



Peppol

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Peppol Testbed

eDelivery test suite environment description

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Table of Contents

1	Introduction	3
2	Testing Process	3
2.1	Overview	3
2.1.1	System.....	3
2.1.2	Process.....	4
2.2	Prerequisites.....	4
2.2.1	Peppol PKI Test Certificate	4
2.2.2	Access Point deployment	5
3	eDelivery Testing	5
3.1	eDelivery test suite.....	5
3.1.1	TC2A.1: TLS grading verification.....	5
3.1.2	TC2A.2B: AS4 message reception	6
3.1.3	TC2A.3: AS4 message submission	7
3.1.4	TC2A.4: Invalid certificate handling	8
3.1.5	TC2A.5B: Large AS4 message reception.....	9
3.1.6	TC2A.6: Large AS4 message submission	10

1 Introduction

This document provides information related to the Testbed eDelivery test suite. It aims at providing a more detailed description of the environment and the testing process. This document's intended audience is Service Providers (SPs) interested in implementing Peppol.

2 Testing Process

2.1 Overview

Peppol defines a number of technical criteria and capabilities that SPs must have in order to operate within the Peppol network. By providing the Testbed eDelivery test suite environment and establishing a testing procedure, OpenPeppol will make it simple for SPs to become familiar with all the different needed capabilities and will assist them in validating and verifying them. The sections that follow provide a high-level overview of the test environment system components as well as the testing procedure.

2.1.1 System

The Peppol Testbed consists of the following components, as indicated in Figure 1:

AP Validation Tool

Verify that the SP system's deployed Access Point (AP) complies to Peppol eDelivery specifications.

Access Point, SMK, Peppol Directory, SMP

These components are used in the test that require eDelivery network simulation.

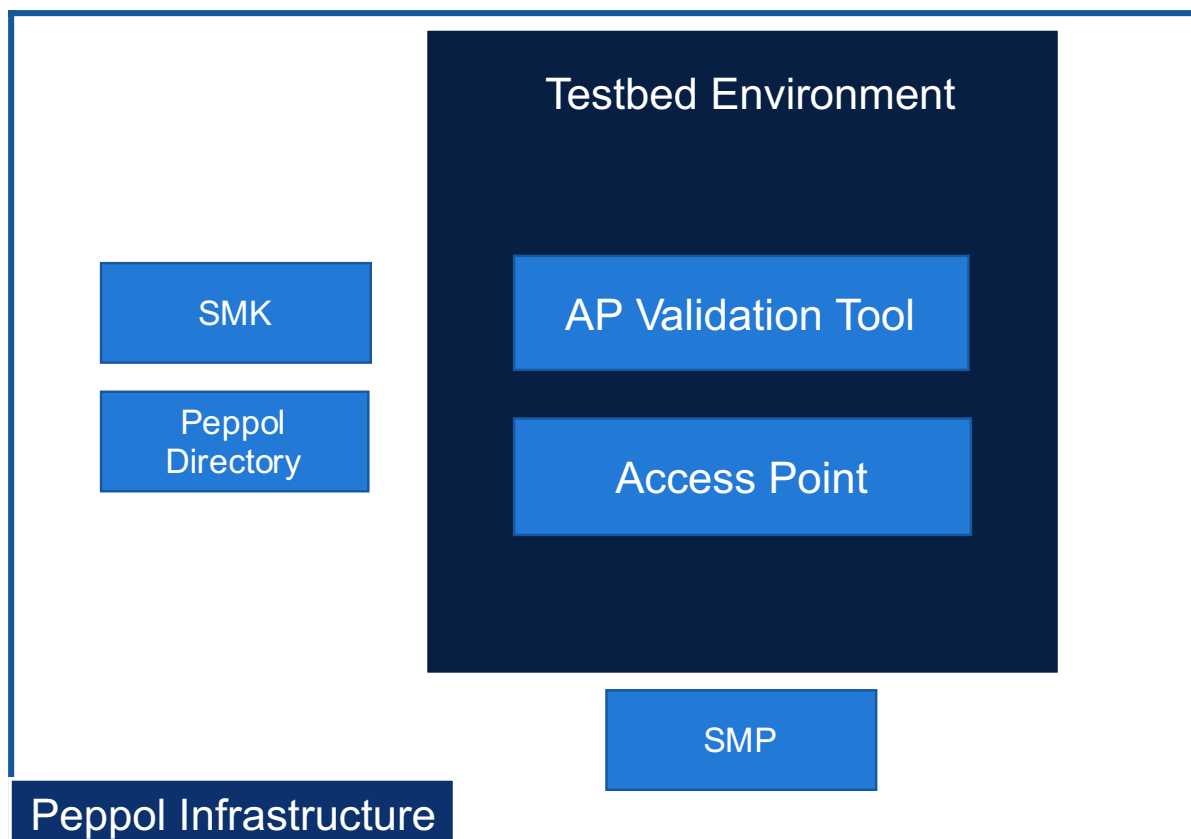


Figure 1 Overview of Testbed infrastructure

2.1.2 Process

In order a Peppol BIS Process to be executed within the Peppol network, there are several capabilities that the SPs must have. Through a structured predefined testing process, Testbed will make it easier to verify these capabilities.

To achieve this, an eDelivery test suite is offered, which requires the completion of certain test cases that verify the SP's capabilities.

2.2 Prerequisites

SPs must meet the following requirements before doing any testing.

2.2.1 Peppol PKI Test Certificate

SPs are authenticated to the Testbed using PKI client authentication. As a result, the SP must have obtained a Peppol PKI test certificate and have it imported in their browser's keystore.

2.2.2 Access Point deployment

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

- AS4 URL available – must refer to HTTPS
- AP must be accessible over the internet
- AP must implement HTTPS with certificate chains to Certificate Authorities (CAs) which are trusted by Peppol.
- AP must have installed the same Peppol PKI AP test certificate used for the authentication to the Testbed environment.

3 eDelivery Testing

eDelivery Testing is designed to ensure that Service Providers (SPs) have properly deployed and configured a Peppol eDelivery compliant Access Point (AP). The test cases that are part of the eDelivery test suite are described in the sections that follow. In addition, in all test cases there is an end user of the SP system that enrolls to the test suites, chooses which test cases to be executed and also reads the validation results (this interaction is omitted from the following test case interaction diagrams for brevity reasons).

3.1 eDelivery test suite

The AP testing is intended to test that the SP's Access Point implementation adheres to the Peppol AS4 specification and that the SMP and SMK specifications are followed.

The following test cases are included:

3.1.1 TC2A.1: TLS grading verification

In this test case the TLS configuration of the AP will be evaluated as shown as in Figure 2. To be compliant to the Peppol Transport Security Policy, the SUT AP implementation must be graded A or higher by SSL Labs.

Prerequisites:

- An SUT AP deployment that implements HTTPS with certificate chains to Certificate Authorities (CAs) which are trusted by Peppol.
- AP AS4 URL available that refers to HTTPS and accessible over the internet
- A Peppol PKI AP test certificate installed in the SUT AP and also imported in the tester's browser

The steps for carrying out the execution of TC2A.1 are as follows, as indicated in Figure 2:

1. The SP's end-user initiates the test case's execution and asks the Testbed for a TLS evaluation of the SP's AP endpoint URL
2. Using a TLS grading tool made available by Qualys SSL labs, Testbed evaluates the TLS configuration of the SP's AP endpoint URL
3. The Testbed provides the SP's end user with a link to a report along with the results of the TLS compliance grading analysis conducted by Qualys SSL labs tool

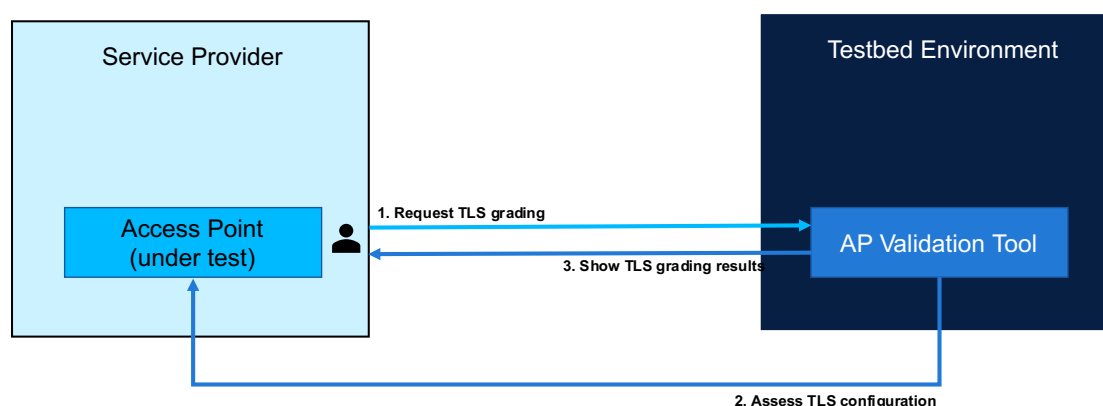


Figure 2 TLS grading verification

Expected results: Verification of the AP's support to Peppol's transport level security requirements regarding TLS (HTTPS) support.

3.1.2 TC2A.2B: AS4 message reception

In this testcase the SP will have to demonstrate their ability to receive a message that adheres to Peppol eDelivery AS4 directly, without the need for an SMK/SMP. This test case doesn't require participant addressing information to be correctly registered in an SMK/SMP to receive the message.

Testbed prepares a BIS document and sends it via the AS4 protocol straight to the AP as shown in Figure 3. The dynamic discovery of the participant through the SMK/SMP is skipped, and the AS4 message is received directly by the AP.

Prerequisites:

- AP AS4 URL available that refers to HTTPS and accessible over the internet
- A Peppol PKI AP test certificate installed in the SUT AP and also imported in the tester's browser

The steps for carrying out the execution of TC2A.2B are as follows, as indicated in Figure 3:

1. Testbed generates a BIS document (SBD file) to be sent to the SUT AP.
2. The AP of the Testbed acts as a document sender and sends the AS4 message directly to the SUT AP's endpoint URL (no SMP necessary) and the SUT AP receives the message.
3. Upon reception of the AS4 message, the SUT AP sends an AS4 message receipt back to the Testbed.

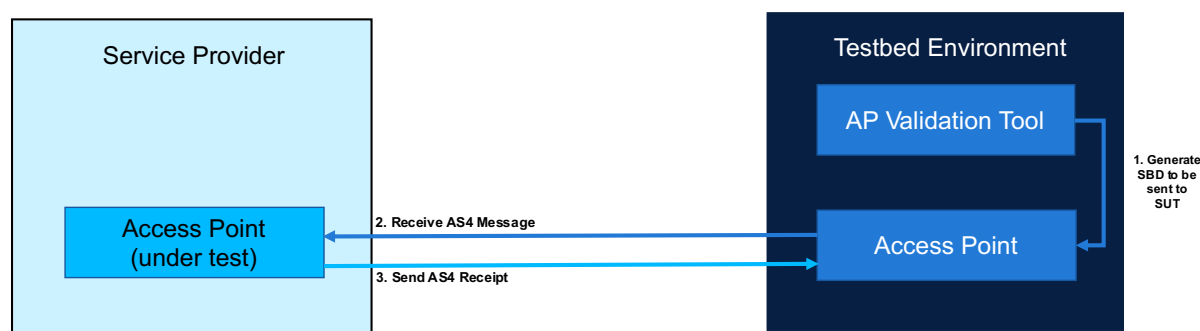


Figure 3 AS4 message reception

Expected results: Verification of SUT AP's ability to receive messages using the Peppol AS4 protocol.

3.1.3 TC2A.3: AS4 message submission

In this testcase the SUT AP will have to demonstrate the ability to submit a message that adheres to Peppol eDelivery AS4 profile and dynamically discover a participant's addressing information using SMK/SMP.

The Testbed environment generates an SBD to be sent by the AP. The AP takes the document and needs to send it back to the Testbed as shown in Figure 4. In this step the SMP lookup through DNS resolution in the SMK is used to test the dynamic lookup mechanism.

Prerequisites:

- AP AS4 URL available that refers to HTTPS and accessible over the internet
- A Peppol PKI AP test certificate installed in the SUT AP and also imported in the tester's browser

The steps for carrying out the execution of TC2A.3 are as follows, as indicated in Figure 4:

1. Testbed generates zip package that contains a ready to be sent BIS document (SBD file) to be sent by the SUT AP
2. The SUT AP acts as the document sender and performs an SMK lookup to locate the Testbed participant's SMP
3. The SUT AP queries the located Testbed SMP for the receiving capabilities of the Testbed's AP and retrieves the metadata necessary to transmit the AS4 message to the recipient endpoint
4. The SUT AP sends the AS4 message (SBD file) prepared in step 1 by the Testbed AP
5. The SUT AP receives an AS4 message receipt from the Testbed's AP

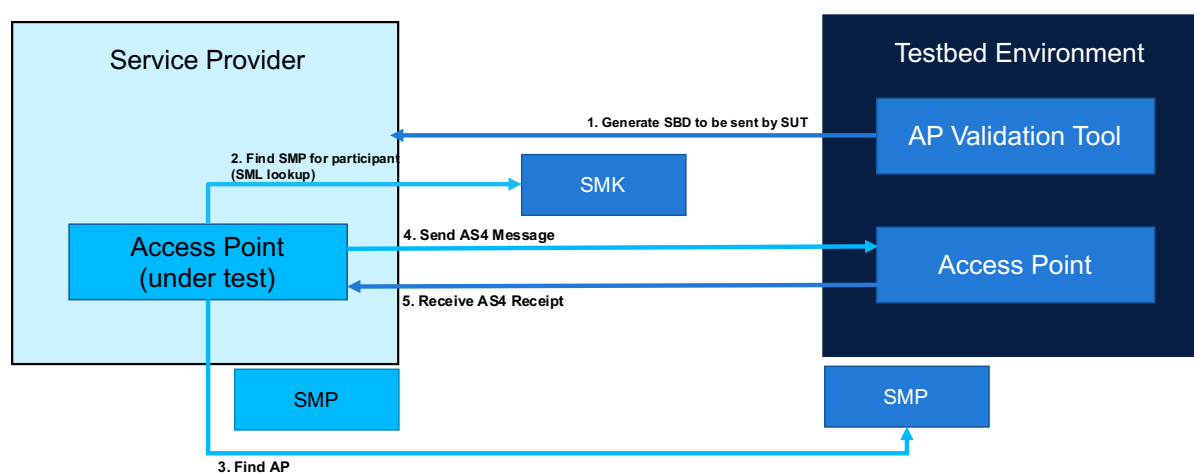


Figure 4 AS4 Submission

Expected results: Verification of SUT AP ability to successfully find recipient participant's information through SMP lookup and correctly submit a message using Peppol AS4 protocol.

3.1.4 TC2A.4: Invalid certificate handling

In this testcase the SUT AP will have to demonstrate the ability to reject transactions originating from an invalid certificate. The AP must implement HTTPS with certificate chains to CAs trusted by Peppol to comply with Peppol Transport Security Policy. The Testbed will generate a message using revoked certificates, and the SUT AP must be able to reject sending this message as shown in Figure 5.

- An SUT AP deployment that implements HTTPS with certificate chains to Certificate Authorities (CAs) which are trusted by Peppol.
- AP AS4 URL available that refers to HTTPS and accessible over the internet

- A Peppol PKI AP test certificate installed in the SUT AP and also imported in the tester's browser

The steps for carrying out the execution of TC2A.4 are as follows, as indicated in Figure 5:

1. The Testbed generates a zip package that contains three ready to be sent BIS documents (SBD files) by the SUT AP
2. The SUT AP acts as the document sender and performs an SMK lookup to locate the Testbed participant's SMP
3. The SUT AP queries the located Testbed SMP for the receiving capabilities of the Testbed's AP and retrieves the metadata necessary to transmit the AS4 message to the recipient endpoint
4. The SUT AP sends the three AS4 messages (SBD files) prepared in step 1 by the Testbed AP. One of the three messages are created using a revoked certificate. The SUT AP needs to recognize the error and not send the invalid message

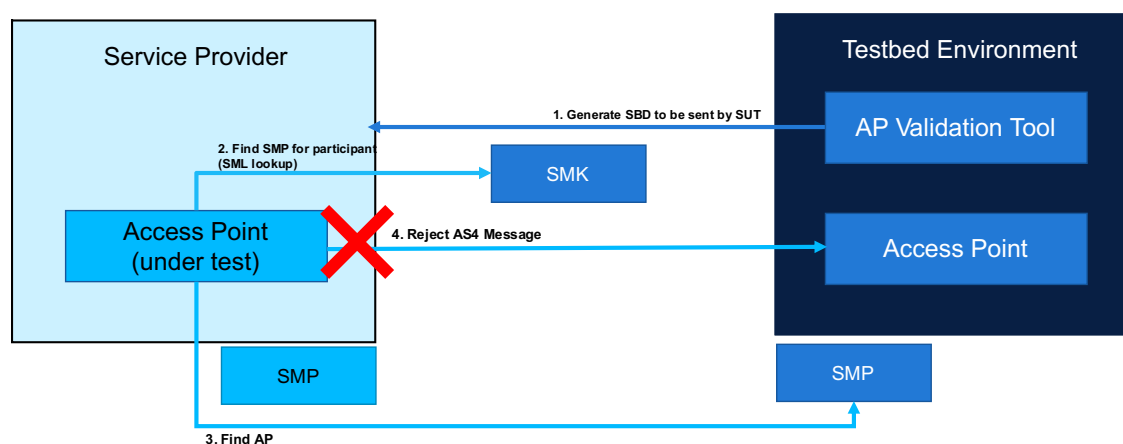


Figure 5 Invalid certificate handling

Expected results: Verification of SUT AP compliance to Peppol Transport Security Policy requirement of rejecting transactions with APs that have invalid (revoked or expired) certificates installed.

3.1.5 TC2A.5B: Large AS4 message reception

In this testcase the SP will have to demonstrate their ability to receive a large sized message (10mb) that adheres to Peppol eDelivery AS4 directly, without the need for an SMK/SMP. This test case doesn't require participant addressing information to be correctly registered in an SMK/SMP to receive the message.

Testbed prepares a BIS document and sends it via the AS4 protocol straight to the AP as shown in Figure 6. The dynamic discovery of the participant through the SMK/SMP is skipped, and the AS4 message is received directly by the AP.

Prerequisites:

- AP AS4 URL available that refers to HTTPS and accessible over the internet
- A Peppol PKI AP test certificate installed in the SUT AP and also imported in the tester's browser

The steps for carrying out the execution of TC2A.5B are as follows, as indicated in Figure 6:

1. Testbed generates a large BIS document (SBD file – 10mb) to be sent to the SUT AP
2. The AP of the Testbed acts as a document sender and sends the large AS4 message directly to the SUT AP's endpoint URL (no SMP necessary) and the SUT AP receives the message
3. Upon reception of the large AS4 message, the SUT AP sends an AS4 message receipt back to the Testbed

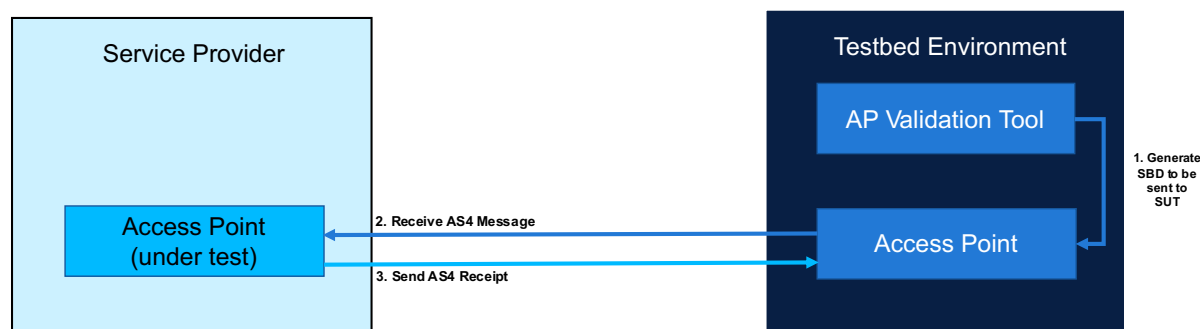


Figure 6 Large AS4 message reception

Expected results: Verification of SUT AP's capability to work with large sized files and AS4 protocol, complying with the Peppol policy file limitations.

3.1.6 TC2A.6: Large AS4 message submission

In this testcase the SUT AP will have to demonstrate the ability to submit a large sized message (10mb) that adheres to Peppol eDelivery AS4 profile and dynamically discover a participant's addressing information using SMK/SMP.

The Testbed generates an SBD (10mb) to be sent by the AP. The AP takes the document and needs to send it back to the Testbed as shown in Figure 7. In this step the SMP lookup through DNS resolution in the SMK is used to test the dynamic lookup mechanism.

Prerequisites:

- AP AS4 URL available that refers to HTTPS and accessible over the internet
- A Peppol PKI AP test certificate installed in the SUT AP and also imported in the tester's browser

The steps for carrying out the execution of TC2A.6 are as follows, as indicated in Figure 7:

1. Testbed generates zip package that contains a ready to be sent large BIS document (SBD file – 10mb) to be sent by the SUT AP
2. The SUT AP acts as the document sender and performs an SMK lookup to locate the Testbed participant's SMP
3. The SUT AP queries the located Testbed SMP for the receiving capabilities of the Testbed's AP and retrieves the metadata necessary to transmit the large AS4 message to the recipient endpoint
4. The SUT AP sends the AS4 message (SBD file – 10mb) prepared in step 1 by the Testbed AP
5. The SUT AP receives an AS4 message receipt from the Testbed's AP

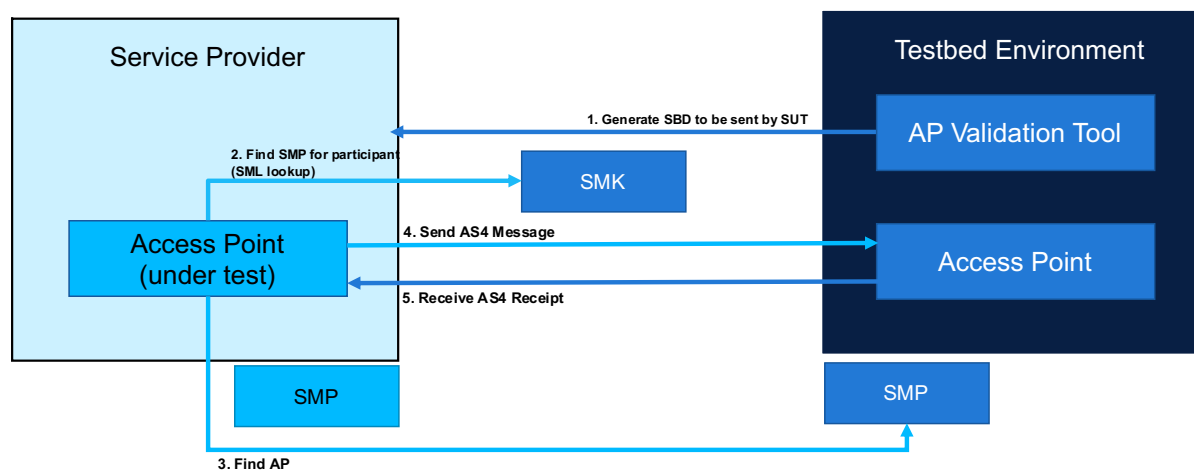


Figure 7 Large AS4 message submission

Expected results: Verification of SUT AP's ability to successfully find recipient participant's information through SMP lookup and correctly work with AS4 protocol to submit a large sized AS4 message.