash	DE27600121662934955249
			Sparkonto	DE56600121662934957249
demo20	demo	John Doe20	Basic Cash	DE96600121662934953910
			Extra Cash	DE62600121662934954910
			Premium Cash	DE97600121662934955250
			Sparkonto	DE29600121662934957250
demo21	demo	John Doe21	Basic Cash	DE69600121662934953911
			Extra Cash	DE35600121662934954911
			Premium Cash	DE70600121662934955251
			Sparkonto	DE02600121662934957251
demo22	demo	John Doe22	Basic Cash	DE42600121662934953912
			Extra Cash	DE08600121662934954912
			Premium Cash	DE43600121662934955252
			Sparkonto	DE72600121662934957252
demo23	demo	John Doe23	Basic Cash	DE15600121662934953913
			Extra Cash	DE78600121662934954913
			Premium Cash	DE16600121662934955253
			Sparkonto	DE45600121662934957253
demo24	demo	John Doe24	Basic Cash	DE85600121662934953914
			Extra Cash	DE51600121662934954914
			Premium Cash	DE86600121662934955254
			Sparkonto	DE18600121662934957254
demo25	demo	John Doe25	Basic Cash	DE58600121662934953915
			Extra Cash	DE24600121662934954915
			Premium Cash	DE59600121662934955255
			Sparkonto	DE88600121662934957255

demo26	demo	John Doe26	Basic Cash	DE31600121662934953916
			Extra Cash	DE94600121662934954916
			Premium Cash	DE32600121662934955256
			Sparkonto	DE61600121662934957256
demo27	demo	John Doe27	Basic Cash	DE04600121662934953917
			Extra Cash	DE67600121662934954917
			Premium Cash	DE05600121662934955257
			Sparkonto	DE34600121662934957257
demo28	demo	John Doe28	Basic Cash	DE74600121662934953918
			Extra Cash	DE40600121662934954918
			Premium Cash	DE75600121662934955258
			Sparkonto	DE07600121662934957258
demo29	demo	John Doe29	Basic Cash	DE47600121662934953919
			Extra Cash	DE13600121662934954919
			Premium Cash	DE48600121662934955259
			Sparkonto	DE77600121662934957259
demo30	demo	John Doe30	Basic Cash	DE20600121662934953920
			Extra Cash	DE83600121662934954920
			Premium Cash	DE21600121662934955260
			Sparkonto	DE50600121662934957260

For the simulation of SCA at login additional SCA users are provided. Remark: Testing SCA at login is normally not necessary as consent management manages the 90 days exception via consent of the TPP/PSU within the PSD2 API Solution.

test05	demo	user with SCA	one device	Push Tan
test06	demo	user with SCA	multiple device	Push Tan
test07	demo	user with SCA	one device	Foto Tan

4 GUI

Click the following URL to get to the GUI of the Testbackend:

[https://preview.abaxx-psd2-clx.crealogix-online.com/portal/abaxx-?\\$part=Home.content.Welcome](https://preview.abaxx-psd2-clx.crealogix-online.com/portal/abaxx-?$part=Home.content.Welcome)

4.1 Login

Click „Login“ icon on the top right corner, enter credentials and click on “Login” button.

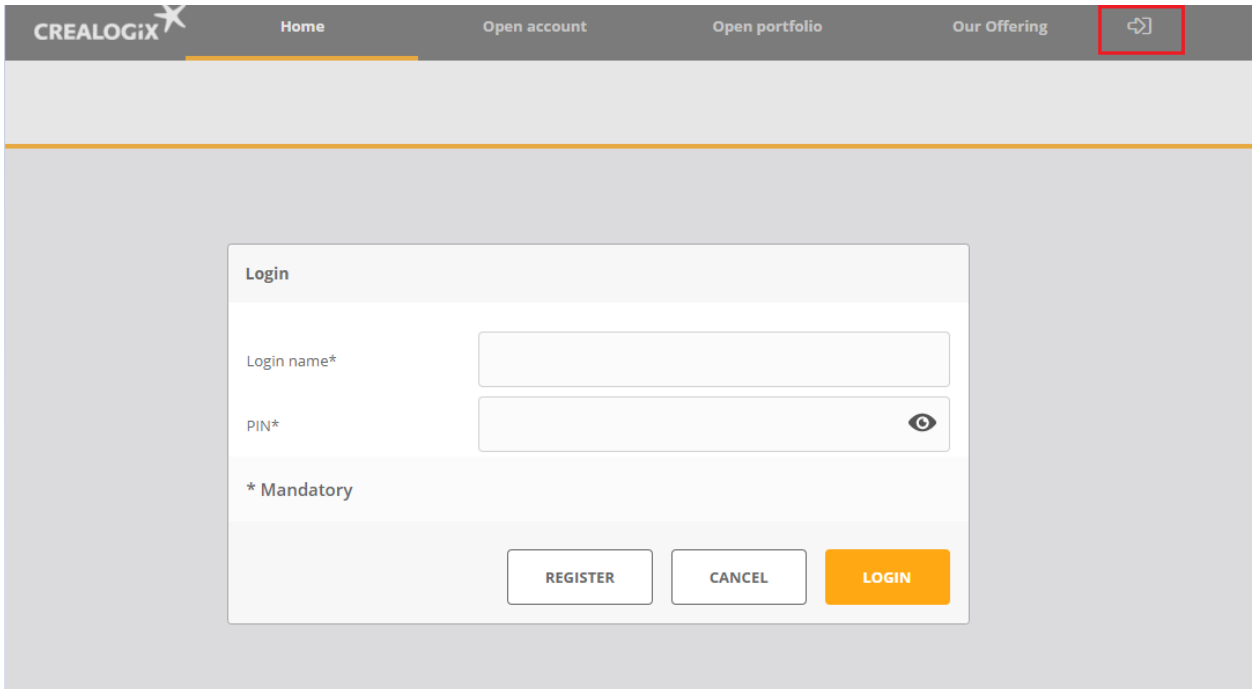


Figure 1 - Login Website

4.2 Enter TAN within Login process

This is only necessary if an SCA user is used (demo05 - demo07).

SCA at login was removed as the consent for the TPP/PSU will be fully managed by the Consent Management of the PSD2 API Solution.

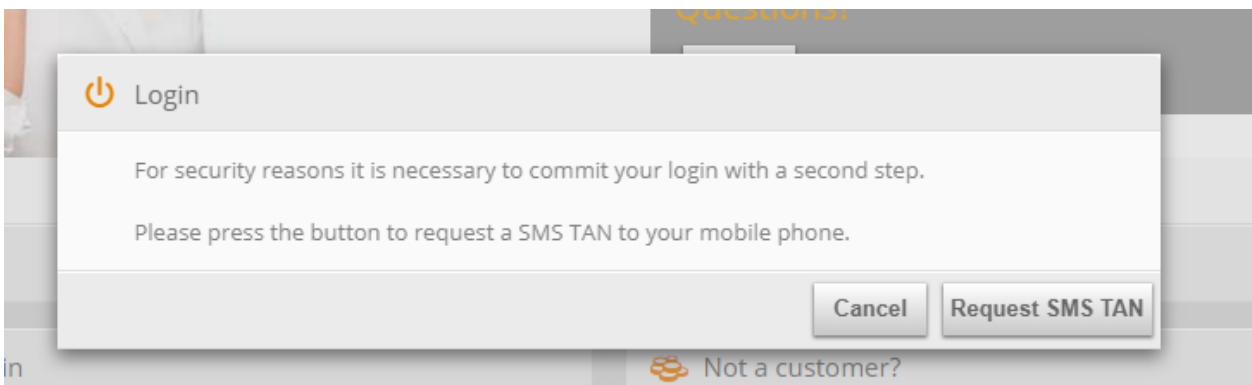


Figure 2 – Request TAN

Click „Request SMS TAN“.

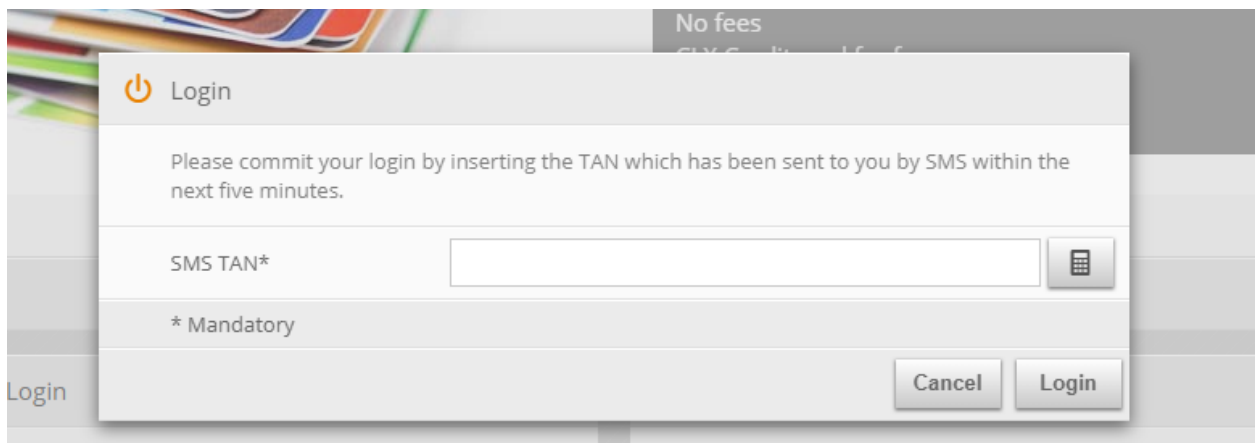


Figure 3 - Enter TAN

Enter valid TAN (e.g. "5").

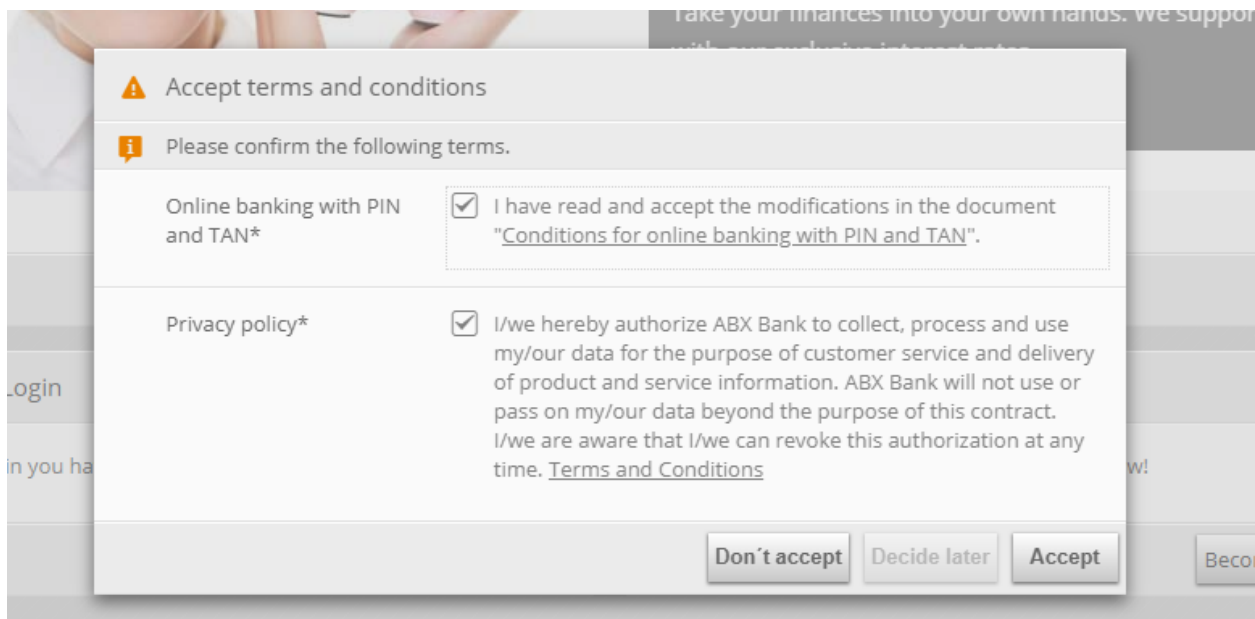


Figure 4 - Accept T&C

Click „Accept“.

5 References

Description	Hyperlink
Short introduction to PSD2 by Berlin Group Initiative	https://docs.wixstatic.com/ugd/c2914b_c6a8a0dca83e4af8859be266415d3d79.pdf
Directive (EU) 2015/2366 of the European parliament and of the council on payment services in the internal market (PSD2) of 25 November 2015	English: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32015L2366 German: https://eur-lex.europa.eu/legal-content/DE/TXT/?uri=CELEX:32015L2366
Regulatory Technical Standards on strong customer authentication and secure communication under PSD2 (RTS)	English: https://www.eba.europa.eu/regulation-and-policy/payment-services-and-electronic-money/regulatory-technical-standards-on-strong-customer-authentication-and-secure-communication-under-psd2
Commission delegated regulation (EU) 2018/389 of 27 November 2017 supplementing Directive (EU) 2015/2366 of the European Parliament and of the Council with regard to regulatory technical standards for strong customer authentication and common and secure open standards of communication	English: https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=OJ:L:2018:069:TOC German: https://eur-lex.europa.eu/legal-content/DE/TXT/?uri=OJ:L:2018:069:TOC
Consultation on RTS specifying the requirements on strong customer authentication and common and secure communication under PSD2	English: https://www.eba.europa.eu/regulation-and-policy/payment-services-and-electronic-money/regulatory-technical-standards-on-strong-customer-authentication-and-secure-communication-under-psd2/-/regulatory-activity/consultation-paper
Discussion on RTS on strong customer authentication and secure communication under PSD2	https://www.eba.europa.eu/regulation-and-policy/payment-services-and-electronic-money/regulatory-technical-standards-on-strong-customer-authentication-and-secure-communication-under-psd2/-/regulatory-activity/discussion-paper
EBA Fallback document	https://eba.europa.eu/-/eba-publishes-final-guidelines-on-the-exemption-from-the-fall-back-mechanism-under-the-rts-on-sca-and-csc

<p>NextGenPSD2 Access to Account Interoperability Framework (Berlin Group Standard)</p> <ul style="list-style-type: none"> • Documentation • Technical documentation / API description • OpenAPI File 	<p>https://www.berlin-group.org/nextgenpsd2-downloads</p>
<p>WSO2 API Manager</p>	<p>Description: https://wso2.com/api-management/</p> <p>Documentation: https://docs.wso2.com/display/AM250/WSO2+API+Manager+Documentation</p>
<p>WSO2 Analytics</p>	<p>https://docs.wso2.com/display/AM250/Analytics</p>
<p>WSO2 Admin Guide</p>	<p>https://docs.wso2.com/display/AM250/Product+Administration</p>

6 Glossary

PSD2 abbreviation	Meaning	Usage
2FA	Two Factor Authentication	
AIS	Account Information Service according to article 4 (16) of [PSD2] and as regulated by article 67 of [PSD2].	This service may be used by an AISP to request information about the account of a PSU. The account is managed by the ASPSP providing the XS2A Interface. Functionality and restrictions of this service comply with the requirements defined by article 67 of [PSD2].
AISP	Account Information Service Provider offering an AIS to its customer. See article 4 (19) of [PSD2].	
ASPSP	Account Servicing Payment Service Provider providing and maintain a payment account for a payer. See article 4 (17) of [PSD2]. For example a bank.	
FCS	Fund confirmation service	This service may be used by a PIISP to request a confirmation of the availability of specific funds on the account of a PSU. The account is managed by the ASPSP providing the XS2A Interface. Functionality and restrictions of this service comply with the requirements defined by article 65 of [PSD2].
eIDAS	e lectronic I dentification, A uthentication and trust S ervices is an EU regulation on electronic identification and trust services for electronic transactions in the internal market. It is a set of standards for electronic identification and trust services for electronic transactions in the European Single Market. It was established in EU Regulation 910/2014 of 23 July 2014 on electronic identification and repeals directive 1999/93/EC from 13 December 1999.	
MVP	Minimum Viable Product	Focus on scope in agile development
NA/NCA	National (Competent) Authority. Holds a list of TPPs registered in that particular country.	
PIS	Payment Initiation Service according to article 4 (15) of [PSD2] and as regulated by article 66 of [PSD2].	This service may be used by a PISP to initiate a single payment on behalf of a PSU using a given account of that PSU. The account is

		managed by the ASPSP providing the XS2A Interface. Functionality and restrictions of this service comply with the requirements defined by article 66 of [PSD2].
PISP	Payment service provider offering a PIS to its customer. See article 4 (18) of [PSD2].	
PIISP	Payment Instrument Issuer Service Provider according to article 4 (14) and 45) of [PSD2]. A PIISP can use the service "Confirmation on the availability of funds" as regulated by article 65 of [PSD2].	
PSU	Payment Service User according to article 4 (10) of [PSD2].	
QTSP	Qualified Trust Service Provider, e. g. a trust centre issuing qualified certificates. German: Vertrauensdiensteanbieter (eIDAS)	
SCA	Strong Customer Authentication – authentication procedure based on two factors compliant with the requirements of [PSD2] and [EBA-RTS].	
TPP	Third Party Provider – generic term for AISP/PIISP/PISP.	
TSP/QTSP	Trust Service Provider according to [eIDAS]. Within the context of the XS2A interface specification only qualified TSPs (QTSPs) according to section 3 of [eIDAS] issuing qualified certificates for electronic seals and/or qualified certificates for website authentication which are compliant with the requirements of [EBA-RTS] are relevant.	
XS2A	Access to account interface – interface provided by an ASPSP to TPP for accessing accounts.	
QSealC	Qualified Electronic Seal Certificates	
QWAC	Qualified Website Authentication Certificates	