Authorised Translations of Electronic Documents

Central element to extend authorised translations of documents to electronically signed, digital documents is an electronic seal, which attests to the correctness of the translation and the authorisation of the translator. It contains a digital signature binding together original and translated document, enabling forensic inspection and therefore legal security in the appropriation of the translation. Organisational aspects of possible implementation variants of electronic authorised translations are discussed and a realisation as a stand-alone web-service is presented.

Jan Piechalski, Andreas U. Schmidt
Fraunhofer-Institute for Secure Information Technology SIT
Darmstadt, Germany
ISSA 2006 – Sandton, South Africa, 5 July 2006
Process Analysis of General Secure Transformations

Authorised Translations under German Law

- Performed by a professional translator, **sworn**, registered with a judicial circuit corresponding to the location of his office, and equipped with a special **seal**
- Legal regulations concerning authorising of translators vary within Germany between federal states
- **No legal restrictions** to the way authorised translations are created
• Source language
• The source document and the target document are bound together by stapling the source with the target and stamping the seal over the staple
• Description of handwritten signatures
• Annotation
• “Certificate of accuracy”
• Stamp of the seal and signature
Authorised Translations – Paper Standards (2/2)

Handwritten signatures in the source document should be described in the target document, if necessary as “illegible”

Annotations made by the translator (e.g. defects in the source document, transliterations of names or calendar transformations having been applied)

“Certificate of accuracy” consisting of a statement like “I hereby certify the completeness and accuracy of the translation”, place, date, stamp of the seal and signature – two characteristics: authentication and authorisation
Certifications by notaries public under German Law

- Detailed legal regulations concerning the performing of certifications, both for paper and electronic documents, exist.
- A certification’s annotation according to § 33 *Verwaltungsverfahrensgesetz* has to contain following elements:
  1. Name of the source document
  2. An optional indication that the usage of the certified target document is restricted to a certain authority – for excerpts from public registers.
  3. An optional description of defects found in the original document
  4. Information about original signatures, including validation results
  5. Attestation that the content of the source and the target are identical
  6. Creation time of the certification
  7. Creation place of the certification
  8. A qualified signature of a person authorised to perform the certification
- A translation’s annotation is similar
- Elements 1 and 2 are not required and only of limited sense for electronic translations
Requirements for Electronic Translations

• Electronic signatures in the original document: signature extraction instead of a simple description
  – Signer’s identity
  – Integrity of the source

• Two authentication characteristics replacing signature and seal
  – Electronic signature
  – Attribute certificate

• Binding inseparably source and target document by inserting the entire source document into the annotation of the target
Applicable Internationalisation Standards

• Specification of source and target language with ISO 639-2 codes (e.g. “eng” for English)
• Standards for transliteration of names (e.g. ISO 9 for Cyrillic → Latin)
• Date and time conversion during translation
  – ISO 8601 and ISO 2015 – Standards concerning notation of date and time
The data structure carrying the extracted original signatures is a genuine TransiDoc data structure – not specific to translations.
Translation Seal (5/6)
1. The translator receives a public key, a private key and an “ordinary” certificate from the signature CA
2. The translator applies for authorisation at the district court
3. The district court initiates the issuance of an attribute certificate by the attribute certificate CA
4. The translator receives an attribute certificate from the attribute certificate CA
5. The client sends a source document to the translator
6. The translator performs the translation, seals the target document with a transformation seal including his attribute certificate and signs the target
7. The translator sends the target document to the client
1. The web service receives a public key, a private key and an “ordinary” certificate from the CA
2. The translator applies for authorisation at the district court
3. The translator registers with the web service
4. The web service checks the translator’s authorisation at the district court and adds him to his database
5. The client sends a source document to the translator
6. The translator performs the translation
7. The translator sends the source document and the translation to the web service
8. The web service seals the target document with a transformation seal including his certificate and signs the target
9. The web service sends the target document to the translator
10. The translator sends the target document to the client
### Create Translation Seal

- **Original Document:** 
  - File Type: PDF
  - Language (ISO 639-2): English (eng)
  - Validate
  - Original Signatures: Validate and abort transformation, if validation result negative
  - Ignore

- **Translation:** 
  - File Type: PDF
  - Language (ISO 639-2): German (deu)
  - Transliteration Standard: ISO 9

- **Data and Time Conversion Method:** 
  - Translation created according to DIN 2345.

- **Comment:** 
  - I hereby certify the accuracy and completeness of the translation.

- **Accuracy Attestation:**

**Note:**
- File upload of original document and translation
Web Service Implementation (2/6)

Create Translation Seal

- File type specification
- Allowed document formats are listed
Source and target language specification according to ISO 639-2

- Create Translation Seal
  - Original Document: [Browse...]
  - File Type: PDF
  - Language (ISO 639-2): English (eng)
  - Validate
  - Original Signatures: Validate and abort transformation, if validation result negative
    - Ignore
  - Translation: [Browse...]
  - File Type: PDF
  - Language (ISO 639-2): German (deu)
  - Transliteration Standard: ISO-9
  - Data and Time Conversion Method: 
  - Comment: Translation created according to DIN 2345.
  - I hereby certify the accuracy and completeness of the translation.
  - Accuracy Attestation: 

  [Reset] [Continue>>]
Create Translation Seal

- Original signatures policy
  - Validate signatures and continue transformation in any case
  - Validate signatures and abort transformation, if validation result negative
  - Ignore original signatures
Web Service Implementation (5/6)

Create Translation Seal

- Transliteration standard of names
- Conversion method of date and time

Transliteration Standard: ISO 9

Data and Time Conversion Method:

Translation created according to DIN 2345.

I hereby certify the accuracy and completeness of the translation.
Create Translation Seal

- Translator’s comment
- Attestation of accuracy and completeness of the translation
Web Service Implementation – Further Steps

• Results of original signatures validation are shown using browser plugins
• Target document is created
• Target document is shown to the user
  – Original document
  – Translation
  – Workflow definition
  – Workflow report
  – Annotation
  – Signature