
Comment on the “Final Report of Expert Group on e-invoicing”

26 February 2010

We hereby seize the opportunity to comment on the “[Final Report of Expert Group on e-invoicing](#)” as offered by the EC DG Enterprise and Industry. We have read this report with great interest and understand that it as a substantial cornerstone in the building of the European eInvoicing Framework.

The following explanations are answering (part of) the questions asked in the “Consultation Document on the Final Report of Expert Group on e-invoicing”. Due to the focus of our activities on standardization, interoperability and unique business identification the stress of our comment is on section 5 “Interoperability” of the report.

- Part 5.5.5 “Addressing & Routing” on page 45 and 46 lists the main principles and required actions for the implementation of an applicable framework of interoperable addressing and routing procedures. As a key element, the addressing and routing schemes should be based upon existing business identifier schemes, e.g. ISO/IEC 6523 registered identifier schemes like GS1 GLN or D-U-N-S numbers, VAT numbers or IBAN. Additional work concerning the subject shall be performed, e.g. based upon [CWA 16036 “Cyber-Identity - Unique Identification Systems For Organizations and Parts Thereof”](#).

We fully agree with the conclusions in this part, especially concerning the usage of existing identification schemes. In addition, we would like to take into account the following facts:

The usage of identifiers in eInvoicing and eCommerce in general must be regarded under a generic three-layer view:

- The lowest layer is the one of physical, purely technical identifiers. An example of such a technical identifier is the IP (Internet Protocol) address. This layer is out of scope within the current context.
- The middle layer is the one of logical identifiers for the addressing of electronic messages. It is therefore the one that part 5.5.5 of the report is dealing with.
- The upper layer is the one of the content of the messages. Unique business identifiers are also playing a role within the content of (invoice) messages - e.g. VAT-numbers, GLNs in UN/EDIFACT messages according to the EAN-COM specifications, IBANs for payment information or the invoice number itself which is unique within the billers’ context. [CEN CWA 15576 “Recommen-](#)

["Recommendation to allow coded identifiers as an alternative to the current unstructured clear text identifications"](#) gives a good overview concerning this topic.

Any recommendations for the usage of identifiers for addressing and routing should therefore recommend favoured identification schemes. But in addition, they should also comprehend instruments and processes for interoperability between these schemes.

In order to reach "*practical improvements of the current addressing and routing environment*" these recommendations for identifiers must not raise conflicts between identifiers used in the content layer and the addressing and routing layer. Ideally, they should be interoperable with each other.

- Part 5.5.10 "*Specific additional recommendations regarding four-corner and multi-corner scenarios*" discusses four-corner model issues, i.e. the involvement of two (or more) service providers.
This includes the recommendation that "*SP-S [supplier's service provider] also performs signature (including certificate) verification as part of its trusted relationship with SP-B [buyer's service provider]*".
 - As any change of the verification report upon transmission from SP-S to SP-B could lead to serious liability problems, the authenticity and integrity of this verification report must be secured. An according remark in the report would be useful.

- Part 5.5.10 further includes the discussion of interoperability problems arising from the fact that often the issuing of an electronic invoice is performed by/includes the application of "data level controls", which usually means that this file is signed electronically. Any conversion of the invoice data into other formats breaks the according data level control applied to the original file. At the end of part 5.5.10 the following case is explained: Different structured formats for automatic processing are used at the supplier-side and at the buyer-side. In some jurisdictions the issuing of an electronic invoice has to be performed by applying an electronic signature; in addition, these jurisdictions lay stress on the "original invoice" which creates the problem that supplier and buyer work with (the same) data in different formats (or "representations"). A solution proposed in the report is to transmit a "signed PDF" file.
"Using a Signed PDF has the benefit of transmitting a universally accepted format that allows easy readability for workflow applications and tax audits. It is accepted practice for unsigned structured data to be transmitted together with the signed invoice so that data conversions can easily be performed at every step where necessary."
The following annotations can be made concerning these topics:
 - The discussed solution leads to the fact that the signed PDF file holds the "original", i.e. the tax-relevant data, but the accompanying structured-data-file(s) is/are processed by the systems of the transacting parties. Any mismatch between the data in the PDF-file and the structured-data-file could therefore lead to serious liability issues.

Therefore, a note in part 5.5.10 would be useful, explaining that the according processes have to be implemented (e.g. a manual or semi-automatic workflow) in order to avoid such a mismatch.

- Part 5.5.10 introduces the expression “*original invoice*” without giving a definition for this much debated term.
[CWA 16047 “E-Invoicing Compliance Guidelines - Commentary to the Compliance Matrix”](#) contains in chapter 6.6.1 “*Concept of an original invoice*” on page 31 a thorough study of the notion of the electronic “original invoice”. It can be roughly summarized as saying that the above mentioned jurisdictions require the “original invoice” to be in the **original representation**, i.e. in a given format and layout, in analogy to an original paper invoice. Other jurisdictions “*accept the concept of multiple datasets in different formats representing ‘original’ invoices*”. (Please note that such a data-set is uniquely identified by the business identifier of the invoice issuer and the invoice number.) Important is the producing of audit trails or the possibility of a comparison of the files in order to prove that they contain the same data-set.

As a consequence it can be concluded that the report could make a reference to chapter 6.6.1 of CWA 16047 concerning the notion of the “original invoice” in the electronic world.

- A specific technology worth mentioning as an example of securing invoice data is the “single field encryption” as described in the paper “[Single Field Encryption for Securing Electronic Invoices](#)” issued by OFS Portal. This technology can be summarized in the following way: Only the invoice data values of a structured, (XML) formatted file are transformed into a text-string and then signed. After conversion into another format - still holding the semantically equivalent data - this signature can still be validated, thus guaranteeing the authenticity and integrity.
- This above explanations lead to the following general conclusion:
The need for electronic signatures has been alleged to be a major obstacle for the widespread adoption of cross-border eInvoicing and eInvoicing in open user groups. We feel that this is a simplification of the situation. Most of the problems arise from the fact that the “original invoice” is interpreted as a specific representation, i.e. the format that has to be signed. Any conversion of this representation therefore leads to the loss of the originality. The European eInvoicing Framework should therefore also allow technologies that preserve the originality of the invoice data as such.

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