

Applies to:

Netweaver Folder Management – Public Sector Records Management

Summary

A digital signature is the electronic pendant to a handwritten signature. Features, characteristics, functionality and typical example of digital signature are explained in detail in this article.

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Digital Signature

The term *digital signature* describes different methods to sign documents, in order to definitely identify the creator of document and to confirm the correctness and the validity of the document content.

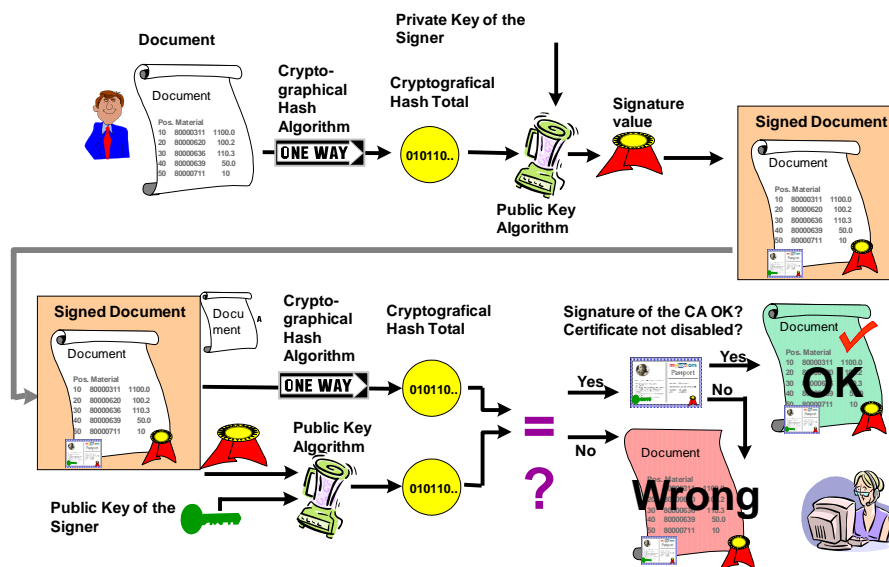
Examples of technologies for digital signatures are User Identification and Passwords, digital signatures via smart cards and usage of biometrical procedures.

A digital signature should be the electronic pendant to a handwritten signature.

Features of a Digital Signature

- The digital signature of a document is an encrypted fingerprint of the document content with the private key of the sender.
- The digital signature ensures the integrity of the document and the identity of the signer.
- Indeed a manipulation of the document during transit cannot be prevented, but the receiver can recognize the manipulation doubtlessly.
- The signed document can be changed neither by the signer nor by the receiver without a trace.

Technical Computing of the Digital Signature



Functionality of a Digital Signature



Digital Signature: Requirements

Proof of the doubtless connectivity between the transmitted data and the person, who has sent or received these data respectively (evidence of the author, evidence of the recipient).

Sign	<ul style="list-style-type: none"> ➤ Create public key (Hash value) ➤ Encrypt public key with private Key ➤ Create Time Stamp
Time Stamp	<ul style="list-style-type: none"> ➤ Proof observance of a time limit ➤ Document the point in time of a signature ➤ Created by a time stamp provider
Archiving	<ul style="list-style-type: none"> ➤ Volume: Request, Signature and Certificate in a Database / Archiving System ➤ Retention Period
Logging	<ul style="list-style-type: none"> ➤ All Transactions/Activities ➤ All relevant Accesses ➤ Changes of Authorizations

Characteristics of a digital Signature

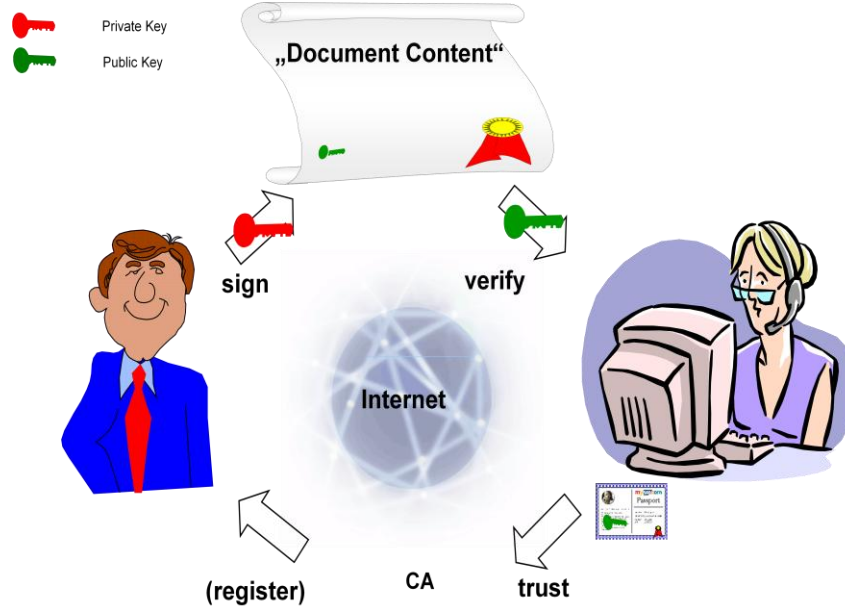
- **Authenticity**
A digital signature must clearly proof the Identity of the sender. This is the case, when only the creator of the document is able to create the digital signature.
- **Integrity/Non-transferability**
The transmitted data are protected against intended or unintended manipulation. The digital signature is valid only in connection with the document, i.e. it cannot be transferred to another document.
- **Liability**
The sender can deny the creatorship. Therefore a legally binding communication must be guaranteed.
- **Verifiability**
The receiver of a document can doubtlessly check the digital signature, i.e. verify or falsify.

Signature Levels According to EU Directive

The european Signature Directive RLES 1999/93/EG provides for different qualities of the digital Signature:

- a) Simple digital Signatures (e.g. scanned Signature)
 - Completely unregulated
 - **No probative force**
- b) Advanced digital Signatures (e.g. GNUPP)
 - Allows the Identification of the Vertificate holder and prohibit a subsequent change of signed data
 - **Poor probative force**
- c) Qualified digital Signatures (e.g. SmartCard)
 - Valid personal certificate, which has been created with as securely classified signature equipment
 - **Strong probative force**
- d) Qualified digital Signatures with Provder Accreditation
 - as c), but all used components as well as providers of certification services have been officially checked in advance in respect of signature levels according Signatue Law
 - **Highest probative force**

Digitally Signed Documents



Digitally Signed Documents: Functions

Create Signature

- Freeze Document version
- Start Signature Viewer with document content
- Press button „Sign“
- Store the Signature data (Signature Data Container) with link to the document within Records Management
- Log according to audit requirements

Verify Signature

- Press button „verify signature“
- Load signature data and verify
- Transmit the result to the user
- Log according to audit requirements

Digitally Signed Documents: Example

The screenshot shows the SAP Sign Document dialog box. The main content area displays the following text:

Include Data for Document Templates

Use
 In your document templates for office documents, you can include data from the system, record or case from which you create the document. In addition to the attributes of the record or case, the following fields are available. Note that you must use the technical name given in brackets for the defining the document template.

Document Data
 The attributes defined in the content model of the document are available with the prefix "DOC_" in the document. This means that you can distinguish between attributes of records and documents with the same names and both attribute groups can be used in the document.

Example:
 The time the last a change was made to the document is entered in the field

Below the text is a table showing the signing result:

S/R result	Signatory/Recipient Name	Unterzeichnungsdatum	Issuer of X.509 certifi
✓ Successful	CN=D016106, O=SAP-AG, C=DE	Thu Apr 29 11:02:35 2004 (UTCTime: 040429090...	CN=SSO_CA, O=SAF

At the bottom, the signing details are shown:

Unterzeichner

Full Name	Dr. Wolfgang Teusch	User	TEUSCH
Sig/Rec. name	CN=D016106, O=SAP-AG, C=DE	Password	*****

The bottom of the dialog features a 'Signieren' button with a green checkmark, a red 'X' button, and a document icon.

Related Content

<http://www.sdn.sap.com/irj/sdn/nw-ecm?rid=/webcontent/uuid/80194853-fa8a-2c10-3ca8-d17671671993>

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