

# Peppol

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## PKI Submission Migration testing (for G3)

### User Guide

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## 1 Introduction

This document provides information related to the PKI Submission Complete Migration test suite. Its purpose is to provide a guide on how to use the PKI Submission Migration test suite's user interface. It describes the prerequisites as well as the key steps in carrying out the various test cases. This document's intended audience is Service Providers (SPs) who wish to validate their AP implementations during the migration from G2 AP certificates to G3 AP certificates, ensuring compatibility with both the current (G2 legacy) and upcoming (G3 new) Peppol PKI infrastructure.

### 1.1 Glossary

Abbreviations used in this document:

Abbreviation	Meaning
AP	Access Point
C2	Corner 2, sending AP
C3	Corner 3, receiving AP
CA	Certificate Authority
G2	Refers to the legacy generation of the Peppol PKI
G3	Refers to the next generation of the Peppol PKI
PKI	Public Key Infrastructure
SBD	Standard Business Document
SMK	Test instance of the SML
SML	Service Metadata Locator
SMP	Service Metadata Publisher
SP	Service Provider
SUT	System Under Test
UI	User Interface

*Table 1 glossary*

### 1.2 Process Overview

To execute a Peppol Process within the Peppol network, there are several capabilities that the SPs must have. The Testbed makes it easier to verify these capabilities through a structured predefined testing process.

To achieve this, three test suites for PKI Migration Testing are offered by Peppol, based on the AP's configuration certificate generation. All test suites require the completion of test cases that verify the SP's ability to operate and communicate through the Peppol network, with APs that are configured with either the old or the new PKI infrastructure, according to the Peppol specifications for their Access Points (APs).

This document provides detailed information on the testing process of the PKI Submission Migration Test Suite.<sup>1</sup>

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<sup>1</sup> For the PKI Reception Migration test suite or the PKI Complete Migration test suite you can consult the documents titled "PKI Reception Migration Testing User Guide" and "PKI Complete Migration Testing User Guide", which can be found in each testing environment's downloads section.

## 2 Prerequisites and preparation

### 2.1 Prerequisites

SPs must meet the following requirements before doing any testing.

#### 2.1.1 Peppol PKI AP Test Certificate

SPs are authenticated to the Peppol Testbed using PKI client authentication. As a result, the SP must obtain a Peppol PKI AP test certificate (G2 or G3) and import it into their browser's keystore.

#### 2.1.2 Access Point deployment

SPs must have an AP deployed; as a result, they need the following:

- An AS4 URL available – must refer to HTTPS.
- An AP must be accessible over the Internet.
- An AP must implement HTTPS with certificate chains to Certificate Authorities (CAs), which are trusted by Peppol. Self-signed certificates are considered non-compliant and will not be accepted when using the Testbed.
- The AP must have installed the same Peppol PKI AP test certificate used for the client authentication to the Testbed.
  - If you authenticated to the Testbed with a G2 certificate your AP must also be operated with a G2 certificate.
  - If you authenticated to the Testbed with a G3 certificate your AP must also be operated with a G3 certificate.
- Participant identifiers intended for message reception during testing must be correctly registered in a Peppol SMP.

### 2.2 Supported browsers

We can only guarantee that the Testbed website behaves in the correct manner if you are using any of the below web browsers:

- Google Chrome, version 100.0 and above
- Firefox, version 99.01 and above
- Microsoft Edge, version 101.0 and above

## 2.3 Preparation

A Peppol PKI AP Test Certificate must be installed in your browser before visiting the PKI Migration test suites for the first time.

Client certificate authentication must be setup in your browser according to the following instructions:

[Windows Google Chrome](#)

[Windows Mozilla Firefox](#)

[OS-X Generic](#)

After installing the PKI certificates, go to <https://www.testbed.peppol.org/>, which is the URL of the production Testbed.

When the browser prompts you to identify yourself with a certificate; choose your Peppol PKI AP Test certificate.

The Testbed includes a set of available test suites that are enabled or disabled based on the certificate type imported by the user. You will only have access to test suites compatible with the currently imported certificate. In case of needing to use a disabled test suite (one that is not enabled by your current imported certificate type) you need to clear the cookies in your browser to reset your session and import a certificate that corresponds to the test suite you want to use.

Instructions on clearing browser cookies can be found here:

[Windows Google Chrome](#)

[Windows Mozilla Firefox<sup>2</sup>](#)

[Windows Microsoft Edge<sup>3</sup>](#)

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<sup>2</sup> In some cases when using Mozilla Firefox, even after clearing the cookies the browser does not trigger the certificate selection prompt. If that is the case, you should navigate to the browser settings > “Privacy & Security” and find the “Certificates” section. By clicking on the “View Certificates” option, a certificate manager window will pop-up. In the “Authentication Decisions” tab select the certificate you used for login into Testbed and press “Delete”. Revisit the Testbed page and login using your desired certificate.

<sup>3</sup> In some cases when using Microsoft Edge, even after clearing the cookies the browser does not trigger the certificate selection prompt. If that is the case, you should click on the lock icon on the left side of the URL bar. Select “Your certificate choices” option, and then click on “Reset certificate choices”. A “Reset certificate choices” window will show up on your screen. Select “Reset choices” and refresh the page. You can now login using your desired certificate.

### 3 PKI Migration Testing

The Testbed offers three PKI Migration testing options:

- **PKI Dual-Reception Migration** test suite, which verifies that an SP can receive messages from both the legacy (G2) and new (G3) PKIs while still operating with a G2 certificate.
- **PKI Submission Migration** test suite, which verifies that an SP can send messages using a G3 certificate.
- **PKI Complete Migration** test suite, which includes reception and submission test cases designed to support the full migration to operating with a G3 certificate.

All three test suites are available in the Testbed. However, to execute a given test suite, the tester must log in with the corresponding certificate (G2 for the PKI Reception Migration test suite, G3 for the PKI Complete Migration and Submission Migration test suites).

The following sections describe in detail the testing process for the PKI Submission Migration test suite. For information about the PKI Reception Migration or the PKI Complete Migration test suites, please refer to the corresponding documents.

The PKI Submission Migration test suite is used to help evaluate new AP deployments and ensure compliance with Peppol. The suite is based on self-initiated tests that an end user of the SP system chooses to run. The SP end user enrolls in the test suite, selects which test cases to run, and reviews the results from the from the Testbed's user interface.

To create a PKI Migration testing configuration, a user must first select “ENTER PKI MIGRATION TESTING” in the landing page, as illustrated in Figure 1.

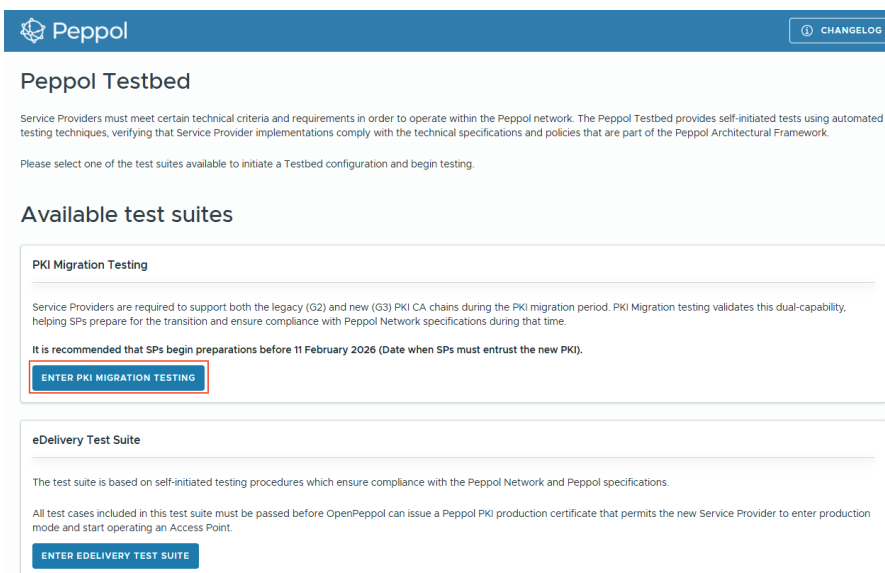
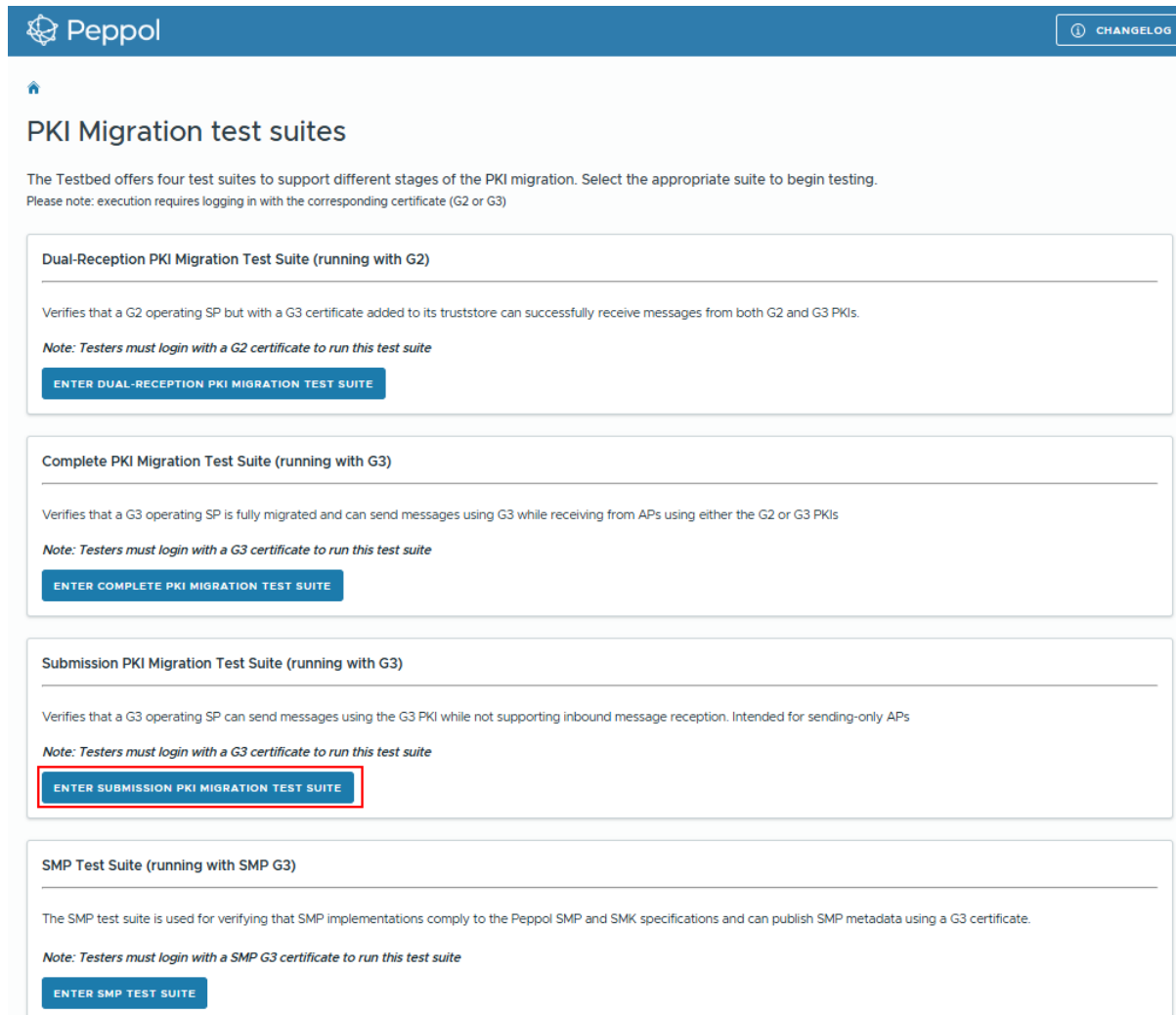


Figure 1 Testbed Landing Page

After the user is navigated to the “PKI Migration Testing” page, the user must select the “ENTER SUBMISSION PKI MIGRATION TEST SUITE” option, in order to enter the PKI Submission Migration testing environment. The UI interface is illustrated in Figure 2.



**Peppol** CHANGELOG

## PKI Migration test suites

The Testbed offers four test suites to support different stages of the PKI migration. Select the appropriate suite to begin testing.  
Please note: execution requires logging in with the corresponding certificate (G2 or G3)

**Dual-Reception PKI Migration Test Suite (running with G2)**

Verifies that a G2 operating SP but with a G3 certificate added to its truststore can successfully receive messages from both G2 and G3 PKIs.

*Note: Testers must login with a G2 certificate to run this test suite*

**ENTER DUAL-RECEPTION PKI MIGRATION TEST SUITE**

**Complete PKI Migration Test Suite (running with G3)**

Verifies that a G3 operating SP is fully migrated and can send messages using G3 while receiving from APs using either the G2 or G3 PKIs

*Note: Testers must login with a G3 certificate to run this test suite*

**ENTER COMPLETE PKI MIGRATION TEST SUITE**

**Submission PKI Migration Test Suite (running with G3)**

Verifies that a G3 operating SP can send messages using the G3 PKI while not supporting inbound message reception. Intended for sending-only APs

*Note: Testers must login with a G3 certificate to run this test suite*

**ENTER SUBMISSION PKI MIGRATION TEST SUITE**

**SMP Test Suite (running with SMP G3)**

The SMP test suite is used for verifying that SMP implementations comply to the Peppol SMP and SMK specifications and can publish SMP metadata using a G3 certificate.

*Note: Testers must login with a SMP G3 certificate to run this test suite*

**ENTER SMP TEST SUITE**

Figure 2 PKI Migration Testing page

### 3.1 PKI Complete Migration Test Suite

When the PKI Migration testing configuration is created, the user is navigated to the documentation page as shown in Figure 3.

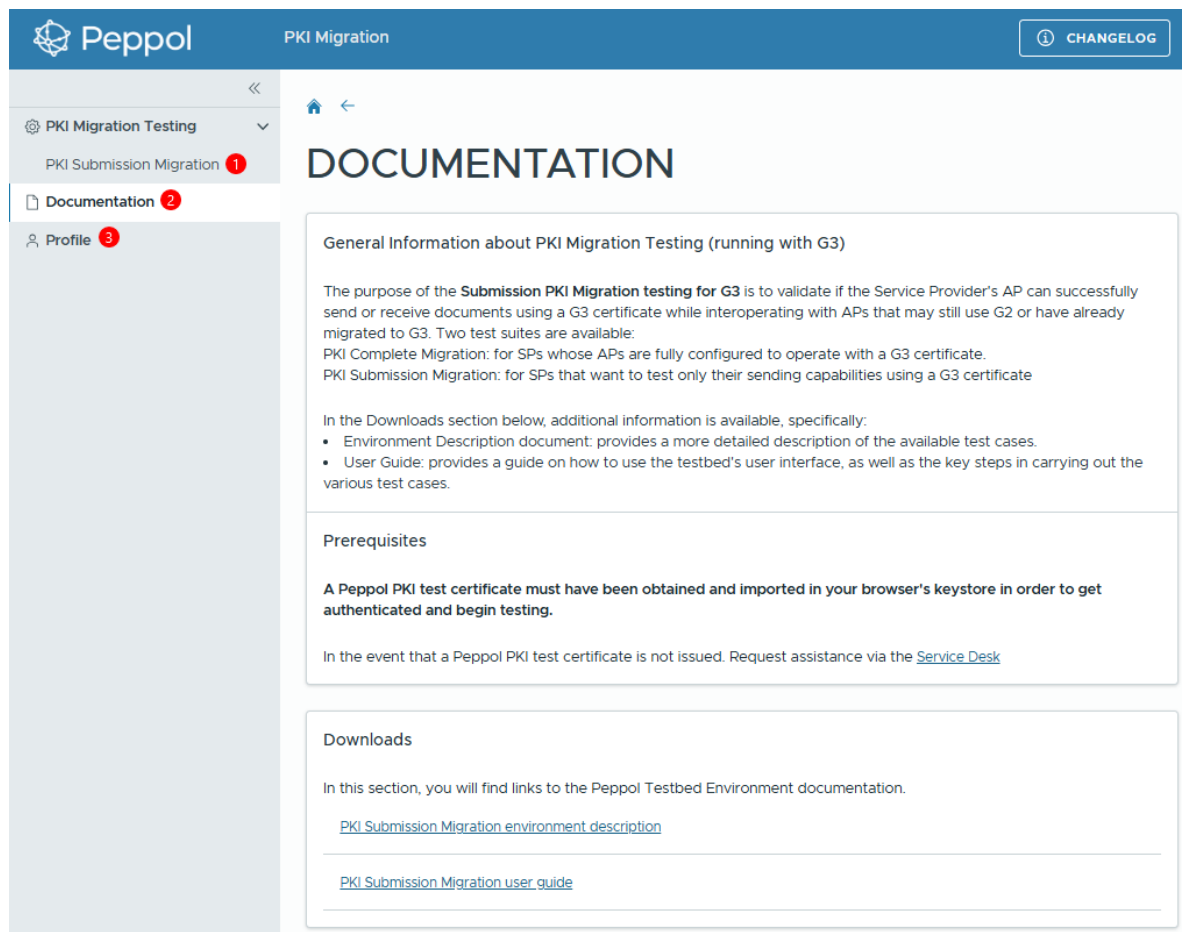
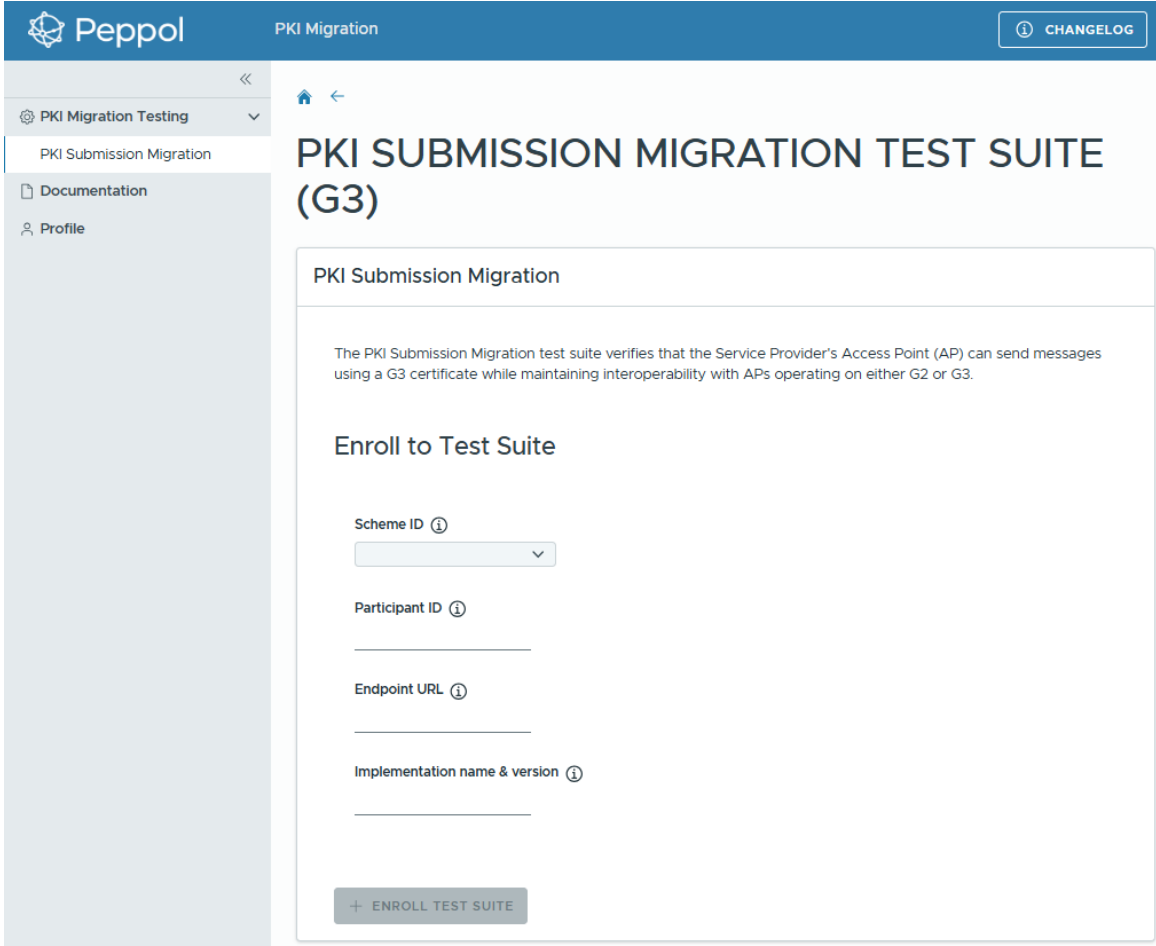


Figure 3 UI overview after PKI Migration configuration

The UI consists of the following pages (as shown in Figure 3):

1. PKI Complete Migration
2. Documentation
3. Profile

The PKI Submission Migration page (shown in Figure 4) is used to enroll to the PKI Submission Migration test suite.



The screenshot shows the Peppol PKI Migration Testing interface. The header includes the Peppol logo, the text "PKI Migration", and a "CHANGELOG" button. The left sidebar contains a dropdown menu for "PKI Migration Testing" with sub-items "PKI Submission Migration", "Documentation", and "Profile". The main content area is titled "PKI SUBMISSION MIGRATION TEST SUITE (G3)". Below the title, there is a section "PKI Submission Migration" with a description: "The PKI Submission Migration test suite verifies that the Service Provider's Access Point (AP) can send messages using a G3 certificate while maintaining interoperability with APs operating on either G2 or G3." Below this is the "Enroll to Test Suite" section, which contains four input fields: "Scheme ID" (a dropdown menu), "Participant ID", "Endpoint URL", and "Implementation name & version". Each field has an information icon. At the bottom of the form is a button labeled "+ ENROLL TEST SUITE".

Figure 4 PKI Submission Migration test suite enrollment

After enrolling to the PKI Submission Migration test suite, the user can choose test cases to execute, as shown in Figure 5, label 1. As illustrated in Figure 5, label 2, the user may also view details about the enrolled configuration.

**Available test cases** 1

Select test case to see more details

G3 message submission with G2 SignalMessage reception Paused

G3 message submission with G3 SignalMessage reception Paused

Enrolled configuration

Participant	9925:testbed-pki-submission-migration-tester <span style="float: right;">2</span>
Endpoint URL	https://smp-test.sandbox.peppol.org/secure
Implementation name & version	PKI SUBMISSION MIGRATION TESTER

## G3 message submission with G2 SignalMessage reception Paused

The Access Point under test **MUST** send the document supplied by the Testbed<sup>1</sup>, signed with a PEPPOL G3 certificate and encrypted with the receiver's registered certificate (G2)<sup>2</sup>.

Upon successful reception, the Testbed will respond with a Signal Message that is signed with a PEPPOL G2 certificate.

In this test, the sender is **9925:testbed-pki-submission-migration-tester** and the receiver is **9922:OPTBCNTRLSB5001**

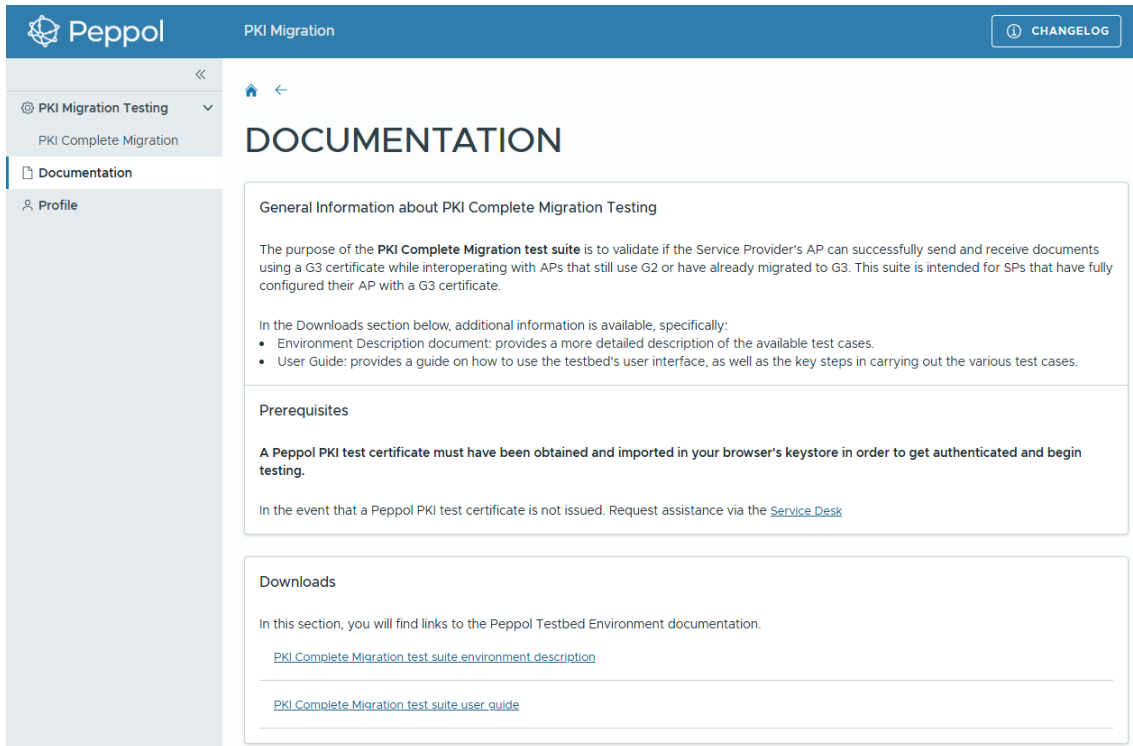
<sup>1</sup>After starting the test case, a ZIP package will become available in the Audit Log section (bottom of the page). It contains the document required to complete this test.

<sup>2</sup>Refers to the certificate published in the SMP for the registered capability of the receiver participant.

▶ START

Figure 5 Example of PKI Submission Migration test case selection

The Documentation page (shown in Figure 6) collects and makes available useful links and resources (e.g., environment documentations, user guides, etc.).

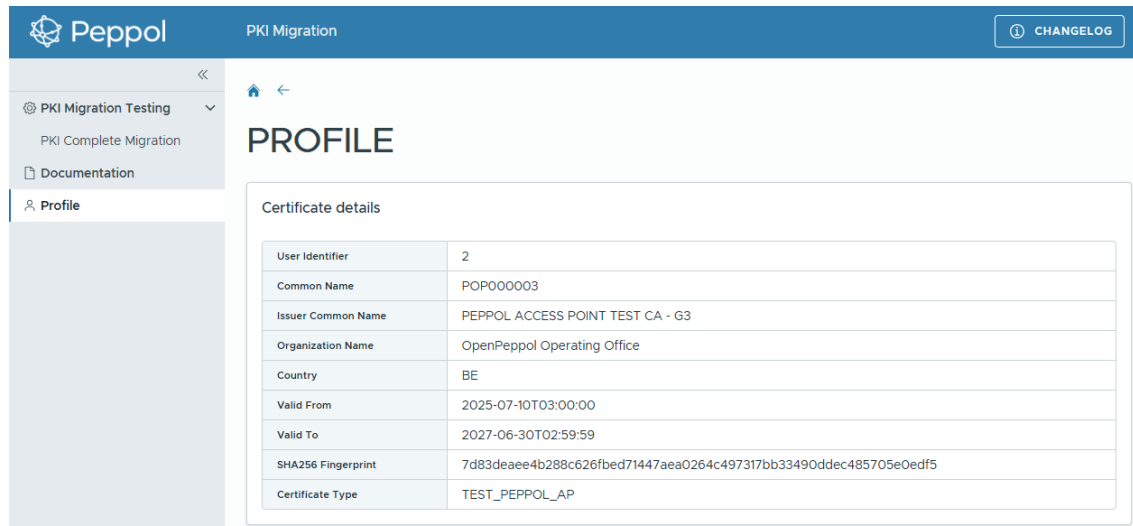


The screenshot shows the 'DOCUMENTATION' page in the Peppol PKI Migration testing environment. The page has a blue header with the Peppol logo and 'PKI Migration' text, and a 'CHANGELOG' button. A left sidebar contains navigation options: 'PKI Migration Testing' (selected), 'PKI Complete Migration', 'Documentation', and 'Profile'. The main content area is titled 'DOCUMENTATION' and contains the following sections:

- General Information about PKI Complete Migration Testing**: Explains the purpose of the test suite and lists additional information available in the Downloads section.
  - Environment Description document: provides a more detailed description of the available test cases.
  - User Guide: provides a guide on how to use the testbed's user interface, as well as the key steps in carrying out the various test cases.
- Prerequisites**: States that a Peppol PKI test certificate must be obtained and imported into the browser's keystore. A link to the Service Desk is provided for assistance.
- Downloads**: Lists links to the 'PKI Complete Migration test suite environment description' and 'PKI Complete Migration test suite user guide'.

Figure 6 Documentation Page

The Profile page (shown in Figure 7) provides details about the user account that the Testbed creates using the Peppol PKI AP Test Certificate that was imported into the browser.



The screenshot shows the 'PROFILE' page in the Peppol PKI Migration testing environment. The page has a blue header with the Peppol logo and 'PKI Migration' text, and a 'CHANGELOG' button. A left sidebar contains navigation options: 'PKI Migration Testing', 'PKI Complete Migration', 'Documentation', and 'Profile' (selected). The main content area is titled 'PROFILE' and contains a 'Certificate details' table:

Certificate details	
User Identifier	2
Common Name	POPO00003
Issuer Common Name	PEPPOL ACCESS POINT TEST CA - G3
Organization Name	OpenPeppol Operating Office
Country	BE
Valid From	2025-07-10T03:00:00
Valid To	2027-06-30T02:59:59
SHA256 Fingerprint	7d83deae4b288c626fbed71447aea0264c497317bb33490ddec485705e0edf5
Certificate Type	TEST_PEPPOL_AP

Figure 7 Profile Page

### 3.1.1 PKI Complete Migration Test Suite Walkthrough

This part aims to show you how to use and complete the PKI Submission Migration test suite. This part requires that you have correctly setup your browser by installing a Peppol PKI AP test certificate as specified in section 2.3.

Navigate to <https://www.testbed.peppol.org/> after installing a Peppol PKI AP test certificate in your browser and select the PKI Migration test suite from the landing page, as shown in Figure 1.

If this is your first time using the PKI Submission Migration test suite, you must first enroll in the test suite by providing the following information:

**Participant ID and Scheme ID:** Give a valid participant identifier. All the test cases available in the test suite will be carried out by using these identifiers.

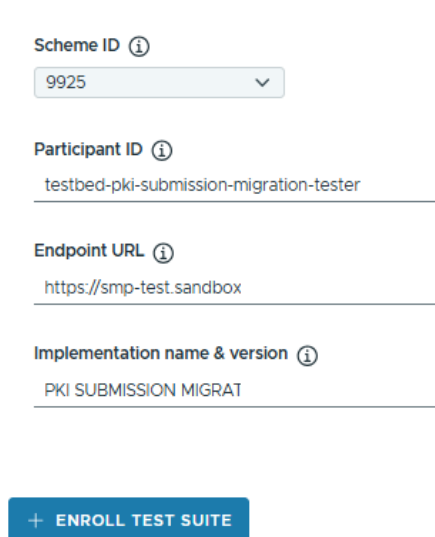
**Endpoint URL:** The participant's AS4 endpoint URL

**Implementation name & version:** Give a name and version for your AP implementation.

After filling in the information, click the “ENROLL TEST SUITE” button.

An example filled-in the enrollment form is shown in Figure 8.

#### Enroll to Test Suite



The screenshot shows a form titled "Enroll to Test Suite" with the following fields:

- Scheme ID** (with an information icon): A dropdown menu showing "9925".
- Participant ID** (with an information icon): A text input field containing "testbed-pki-submission-migration-tester".
- Endpoint URL** (with an information icon): A text input field containing "https://smp-test.sandbox".
- Implementation name & version** (with an information icon): A text input field containing "PKI SUBMISSION MIGRAT".

At the bottom of the form is a blue button with a white plus sign and the text "ENROLL TEST SUITE".

*Figure 8 Example AP filled-in form*

You will be presented with the available test cases for this test suite once you have successfully enrolled. Figure 9 illustrates this.

The following are the test cases included in the PKI Submission Migration test suite:

- G3 message submission with G2 SignalMessage reception

- G3 message submission with G3 SignalMessage reception

It's worth noting that the PKI Submission Migration test suite's test cases don't have to be performed in order. Instead, every test case is ready to be run at any moment. The sole restriction is that **only one test case may run at a time**.

Available test cases	
Select test case to see more details	
G3 message submission with G2 SignalMessage reception	Paused
G3 message submission with G3 SignalMessage reception	Paused

*Figure 9 PKI Submission Migration available test cases*

Figure 10 provides a complete visual representation of each test case UI element. As shown in Figure 10, label 2, each test case contains a title, a status, and a description.

When conducting each test case, make sure to follow the test case description. You can start a test case by pressing the "Start" button showcased in Figure 10, label 3. The configuration created by the user during the test suite enrollment is shown in Figure 10, label 4. As illustrated in Figure 10, label 5, audit logs of events are available that comprise the timing of the occurrence, the action done, a description and a status. Finally, if you wish to re-enroll in a new PKI Submission Migration test suite configuration and reset the current test suite and all its progress, select the "RESET TEST SUITE" button (Figure 10, label 6) and re-enroll in a new test suite.

PKI Submission Migration
RESET TEST SUITE

The PKI Submission Migration test suite verifies that the Service Provider's Access Point (AP) can send messages using a G3 certificate while maintaining interoperability with APs operating on either G2 or G3.

**Available test cases**  
Select test case to see more details

G3 message submission with G2 SignalMessage reception	<span style="border: 1px solid #007bff; border-radius: 10px; padding: 2px 5px; font-size: 0.8em;">Paused</span>
G3 message submission with G3 SignalMessage reception	<span style="border: 1px solid #007bff; border-radius: 10px; padding: 2px 5px; font-size: 0.8em;">Paused</span>

Enrolled configuration

Participant	9925:testbed-pki-submission-migration-tester
Endpoint URL	https://smp-test.sandbox.peppol.org/secure
Implementation name & version	PKI SUBMISSION MIGRATION TESTER

### G3 message submission with G2 SignalMessage reception

**The Access Point under test MUST send the document supplied by the Testbed<sup>1</sup>, signed with a PEPPOL G3 certificate and encrypted with the receiver's registered certificate (G2)<sup>2</sup>.**

Upon successful reception, the Testbed will respond with a Signal Message that is signed with a PEPPOL G2 certificate.

In this test, the sender is 9925:testbed-pki-submission-migration-tester and the receiver is 9922:OPTBCNTRLSB5001

<sup>1</sup>After starting the test case, a ZIP package will become available in the Audit Log section (bottom of the page). It contains the document required to complete this test.

<sup>2</sup>Refers to the certificate published in the SMP for the registered capability of the receiver participant.

▶ START

### Audit Log

Event Time	Action	Description	Test Case Status
<div style="display: flex; justify-content: center; align-items: center; gap: 10px;"> <span>⌵</span> </div>			

Figure 10 Test case overview

### 3.1.1.1 G3 message submission with G2 SignalMessage reception

In the “**G3 message submission with G2 SignalMessage reception**” test case, the SUT AP is expected to send the prepared SBD containing a BIS Billing 3.0 Invoice payload to the Testbed AP. The AS4 message must be signed with a valid G3 certificate. The SUT must perform a BIS Billing 3.0 Invoice (busdox) capability lookup before submission. The document is generated by the Testbed and is expected to be send according to the test case’s instructions provided by the Testbed, that can be found in the test case description, and “START” audit log instructions. The sender will be the participant provided during enrollment (participant id and scheme id), and the receiver will be the Testbed’s environment AP. Start the test case, and read the information given in the “**START**” audit log. Before sending the file, do not alter it in any way, as the Testbed may have trouble correlating it appropriately.

During the AS4 message exchange, the Testbed replies to the SUT with a SignalMessage, that has been signed using a valid G2 certificate. While the migration window is still open (up to T2) the SUT AP’s expected behavior is to accept the transaction, so that the exchange is concluded.

Figure 11, illustrates a successful transaction.

Available test cases  
Select test case to see more details

G3 message submission with G2 SignalMessage reception	Passed
G3 message submission with G3 SignalMessage reception	Paused

> Enrolled configuration

## G3 message submission with G2 SignalMessage reception Passed

The Access Point under test **MUST** send the document supplied by the Testbed<sup>1</sup>, signed with a PEPPOL G3 certificate and encrypted with the receiver’s registered certificate (G2)<sup>2</sup>.

Upon successful reception, the Testbed will respond with a Signal Message that is signed with a PEPPOL G2 certificate.

In this test, the sender is 9925:testbed-pki-submission-migration-tester and the receiver is 9922:OPTBCNTRLSB5001

<sup>1</sup>After starting the test case, a ZIP package will become available in the Audit Log section (bottom of the page). It contains the document required to complete this test.

<sup>2</sup>Refers to the certificate published in the SMP for the registered capability of the receiver participant.

▶ START

## Audit Log

Event Time	Action	Description	Test Case Status
2025-11-20T12:40:52	START	Here is a prepared <a href="#">ZIP package</a> , download it locally and extract its contents. It contains one or more files that are ready to be sent by your Access Point implementation. Please send them in any sequence you like and be observant of any errors that would occur. Do not manipulate the files in any way before sending them, otherwise the Test Bed might experience problems correlating them appropriately.	Running
2025-11-20T12:42:02	RECEIVE	Received file: POPO00003-31-20251120T124054. It matched correctly and was expected to be seen.	Passed

Figure 11 G3 message submission with G2 SignalMessage reception example

### 3.1.1.2 G3 message submission with G3 SignalMessage reception

In the “**G3 message submission with G3 SignalMessage reception**” test case, the SUT AP is expected to send the prepared SBD containing a BIS Billing 3.0 Invoice payload to the Testbed AP. The AS4 message must be signed with a valid G3 certificate. The SUT must perform a BIS Billing 3.0 Invoice (busdox) capability lookup before submission. The document is generated by the Testbed and is expected to be send according to the test case’s instructions provided by the Testbed, that can be found in the test case description, and “**START**” audit log instructions. The sender will be the participant provided during enrollment (participant id and scheme id), and the receiver will be the Testbed’s environment AP. Start the test case, and read the information given in the “**START**” audit log. Before sending the file, do not alter it in any way, as the Testbed may have trouble correlating it appropriately.

During the AS4 message exchange, the Testbed replies to the SUT with a SignalMessage, that has been signed using a valid G3 certificate. The SUT AP’s expected behavior is to accept the transaction, so that the exchange is concluded.

Figure 12 illustrates a successful transaction. When the test suite is complete (all test cases have been passed) you may also download a PDF report as shown in Figure 12, label 1.



**G3 message submission with G3 SignalMessage reception**

The Access Point under test **MUST** send the document supplied by the Testbed, **signed with a PEPPOL G3 certificate and encrypted with the receiver's registered certificate (G3)**.

Upon successful reception, the Testbed will respond with a Signal Message that is **signed with a PEPPOL G3 certificate**.

In this test, the sender is **9925:testbed-pki-submission-migration-tester** and the receiver is **9922:OPTBCNTRLSB5002**

\*After starting the test case, a ZIP package will become available in the Audit Log section (bottom of the page). It contains the document required to complete this test.

\*\*Refers to the certificate published in the SMP for the registered capability of the receiver participant.

**START**

Re-execution of passed test cases in a completed test suite is disabled. Please reset the test suite to start over.

## Audit Log

Event Time	Action	Description	Test Case Status
2025-11-20T12:42:38	START	Here is a prepared <a href="#">ZIP-package</a> , download it locally and extract its contents. It contains one or more files that are ready to be sent by your Access Point implementation. Please send them in any sequence you like and be observant of any errors that would occur. Do not manipulate the files in any way before sending them, otherwise the Test Bed might experience problems correlating them appropriately.	Running
2025-11-20T12:43:15	RECEIVE	Received file: POP000003-32-20251120T124237. It matched correctly and was expected to be seen.	Passed

Figure 12 G3 message Submission with G3 SignalMessage reception example