OpenSBR Assurance manual

Version: 0.2 for SBR Assurance signing policy 2.0 – February 18, 2018

1   Introduction

Standard Business Reporting (SBR) is a Dutch public-private partnership which aims to reduce the administrative burden, improve transparency and foster innovation in regulatory reporting. SBR is about standardization of data definitions, processes and technology across reporting domains, creating a level playing field for software vendors and service providers, encouraging competition.

The Dutch business register (Kamer van Koophandel) takes part in SBR, and requires businesses to file their annual report in a digital format (eXtensible Business Reporting Language). Per January 2018, medium-sized businesses must report with SBR, including the audit report.

SBR Assurance is the specification[1] for the digital equivalent of the auditor's opinion on an annual report. With SBR Assurance, an auditor can sign off on an annual report with a qualified digital signature. The resulting file, a *detached signature*, can be used by recipients of the report to validate that the signature, annual report and audit report were not changed since signed by the auditor, and to verify which auditor signed off on the files.
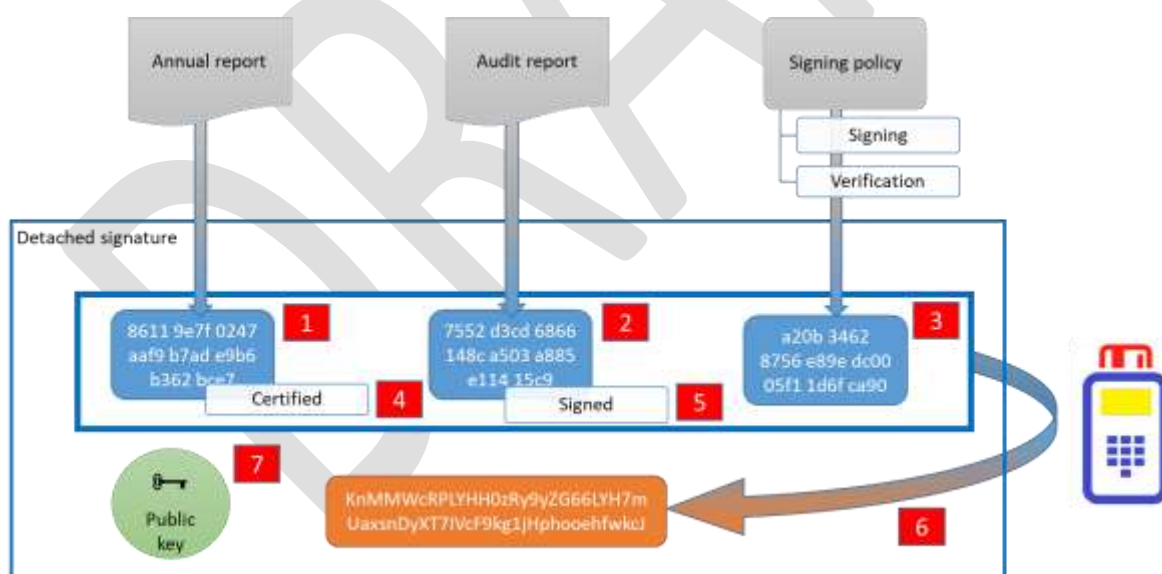

Figure 1: Linking and signing process (source: NBA.nl, used with permission)

OpenSBR provided the source code, and a proof of concept computer program to generate and verify the detached signature. Both the source code and the program can be used under a permissive MIT open source license.

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[1] The SBR Assurance specification was created by The Royal Netherlands Institute of Chartered Accountants, or Koninklijke Nederlandse Beroepsorganisatie van Accountants (NBA). More information on https://www.nba.nl/over-de-nba/english-information/

2   Installation and use

2.1   Requirements

The source code is written in the computer language C# and uses the Microsoft .NET framework. The applied cryptography requires version 4.6.2 of the .NET framework. This version is supported on computers running Windows 7 SP1, Windows 8.1, Windows 10, Windows Server 2008 R2 SP1, Windows Server 2012, Windows Server 2016. The software is not designed to run on Linux or macOS.

The proof of concept desktop tool requires the Microsoft Windows graphical user interface.

2.2   Using a certificate

To be able to sign documents, a digital computer certificate is required. It is possible to use test certificates. In order to send in qualifying audit reports to the Dutch business register, an auditor must use his/her professional government-trusted certificate (PKIOverheid certificate[2]). A certificate can be obtained from one of the trusted service providers.

Verification of documents is possible without a certificate.

2.3   Installing OpenSBR Assurance

A ZIP file containing the desktop tool can be downloaded from http://opensbr.org/. After unpacking, the following files are available:

- SBRAssurance.exe, the executable to start OpenSBR Assurance
- OpenSBR.Xades.dll, a computer library containing the cryptographic functions
- Settings.xml, containing advanced settings for the signing policy

2.4   Operation

The tool works in two different modes. A detached signature can be created for one or more documents, or a detached signature can be verified.
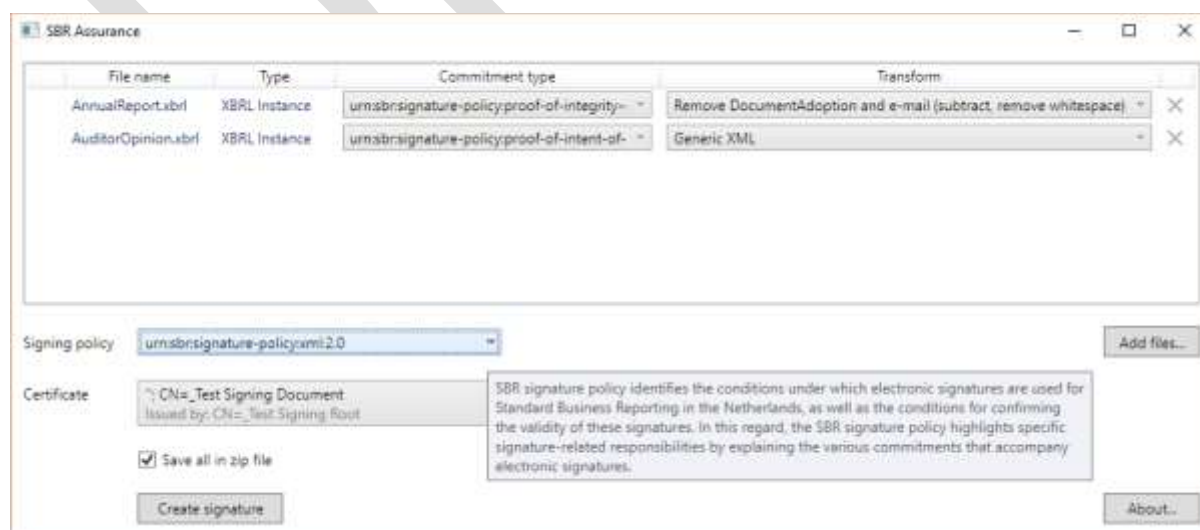

Figure 2: proof of concept desktop tool (OpenSBR Assurance) – creating a signature

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[2] More information is available on https://www.logius.nl/english/pkioverheid/

2.4.1 Creating a detached signature (linking and signing)

Any type of file can be added to the tool by clicking the "Add files…" button, or by dragging and dropping files. Typically, an auditor chooses an XBRL annual report and an XBRL audit report, but any document type can be included, such as XBRL extension files, XML files, PDF files, etc.

For each document, the following options are available:

- Commitment type. The NBA defined three types of commitment an auditor can express on the document:
  - Proof of integrity of the object for which the practitioner expresses an opinion. Used on an object of assurance.
  - Proof of intent of practitioner to express an opinion. Used for the audit report or other types of opinion.
  - Proof of intent of practitioner to add a copy of the opinion.
- Transform. This option applies to XML (or XBRL) documents, which allows certain XML information to be excluded from the signature scope. A basic transform rule, which excludes the document adoption date[3], is included in the settings; but more transform rules can be added by editing the Settings.xml file.

With a correct certificate selected, clicking the "Create signature" button will create a ZIP file containing copies of the original files, and the detached signature.

2.4.2 Verifying a digital signature

The integrity of a signed document set can be tested by opening the detached signature and original files in the tool; either by adding files one by one, or by adding a ZIP file containing all files.

Figure 3: proof of concept desktop tool (OpenSBR Assurance) – verification of a signature

The tool shows which signing policy and which certificate were used. If any of the files has been altered, the tool will detect that the detached signature file doesn't match, and shows a red cross.

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[3] In the filing process, the business owner legally adopts the annual report only after the auditor has signed the document. The adoption date will be inserted after the signing process, so must be excluded from the cryptographic signing process.

3   Using the source code

The source code is available for download at GitHub. A link can be found on http://opensbr.org/. The source code contains both the OpenSBR Assurance library and the desktop tool. The desktop tool and library can be compiled from scratch. The library can be used in other project as well.

Programmers of any level will find it easy to open the source code with tools such as Visual Studio[4].

4   Disclaimer

OpenSBR provides the source code and tool under MIT License conditions.

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[4] The source code was create with the free edition of Microsoft Visual Studio 2017. The source code contains some expressions which are specific to this version (C# 7.0), but which can be replaced easily.