

XGS-PON at BBCS



Brief description of XGS-PON as part of BBCS



XGS PON – The next generation access technology

With the introduction of XGS-PON in 2020 as a strategic access technology at BBCS, a lot has changed in connection activation. The shared medium within a PON tree means that the ONT used must be connected to the ordered service.

As several orders from different service providers are waiting to be paired with the corresponding ONT of their end customer in a PON tree at the same time, an assignment must be made by means of identification.

To do this, Swisscom use the splash page known from the preorder in a slightly modified form in BBCS. To further simplify pairing for the end customer, BBCS also supports this using the WAN-side MAC address of ONTs.





Qualification

XGS-PON access qualification



WSG Service Fulfillment

WSG SAQ with Fiber

In the SAQ the value "Fiber" is returned in BBType if Fiber Lines are possible (BX and/or XGS-PON)

The fiber technologies that are possible in a building can be seen under "Available Technology" and a plan date if a technology is planned.

However, the concretely available technologies on a specific OTO/utilization unit are only provided with the service qualification.

Service Availability Qualification Result

Back

Request

ISP 100036 - Sunrise UPC GmbH_SUN (R)
Contr Element BBCS_F (Fiber)
BB Type Fiber
Address Langholzstr. 11, 8618 Oetwil am See

Fiber ok

Location Id 17982500
DN Office -
BB Device Location -
IM Indicator No
IM Order End Date -

List of Sockets Address Site Development 27% BEP

Socket Id	Plug Id	Flat Id	Fiber Line	OTO State	Usage Type
B.101.310.962.7	2	02.04	AVAILABLE	CONNECTED	-
B.101.310.963.5	2	11.02	CONNECTED	CONNECTED	-
B.101.310.964.3	2	11.03	CONNECTED	CONNECTED	-

List of Sockets Address Site Development 27% BEP

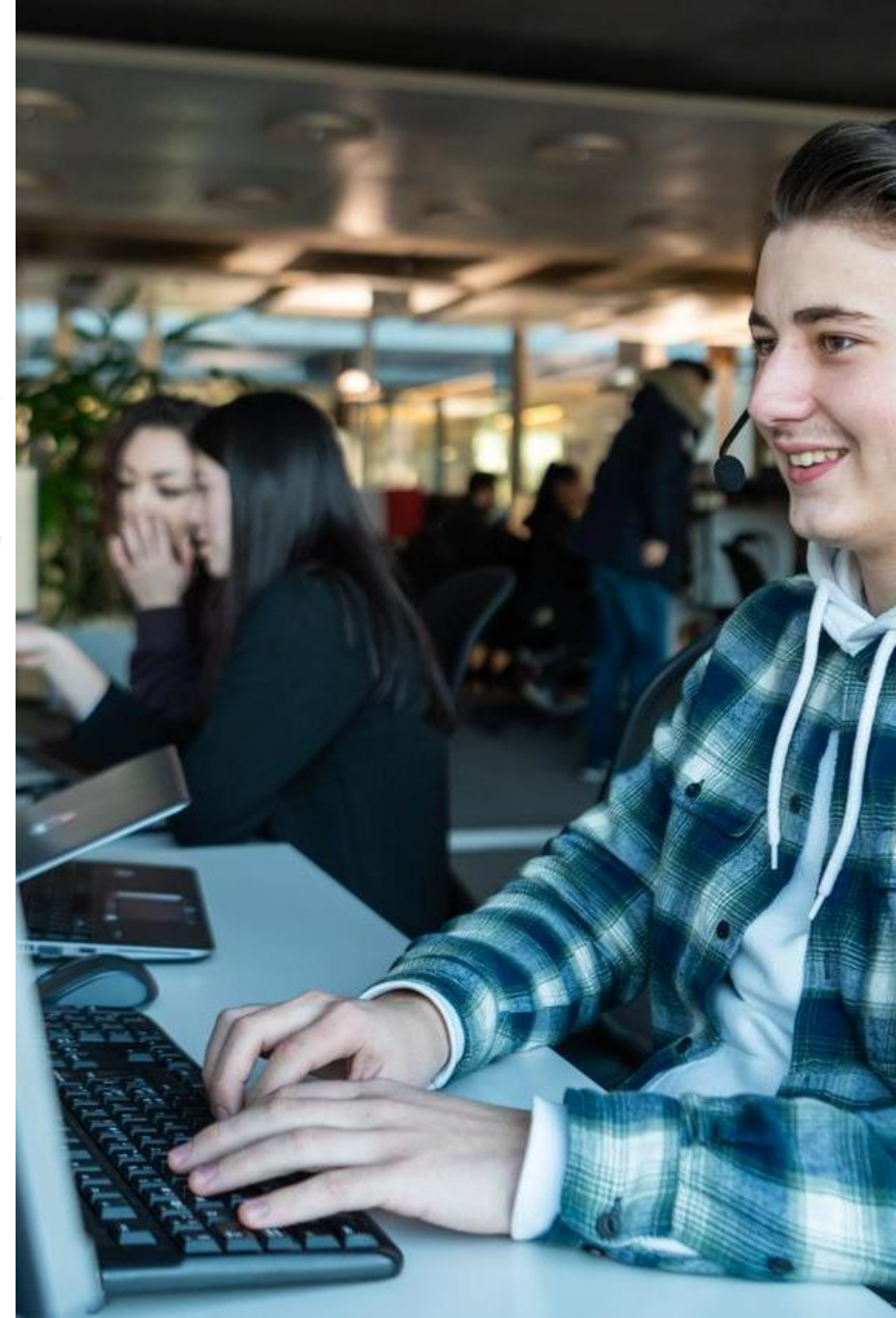
Location Id (BEP) 17982500
Street Schwandenholzstr.
House Nr 24
Building -
ZIP 8052
City Zürich

BEP State CONNECTED
Availability Date/Target Date 31. Jul. 2015
Availability Date Reason -
In House Allowed Yes
Max Access Speed 10 Gbps
BEP Site Category standard

Business State 4 - BEP.Ready
Quality Class
First Inhouse Installation No
Initial Mounting Shaft Capacity not checked
BEP Builder KOPA
Physical Ownership Inhouse ewz der Stadt Zürich Telecom KoPa

Events

Event Type	Event Time Stamp	Event Reason	From	To	Sequence Number
Available Technology					
BB Type	Planned Date				
BX	-				
XGS-PON	-				





Ordering

XGS-PON order process



WSG Service Fulfillment

WSG XGS PON Use Cases

The following Use Case Matrix shows which use case what "OrderType" and/or "BusinessType" for XGS PON is to be used:

From \ To	To BBCS-F BX	To BBCS-F XGS-PON	To ALO (P2P)
BBCS-F BX	Order Type : ISP Change Business Type : ---	Order Type : Create Business Type : TechChange ----- OR ----- Order Type : Create Business Type : ISP Change (beinhaltet Tech Change)	ALO Order Type : Create ALO Business Type : ProductChange (ein ISP Change ist im Order möglich) ----- OR ----- ALO Order Type : Create ALO Business Type : New
BBCS-F XGS-PON	Order Type : Create Business Type : TechChange ----- OR ----- Order Type : Create Business Type : ISP Change (beinhaltet Tech Change)	Order Type : ISP Change Business Type : ---	ALO Order Type : Create ALO Business Type : ProductChange (ein ISP Change ist im Order möglich) ----- OR ----- ALO Order Type : Create ALO Business Type : New
ALO (P2P)	Order Type : Create Business Type : ProductChange ----- OR ----- Order Type : Create Business Type : ISP Change (beinhaltet Product Change)	Order Type : Create Business Type : ProductChange ----- OR ----- Order Type : Create Business Type : ISP Change (beinhaltet Product Change)	ALO Order Type : ISP Change ALO Business Type : ISP Change
FBC BX	Order Type : Create Business Type : New	Order Type : Create Business Type : New	ALO Order Type : Create ALO Business Type : New ----- OR ----- ALO Order Type : Create ALO Business Type : Product Change
FBC XGS-PON	Order Type : Create Business Type : New	Order Type : Create Business Type : New	ALO Order Type : Create ALO Business Type : New ----- OR ----- ALO Order Type : Create ALO Business Type : Product Change
No Service	Order Type : Create Business Type : New	Order Type : Create Business Type : New	ALO Order Type : Create ALO Business Type : New





WSG Service Fulfillment

WSG XGS PON Order

When ordering, the connection is prepared for activation after entering the OTO and plug, profile and service mix and the desired termination type. The ISP will receive the NSN and Activation Code. MAC address is optional:

Detail Order

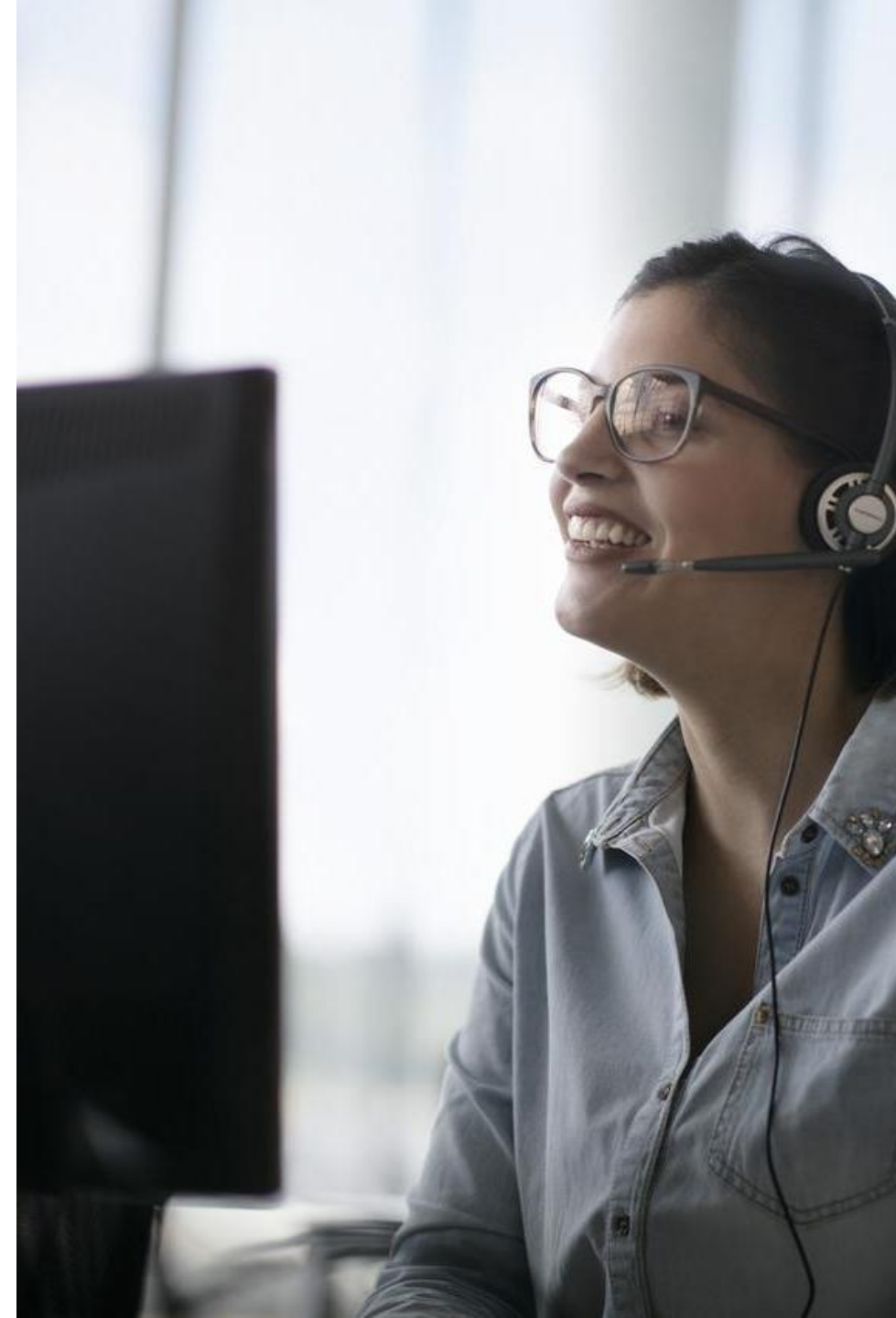
Main Virtual Order Internal Order Tracking CPE Info Predecessor Info

Order Info		DN Info		Qualified Endpoint	
Order Type	BBCS_CREATE	DN / VN / NSN (Requested)	0106527726	DN Office	79LIM
Order State	HOLDING	DN (STNR) / VN / NSN	0106527726	BB Device Location	LIM
Business Type	New	STNR DDI	-	Site	-
Creation Type	New	Dn Type	Netservices number	Site Category	-
Response	Ready for Activation	Date Info		Available Technology Type	-
Sf Exept Prio	Basic	Customer Wish Date	23. Sep. 2020	DSLAM Name	-
Activation Code	513676	Estimated Due Date/Time Start	23. Sep. 2020 10:00	Dslam Type	-
MAC Address	80:41:26:90:8B:7E	Estimated Due Date/Time End	23. Sep. 2020 12:00	Technology Type	-
ISP / Order Nr Info		Termination Data	-	Vectorized	-

If the order is in the order state "Holding" with "Ready for Activation" the end customer can start the activation:

History

#	User Name	Order State	DN (STNR) / VN / NSN	Response	Transaction Date / Time	BB Type	Speed Profile Nr	Responsible User	Kind Of Problem	Responsible User Comment	Comment	Customer Wish Date	Estimated Due Date / Time Start	Estimated Due Date / Time End
Detail	Batch	HOLDING	0106527726	Ready for Activation	23. Sep. 2020 09:53:34.801	XGS-PON	-	-	-	-	-	23. Sep. 2020	23. Sep. 2020 10:00:00	23. Sep. 2020 12:00:00
Detail	Batch	ENTERED	0106527726	Ready for Activation	23. Sep. 2020 09:53:18.142	XGS-PON	-	-	-	-	-	23. Sep. 2020	23. Sep. 2020 10:00:00	23. Sep. 2020 12:00:00
Detail	Manfred Schaufelberger	ENTERED	0106527726	-	23. Sep. 2020 09:51:20.469	XGS-PON	-	-	-	-	-	23. Sep. 2020	23. Sep. 2020 10:00:00	23. Sep. 2020 12:00:00
Detail	Manfred Schaufelberger	ENTERED	0106527726	-	23. Sep. 2020 09:50:19.741	XGS-PON	-	-	-	-	-	23. Sep. 2020	23. Sep. 2020 10:00:00	23. Sep. 2020 12:00:00





WSG Service Fulfillment

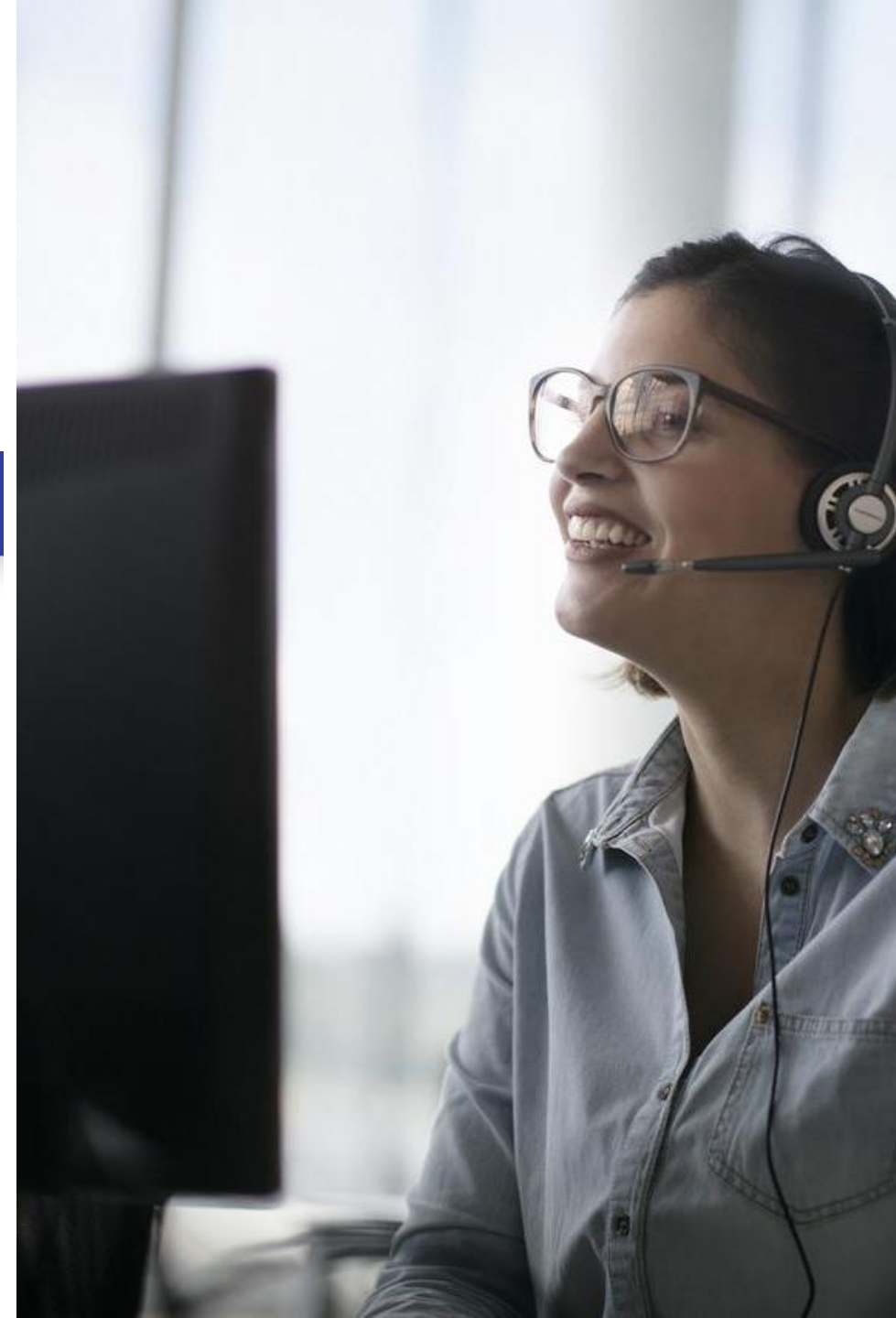
WSG XGS PON Order

The MAC address can be entered when ordering. This type of connection activation is supported for both DHCP and PPP termination. Depending on the manufacturer of the ONT, this may differ for PPP and DHCP:

The screenshot shows the BBCS Access web interface. The top navigation bar includes 'BBCS Access', 'Services', 'Help / Contact', 'Logout', and 'Holger Schori'. The left sidebar contains a menu with 'Place Order' (highlighted), 'Maintain Order', 'Transaction Overview', 'Admin Tasks', 'Documents', 'Reports', and 'Home Page'. A black arrow points to the 'Transaction Overview' menu item. The main content area is titled 'Basis Creation' and contains the following fields:

Customer Wish Date	05 Jun 2024	
Session Type		▼
MAC Address		
Fulfillment SLA	Basic	▼
Creation Type	New	▼

Below the fields is an 'Additional Information' section with a plus sign (+). At the bottom of the form are four buttons: 'Back', 'Continue', 'Compulsory Note', and 'Reset'.





Activation

XGS-PON Activation



Activation with splash page

The activation with splash page is based on the technology known from the preorder. The end customer connects to the internet box (ONT) with his PC or mobile and is accompanied by the activation on the splash page.



Self guided activation

The end customer is accompanied by the splash page through its activation and sees the current progress/status.



Device settings

Depending on the selected device and its settings and limitations, the display of the splash page might be more or less complex.



WSG Service Fulfillment

XGS CREATE : Splash page

XGS-PON Pairing process

After the ONT is connected for the first time in the case of a new connection, the end customer is directed to the splash page after accessing a website 1)

At this point, the OTO ID, the plug and the activation code (which was communicated when the order was created) must be entered, alternatively OTO-ID, Plug and NSN work as well.

After typing, the activation process starts, and the progress is continuously displayed to the customer.

Activate connection EN ▾

This connection has not been activated yet!

Please activate your connection as follows:

Please enter the activation code as well. This consists of either from ten digits (ex. 0123456789), or from six digits (ex. 123456).

Please enter the OTO-ID and the slot number (Plug) of the optical fibre socket to which you have connected your end device.

Activation Code * ⓘ
 ✓

Oto Id * ⓘ
 ✓

Plug Number * ⓘ
 ✓

Confirm

If you have not received an activation code, please contact your service provider to activate your connection. Please have the OTO ID / slot number (plug) ready.

Your connection identification number: AC0.123.123.123



1) Note: Only devices approved and whitelisted for XGS-PON by Swisscom can be operated on an BBCS XGS-PON access



"MAC Based" activation

The FDA assigns the MAC address of the WAN interface to the connection. When the Internet box (ONT) connects to the connection, the stored MAC address initiates the activation of the connection. This works for both DHCP (Vlan ID 10) and PPP (Vlan ID 11) with XGS-PON (DHCP and PPP) and the Preorder (DHCP only).

The MAC address for PPP or DHCP may differ depending on the ONT manufacturer.

↑ Easy, fast activation

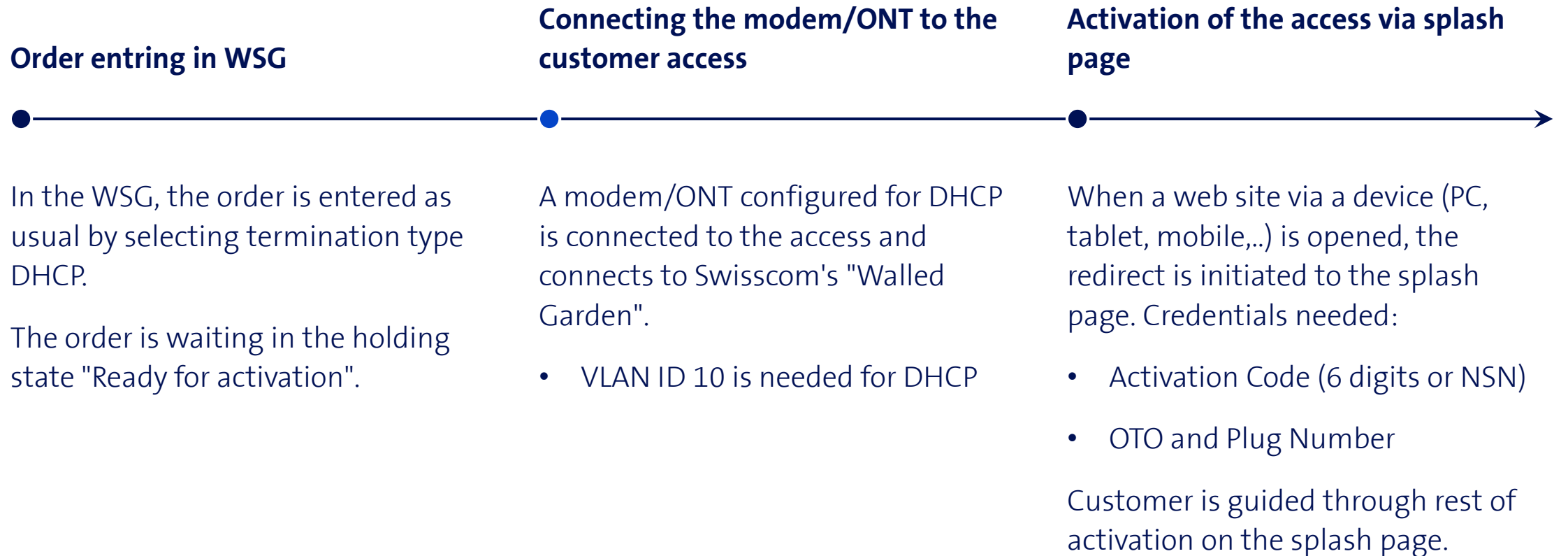
Activation starts automatically with the assigned "Basic Connectivity" and the end customer does not need to connect a PC or mobile device. This not only saves time, it also simplifies the process considerably for the average enduser.

↓ Activation not guides by the network

The end customer is no longer actively guided through the activation. The ISP must integrate this part with the status messages in the WSG in its onboarding process.

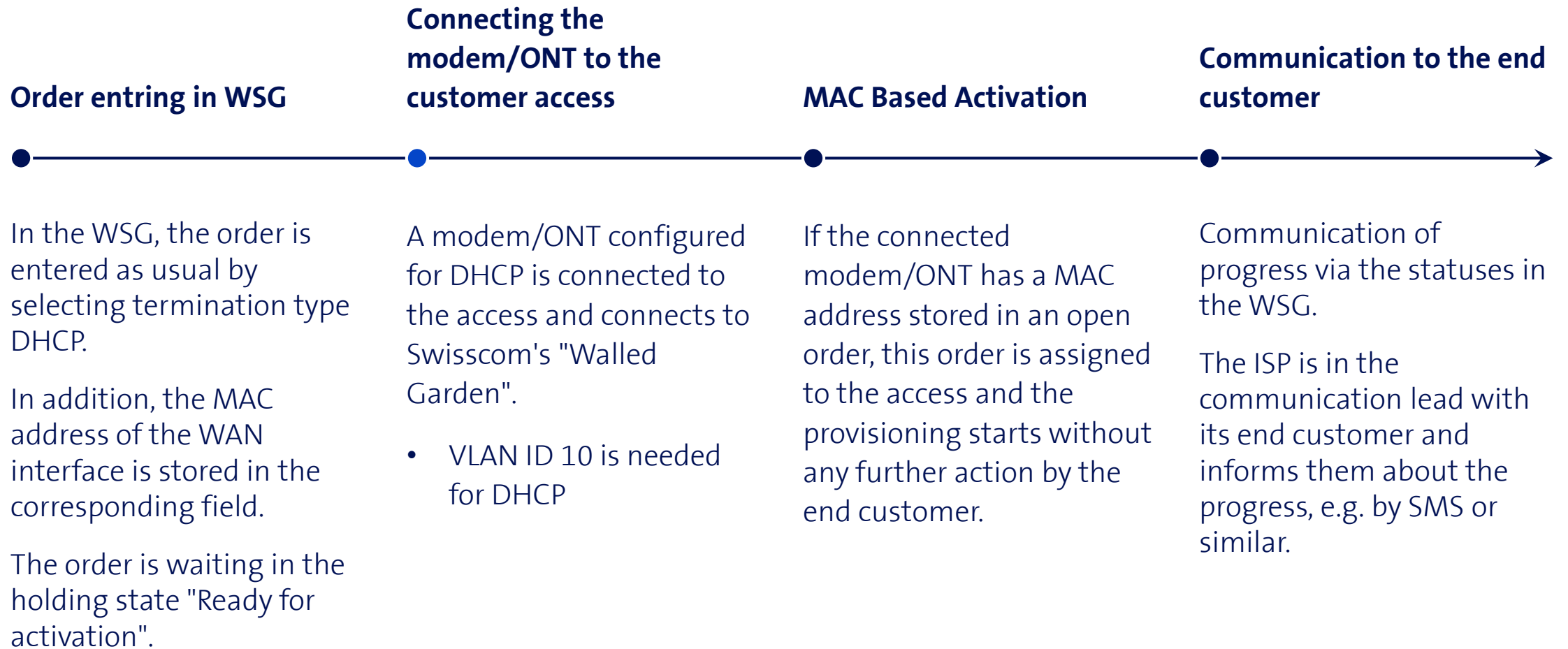


XGS-PON activation on DHCP termination via splash page (similar to DSL with Preorder)



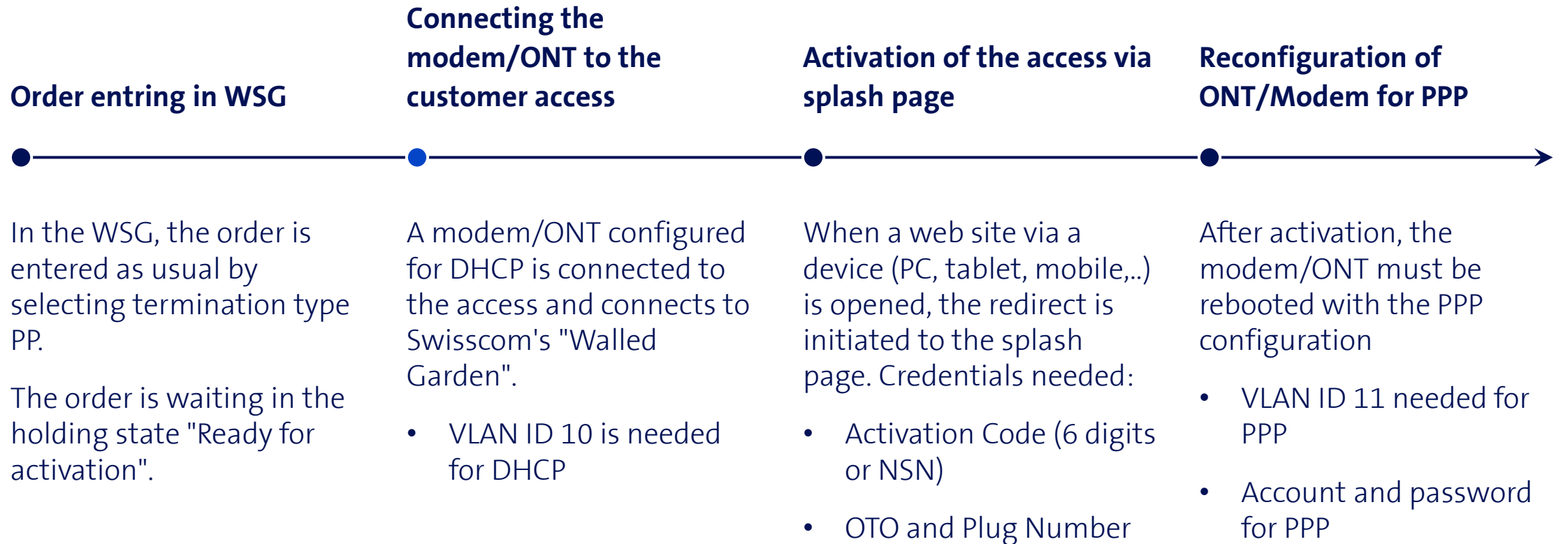


XGS-PON activation on DHCP termination via MAC Based Provisioning (similar to DSL with Preorder)



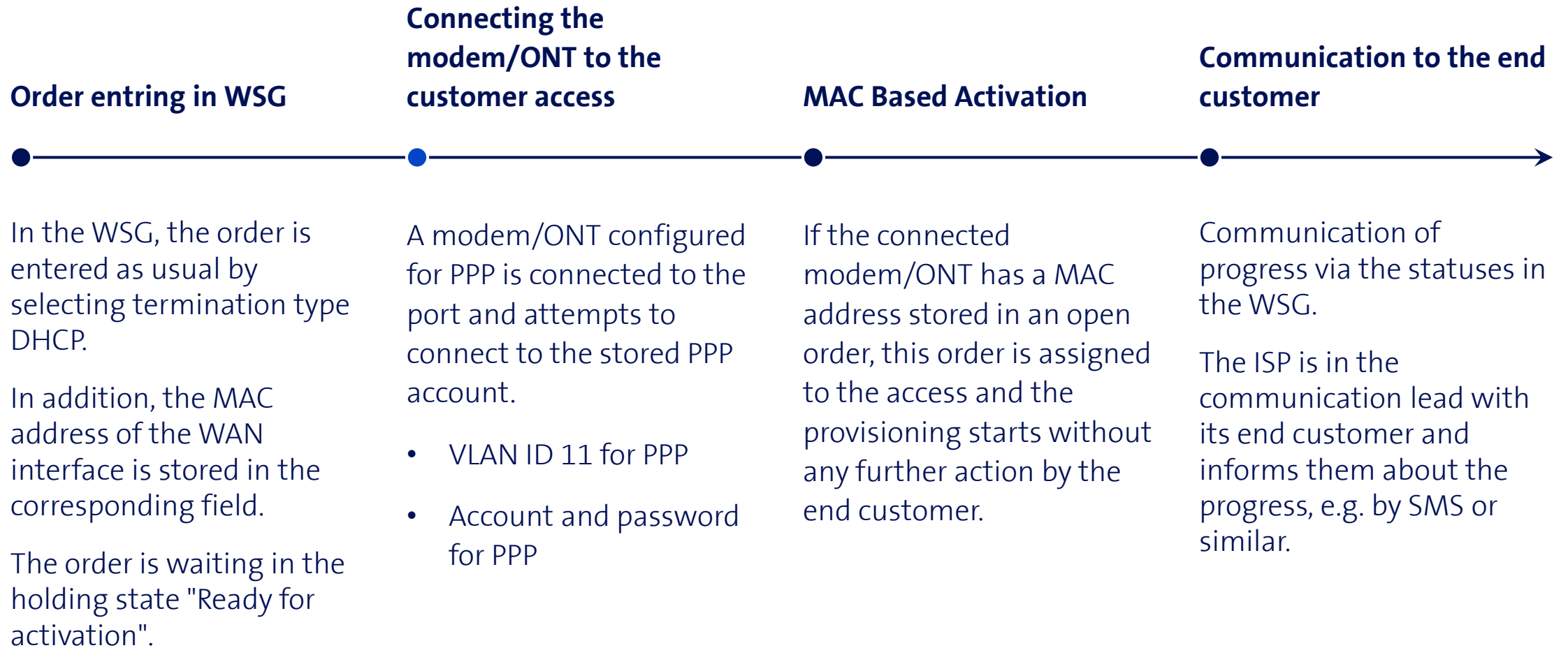


XGS-PON activation on PPP termination via splash page (similar to DSL with Preorder)





XGS-PON activation on PPP termination via MAC Based Provisioning





ONT Change

Replacing the ONT on an existing XGS-PON access



ONT change with XGS-PON

Splash page

- End customer connects the new ONT with DHCP configuration on the OTO and connects its internet access device (PC, tablet, mobile,..) with the ONT
- When a website is first accessed (http traffic), the browser is redirected to Swisscom's splash page
- On the appearing website, the end customer must enter OTO and plug number, as well as the 10-digit activation code (NSN)
- Splash page guides the end customer by activating the new ONT
- Additional for PPP: Reconfiguration of the ONT to PPP afterwards

New unpaired ONT, OTO and plug number, as well as the NSN (10-digit activation code) are required.

MAC based

- ISP registers new WAN MAC address on the connection in the WSG ("ONT Change" in WSG)
- Note: The WAN-side MAC address of the PPP and DHCP configuration may differ.
- End customer connects the new ONT with DHCP or PPP configuration to the OTO socket
- ONT change will be initiated automatically
- ISP informs end customer of progress and completion

WAN MAC address of the new ONT must be assigned to the access. This is done using the procedure "ONT Change" in the WSG.

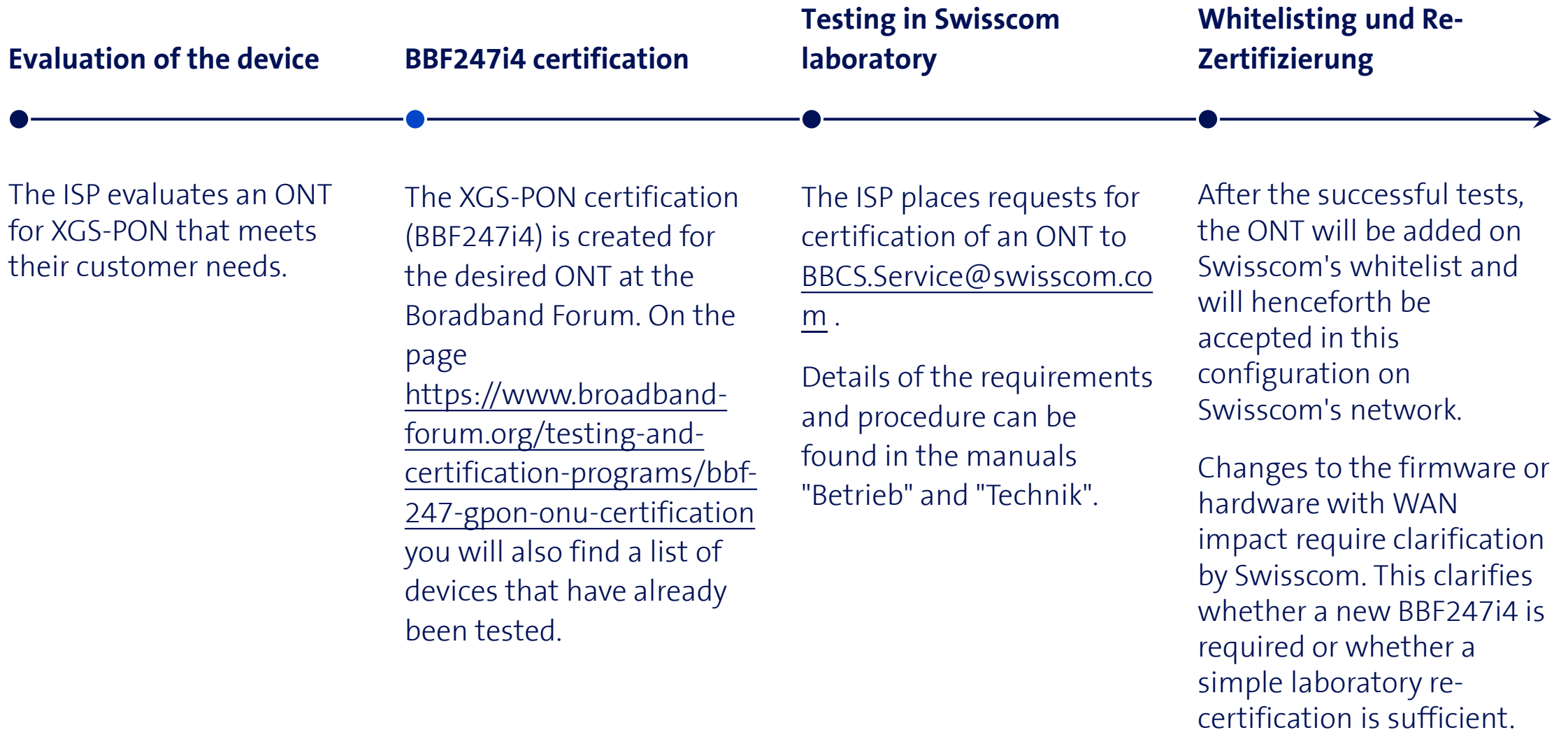


ONT Certification

Process for certification and whitelisting an ONT



Process for certification and whitelisting an ONT for XGS-PON





Overview

BBCS Access Activations

Supported BBCS Access Activation Processes



Overview: BBCS Access Activation Processes

BBCS Copper

BBCS activation process	Termination	
	PPP	DHCP
DN oder NSN	✓	✓
Preorder (on address) by activation code on Splash Page	☑	✓
Preorder (on address) by MAC based prov.	☑	✓

BBCS Fiber

BBCS activation process	Termination	
	PPP	DHCP
Only OTO-ID		
• BX (Create)	✓	✓
• XGS	n.a.	n.a.
Akt-ID by Splash Page and OTO-ID		
• BX (Preorder)	☑	✓
• XGS (Create)	☑	✓
MAC based prov. and OTO-ID		
• BX	n.a.	n.a.
• XGS (Create)	✓	✓

XGS-PON_Anleitung_V1_2, C1 Public

22 ☑ The BBCS can be activated via splash page or MAC-based provisioning if the CPE/router is configured to DHCP. The CPE/router must then be reconfigured to PPP.