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WORKSHOP

AGREEMENT

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A framework for the emerging network infrastructure of eInvoice service providers throughout Europe

This CEN Workshop Agreement has been drafted and approved by a Workshop of representatives of interested parties, the constitution of which is indicated in the foreword of this Workshop Agreement.

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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Contents

Foreword

This CWA has been prepared by the CEN/ISSS Workshop on 'eInvoicing Phase 2' (WS/eInv2)

The CWA has been approved at the final workshop plenary meeting on 10 September 2009.
This CEN Workshop Agreement is publicly available as a reference document from the National Members of CEN: AENOR, AFNOR, ASRO, BSI, CSNI, CYS, DIN, DS, ELOT, EVS, IBN, IPQ, IST, LVS, LST, MSA, MSZT, NEN, NSAI, ON, PKN, SEE, SIS, SIST, SFS, SN, SNV, SUTN and UNI.

This CEN Workshop Agreement (CWA) is part of a set of CWAs that has been prepared by Phase II of the CEN/ISSS Workshop on Electronic Invoicing in the European Community.
The objective of this Phase of the Workshop is to help to fill gaps in standardization for the use of electronic invoice processes, to identify the various practices in member states, to integrate the emerging technical and practical solutions into effective good practices, and to define and disseminate these good practices for e-invoices in close coordination and cooperation with private industry, solution providers and public administrations.

Five initial Projects have been established with a view to supporting the:

1. Enhanced adoption of electronic invoicing in business processes in Europe;
2. Compliance of electronic invoice implementations with Council Directive 2001/115/EC and Directive on the Common System of Value Added Tax 2006/112/EC as well as Member States national legislation as regards electronic invoicing.;
3. Cost-effective authenticity and integrity of electronic invoices regardless of formats and technologies;
4. Effective implementation of compliant electronic invoice systems in using emerging technologies and business processes; and
5. Emerging network infrastructure of invoice operators throughout Europe.

This CWA was developed by the working group on the project 5. listed above.

In addition, the Workshop has strived after the responsibility for the standards aspects of the European Commission's expert group on electronic invoicing, complementing and linking with the relevant Commission groups, and ensuring the relevant global standards activities are correctly informed and primed. In this activity, it aims to ensure collaboration with other CEN/ISSS groups, European Commission Expert Group on eInvoicing (EEI) Network and Standards subgroup and UN/CEFACT (TBGs1, 5 and 15.)

Companies supporting the current CWA

Accelya, France
ACEAT, Tax Agency of Spain, Spain
Adobe Europe, United Kingdom
Agenzia della Entrate, Italy
AITI, Association of the Italian Corporate Treasurers, Italy
ARIBA, Germany
AUDI AG, Germany
Austria Pro, Austria
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1. Scope

When implementing electronic business and administration related documents within the supply chain, including (in particular) electronic invoicing - as well as others, many organizations decide to utilize the services from (eInvoice) service providers[1]. There are several benefits from using service provider's services, some are the same for large enterprises as well as for SME's, while others are different. The major reason for SME's to use service provider services is the possibility to concentrate on their core business and utilize service provider expertise and facilities for electronic invoicing without investing too much themselves in dedicated personnel, equipment and software. Large enterprises are looking also for outsourcing and rationalizing electronic invoicing tasks. In addition to that they often want to have a single entry point for their exchange of electronic invoices.

The present document gives:

- guidance on good practices for service providers in their activities on information exchange and routing,

as well as

- issues related to eInvoice addressing to facilitate the electronic invoice exchange between the service provider networks.

The present document is applicable to Business-to-Business[2] eInvoicing in general, whether the invoice is handled with out without human intervention and it is mainly addressing the service provider functions as part of the eInvoice transaction chain. There is a lot of legislative issues and regulations related to eInvoicing and service provider operation.

Topics like

- general legal issues,
- taxation(VAT),
- electronic signatures and
- archiving techniques

are noted, but discussion is out of the scope of this CWA.

[1] Service provider is an organization providing third party services for Customers and Suppliers by e.g. implementing eInvoicing

[2] Also indicated by B2B, B2b or b2B where the 'b' refers to an SME and the 'B' to a larger size business entity. Business to Government is considered equivalent to B2B and not mentioned separately here

2. Normative References

The following normative documents contain provisions which, through reference in this text, constitute provisions of this CWA. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties using this CWA in setting up or evaluating their e-invoicing processes are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies.

[1] Council Directive 2006/112/EC on the common system of value added tax

[2] CWA 15579:2006 E-invoices and digital signatures

[3] CWA 15581:2006 Guidelines for eInvoicing Service Providers

[4] ISO/TS 15000-2:2004 Electronic business eXtensible Markup Language (ebXML) -- Part 2: Message service specification (ebMS)

[5] ISO/IEC 6523 Information technology - Structure for the identification of organizations and organization parts

[6] ISO 13616:2003 Banking and related financial services - International bank account number (IBAN)

[7] RFC 4130 MIME-Based Secure Peer-to-Peer Business Data Interchange Using HTTP, Applicability Statement 2 (AS2)

[8] RFC 2045 Multipurpose Internet Mail Extensions (MIME)

[9] Directive 2006/123/EC of the European Parlament and of the Council on services in the internal market

[10] Council Directive 2001/115/EC amending Directive 77/388/EEC with a view to simplifying, modernising and harmonising the conditions laid down for invoicing in respect of value added tax

3. Definitions and abbreviations

3.1 Definitions

For the purposes of the present document, the following terms and definitions apply:

3.1.1 3-corner model an invoicing process set-up where Trading Partners have a separate contractual relationship with the same Service Provider.

3.1.2 4-corner /multi-corner model an invoicing process set-up whereby each Trading Partner has contracts with one or several separate Service Providers, whereby the Service Providers ensure the correct interchange of invoices between the Trading Partners. The concept of the 4-Corner model originated in the banking sector.

3.1.3 Audit of an electronic invoice the process of inspection of an electronic invoice and/or the processes and systems used for processing or storing an electronic invoice during its life cycle by a competent tax administration to ascertain the compliance of that electronic invoice and the underlying sales transaction with applicable law.

3.1.4 Conversion Electronic invoice message is converted into another representation format during the exchange to facilitate the eInvoice processing between Customer and Supplier. The conversion should be done without any loss of data.

3.1.5 Data exchange sending data electronically to other party's system followed by acknowledgement (system or software level) The transfer of data between processes, data stores or organisations

3.1.6 Electronic invoice/eInvoice A dataset in the agreed format, issued by or on behalf of a Supplier, which contains all details agreed between the Trading Partners and all the properties that the competent tax administration may wish to audit.

3.1.7 eInvoice Address unique identification of an organization or entity within organization for eInvoicing (eBusiness and data communication) purposes. eInvoice address is based on VAT-number or some other unique organization identification.

3.1.8 eInvoice Address Registry a public repository of eInvoicing addresses that also provide information on organization's ability to receive and/or send eInvoices from/to other organizations.

3.1.9 Electronic signature data in electronic form which are attached to or logically associated with other electronic data and which serve as a method of authentication

3.1.10 Interconnectivity The state or quality of being interconnected, i.e. having a connection with multiple systems.

3.1.11 Interoperability The ability of two or more systems or components to exchange information and to use the information that has been exchanged.

3.1.12 Invoicee the person or organization who will receive the invoice for products or services purchased.

3.1.13 Original Invoice is defined in CWA 16047 by TG2

3.1.14 Routing The sending of e-invoices over one or more hubs.

3.1.15 Service Provider (eInvoicing) a company that, on the basis of an agreement, performs certain e-invoicing processes on behalf of a Trading Partner, or that is active in the provision of support services necessary to realize such processes.

3.1.16 Trading party/partner Supplier or Customer (Buyer).

3.1.17 Third party service provider (services) a company to whom specific tasks or services are outsourced**.** In electronic invoicing some or all of the tasks associated with the creation, issuance, format conversions, transmissions, storage etc. may be outsourced to a third party.

3.2 Abbreviations

AS2	Applicability Statement 2
CII	Cross Industry Invoice (by UN/CEFACT TBG1 Working Group)
DUNS	D-U-N-S® Data Universal Numbering System
GS1	GS1 designs and manages a global system of supply chain standards
ebMS	ebXML Message Service Specification
ebXML	Electronic Business using XML (eXtensible Markup Language)
EEI	European Electronic Invoicing (EEI) Framework
ERP	Enterprise Resource Planning
FunAck	Functional Acknowledgement (for electronic message)
(S)FTP	(Secure) File Transfer Protocol
HTTP(S)	Hyper Text Transfer Protocol (secure)
IBAN	International Bank Account Number
INVOIC	UN/EDIFACT Invoice Message Standard
MIME	Multipurpose Internet Mail Extensions
SLA	Service Level Agreement
UN/CEFACT	United Nations Centre for Trade Facilitation and Electronic Business
UN/EDIFACT	United Nations Electronic Data Interchange for Administration Commerce and Transport

4. Framework for emerging network infrastructure of electronic invoice service providers throughout Europe

4.1 Objective of the document

Electronic invoicing is a modern and cost effective way to deliver invoices from supplier (seller) to customer (buyer)[3]. While the basic principles of sending invoices are unchanged, electronic invoicing enables a much higher degree of automation compared to traditional paper invoice. A prerequisite for automation is, however, agreed eInvoice formats well as defined and agreed practices concerning the addressing and routing of eInvoices.

Electronic invoicing brings savings to large enterprises, as well as to small and medium sized enterprises. It improves the quality of invoice information sent by supplier to customer due to agreed content, streamlines business processes and facilitates the migration to paperless trade. In addition, the invoice information create a mass of business intelligence on the trading history for and between companies. Moreover, the technology has the capability to ensure correct tax revenues, enhance regulatory monitoring and oversight capabilities, decrease regulatory costs, and improve official enforcement options and opportunities. These savings and benefits will be realized in practice only when implementing electronic invoicing will not bring any additional requirements and (perceived) costs or complexity compared to paper based invoicing.

To effectively carry on their tasks, ordered by trading parties and compose an interoperable network, the service providers should adopt common collaborative practices for working together and to deliver their services throughout the eInvoicing process.

4.2 Interoperability framework

As efficient interoperability between service providers is one of the crucial success factors for the wide adoption of eInvoicing, there is a need to create a framework for interoperability to enable the trading parties and service providers to focus on the development of eInvoicing within common scope.

Interoperability can be identified on three levels

I. The organisational interoperability. This can also be extended to include the legal and regulatory environment.
II. The semantic or business interoperability, which includes discovery and collaboration aspects, including workflow and decision-making transactions. This can require alignment of business processes and interfaces as well as operational synchronisation of collaboration data.
III. The technical interoperability, which consist of the common methods and shared services for the communication, storage, processing and presentation of data. This includes the technical foundations for a secure environment, compatible technical standards and a common framework.

The pre-requisite for the interoperability framework is appropriate legislation and regulations. The framework will help the trading parties and service providers to better create mutual understanding and utilize established practices for electronic invoicing.

Even while including some eInvoicing related features, the interoperability framework principles are content neutral and could be adopted also for interoperability and exchange of other electronic trade documents and messages. This will also help the service providers and trading parties further enhance the electronic business relationship beyond eInvoicing.

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[3] In a trade transaction using electronic invoice, two main parties can be identified:
Customer: the organization that owns the products after successful completion of the trade transaction (Buyer).
Supplier: the organization that owns the products, and consigns or makes them available in a trade transaction.
These parties can also have other roles in the trade transaction dependent on function or action at any point in the supply chain. These roles are defined in the International Supply Chain Reference Model (ISCM) created by UN CEFACT working group TBG14 (available in TBG 14 website) www.uncefactforum.org/TBG/TBG14/tbg14Deliverables.htm

While working together in partnership to fulfill the trading parties' demand for interoperability in eInvoicing and related value added services in wider geographical area, different countries and environments, the service providers would also be facilitated by interoperability framework definitions to create alliances and wider networks to cover this need.

Interoperability is central to establishing growth in e-business and e-Invoicing. It provides users with the ability to transfer and use information across multiple technologies, systems and organization boundaries. The establishment of interoperability will enable more efficient reach, while fostering improved competition, stimulating a network effect.

The service providers cooperate and compete at the same time in the field of eInvoicing. The defined interoperability framework should also be utilized for stimulating the service provider competition by increasing clarity of roles and responsibilities and creating boundary between cooperation and competition, resulting cost-effective solutions for users through development of eInvoicing services.

This document is concentrating on the levels II and III of interoperability by:

- Identifying interconnection and conversion scenarios for different use cases
- Defining basic interoperability criteria for service providers
- Providing checklist for interoperability agreement
- Introducing some standards, recommendations and good practices for adoption and use
- Identifying and proposing structure for some third party services e.g. eInvoice address registry

4.3 Interconnection Scenarios

This chapter describes scenarios for the transfer of invoices where eInvoice service provider services are needed. The descriptions illustrate only basic cases and there might be a plethora of variations of these in individual cases. eInvoicing between companies (and service providers) located in different countries will even multiply the number of possible variations in addition to the described scenarios.

There will be also cases where eInvoicing is implemented directly between supplier and customer (peer-to-peer). In case the direct connection is chosen by supplier and customer, they are able to decide themselves how to conduct electronic invoicing. If supplier and customer decide to implement a direct eInvoicing connection, they will need to allocate necessary resources and competence to implement, maintain and operate the connection. They need also to agree on what data communication protocol and invoice data format to use in order to transfer the invoice information as well as organize archiving. However, they might need to do that individually with each of their own eInvoicing partners, implying the need for many bilateral negotiations and agreements.

An electronic invoicing service provider can provide data communication and specific services for electronic invoicing, including but not limited to:

- Conversion of the data from the sender's format to the recipient's format, allowing both sender and recipient to use their preferred (single) eInvoice format
- Provision of the physical exchange services for the eInvoice messages
- Visualisation of the data, providing a human readable form of the data
- Archiving the eInvoice on behalf of the supplier or the customer
- Signing the eInvoice electronically on behalf of the supplier
- Providing interface for tracking the exchange of invoices as well as other eInvoice workflow related services
- Helpdesk services to help with sorting out data content and delivery issues

Large service provider networks, including scanning and printing partners, allow delivering invoices to and from virtually any destination.

In the ideal case Supplier and Customer just need to agree in their commercial agreement on the contractual issues to use electronic invoicing as the invoicing method, define and identify the means to transfer their invoices and let their service providers take care of the technical implementation of the exchange of documents.

The service provider services will then be provided based on a contract between the trading party and his service provider. The contract can, among other things, define a formal mechanism for documentation of moving the responsibility on forwarding the electronic documents over the network (e.g. acknowledgement message).

The national eInvoicing operation is relatively easy to implement because all the players in the field are under the same general legislation, regulations and rules and have quite much common understanding of business processes. The obvious benefits inherent in electronic invoicing make it an effective tool for electronic business, however there remain obstacles (that emanate primarily from diverse legal and regulatory requirements) to broad-based adoption of the technology and good practices, especially in cross-border and regional level, .

These obstacles arise from the different interpretations and, consequently, implementations of the Directive 2006/112/EC in the various EU member states. This wide spectrum of different legislations prevents business and administrations from capitalizing on the electronic commerce and especially on eInvoicing.

The diversity, complexity and lack of implementation-relevant official interpretations of existing national laws and their interaction in cross-border situations has created a climate of uncertainty that might affect implementation by the business community (especially SME) in electronic invoicing solutions. In turn, this also creates barriers to eInvoicing interoperability across geographic borders and even inhibits the establishment of wider cooperative networks

This situation sets the eInvoicing service providers in a challenging position while expanding their business and considering starting conducting cross-border business.

In this document the cross-border issue is discussed only on the level related to data communication, interoperability and conversion of data.

Scenario A

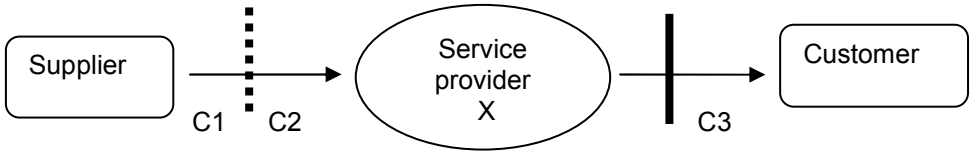

Figure 1 - eInvoicing scenario A (Cross Border)

Scenario A shows a simple interconnection case where only one service provider is needed (three corner model') for transferring the eInvoice. In this case both supplier and customer have connection to the same service provider. However, the service provider might do a conversion between different eInvoice message formats used by supplier and customer[4]. In this case, it is also recommendable that there is a clear distinction and transparency of tasks and costs originating from the services provided for each contracting party.

In domestic case, (Customer and service provider are located in same country) the responsibility of the service provider is to take care that all the required data is transmitted to the customer in the appropriate format.

In the alternative case, Cross Border, of Scenario A the Supplier and Service provider (or alternatively Customer and Service provider) are geographically located in a same country (border depicted by the continuous line), different from the country where the Customer is in. In this case the service provider is taking care that all the required data is transmitted to the customer in the appropriate format. The Cross Border Scenario A covers also the situation that each of the parties in the transaction chain is located in a different country (C1, 2 and 3).

[4] Conversion related issues will be discussed in chapter: Conversion

Scenario B

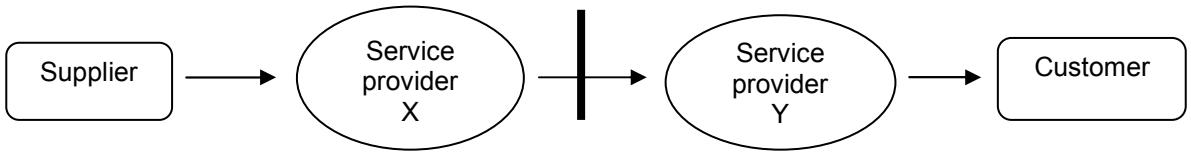

Figure 2 - eInvoicing scenario B (Cross Border)

In scenario B both supplier and customer have a connection with different service providers and interoperability between service providers is needed (four corner model). Also format conversions to eInvoice message might be done by service providers. In this case a single format for communication between service providers is very beneficial.

In the Cross Border case of Scenario B both supplier and customer have their own service provider and in this case the service providers ensure between each other that all required information is transmitted and the messages are forwarded through the chain.

Scenario C

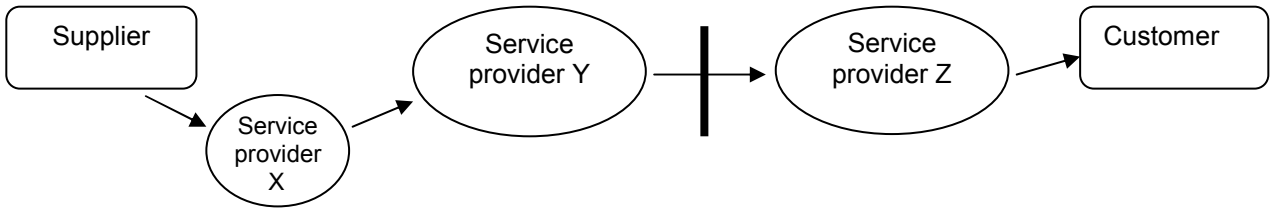

Figure 3 - eInvoicing scenario C (cross border)

In the cross border case of scenario C (multi-corner) the supplier's service provider (X) does not have a direct connection to the customer's service provider (Z) or customer in other country and needs therefore to have a connection with a third service provider (Y) providing the Cross Border connection. Therefore, a third service provider who has connection with both supplier's and customer's service provider is needed in order to provide the connection. Also format conversions to eInvoice message might be needed by respective service providers. In this case a common (eInvoice) format for inter service provider communication is especially desirable in order to avoid any conversion problems and loss of data between service providers. In this case a service provider (X) is subcontracting his tasks and obligations to other service provider (Y) and again carries the responsibility for their actions or failures to the trading party according the agreement.

Also in this scenario it is good to remember that geographical borders could lie between any of the parties in this transaction chain (compare to Scenario A).

This scenario assumes that the supplier wants to have only one connection point (service provider X) and the supplier's service provider is not able or willing to establish direct connection with customer's service provider e.g. due to a low volume of transactions, but to provide full service to supplier do implement this arrangement. This could be the case also nationally and therefore this scenario could be applicable in one country as well.

4.4 Service provider Criteria

Recommendation: *The service provider should meet the minimum set of criteria for operation (indicated in this chapter).*

eInvoicing service providers do have a critical role for their customers' business: Smooth, error-free, swift and predictable invoice data flow as well as subsequent financial flow is very important for SME's. Therefore the responsibility to provide reliable and accurate services is a must for an eInvoicing service provider. Especially SMEs can benefit on the service providers' service level and reliability.

In general there are no specific rules, requirements or validation processes defined for a company conducting or starting to provide eInvoice service provider activities. However, almost a prerequisite for a new service provider successfully conducting the business, is the capability to operate in a network with other service providers, as the customer base of a service provider is normally not large enough to operate only with a three corner model. Hence, a service provider hall be able to meet the general service promise and expectation set especially by SME customers, in order to cover the required connections to its suppliers/invoicers and not only with the service provider's own customers - but also with companies using other service providers.

In order to be able to provide reliable and successful services and to be part in a service provider network a service provider should at least meet the following criteria:

- Respect applicable laws, regulations, rules and recommendations in every country of operation
- Forwarding (eInvoice) data to other service providers at least minimum data content defined according to indicated in interconnectivity scheme(s)
- Transferring the data timely and protecting the data integrity
- Providing appropriate data security (agreement on security mechanisms and controls)
- Identifying the sender of eInvoice in appropriate level (comprehensive agreement with the client) for tracing purposes, when needed.

4.5 Interoperability agreement between service providers

Recommendation: *The service providers (routing parties) should make a business agreement that cover the issues of interoperability.*

The service provider services might be provided through direct connections with his clients or through interconnections by other service providers. The service providers' network is an approach to offer a wide range of national and cross-border connections to suppliers and customers. To create smoothly running services in the networked approach, service providers need to agree on issues related to interoperability

Minimum set of issues and requirements for interoperability agreement are listed in this paragraph

The **service provider interoperability agreement** should define:

- Agreement parties and their detailed contact information
- General obligations for the parties
- Definitions of, and standards for, contracting parties' services
- Changing the services of contracting parties
- Service availability
- Technical solution(s) used
- Operations/SLA (Incident management)
    - Commonly agreed operation principles, like procedures and practices for
        - Receiving
            To receive the invoice data and process it according to agreement with customer
        - Refusal (by customer's service provider) and possible reasons for it
            The content of the message is incomplete
            The identification of supplier's service provider is not possible
        - Acknowledgement of eInvoice data transfer (chapter 4.8)
        - Active party (in different cases)

Service providers should agree upon the use of eInvoicing transfer mechanisms (like push or pull)

- Interfaces and protocols between service providers (not varying according to invoicer/invoicee)
  - The communication protocols and processes between service providers should be based on standards and recommendations
  - For invoicer and invoicee the interfaces and protocols used between service providers should be transparent
  - Alternative data communication protocols used for eInvoice data (S)FTP, HTTP(S),
  - More than one protocol implemented by service provider, the communication protocols and processes between service providers should be based on standards and recommendations, usually service provider can manage several protocols.

- Data/material transmission principles
  - Batches
    The agreement parties should agree whether the invoices should be sent in real time or in batch
  - Connection of different documents/files
    - Naming of the files (time stamping)
    - Frames/envelopes

- Data integrity during the communication /transmission
  - The measures taken to ensure that processing (by receiving service provider) will not begin before all the data has been received.

- Data/material and identification
  - Acknowledgement mechanisms
    - Data/material level confirmation
    - Structure
    - Shortages, failures
    - Negative confirmation -> error code/specification?
  - Procedure and means to identify parties (Invoicer/invoicee) in transmissions between service providers
    - The place to represent identification info
      The identification of parties should be presented in the message envelope
  - Agreed guidelines for exchanging of different formats between service providers
  - Interoperability agreement with guidelines and specifications (e.g. technical specification, handling of message extensions etc)
- Malfunctions
  - Commonly agreed procedures for resending or reprocessing of eInvoice data (within certain period of time)
  - Checking of the duplicates (as sender's responsibility)
  - Action plan to handle malfunction situations
    - Workflow model and process definition
    - Contact points and availability requirements
  - Active party in different malfunctions
  - Alert points

- Traceability
- Compensation for damages and limits to liability
- Confidentiality and secrecy
- Agreement validity and notice of termination of the contract
- Handling of contractual disputes
- Definition of the terms used in agreement

4.6 Data Interchange

Recommendation: *Service provider shall use standard based and reliable data interchange solution that is feasible for the client as well as other service providers*

The primary task for an eInvoice service provider is to transmit the invoice data and documents from the previous party to the subsequent party in the transaction chain according to the agreement made between these parties and service provider.

Service provider's responsibility is to execute the task meeting the legal requirements related to the service provider activities as well as following the general recommendations and good practices. A service provider must also follow the commercial contracts agreed with its customers as well as interoperability agreements with other service providers (e.g. SLA). Operational and technical issues related to data interchange between service providers and service provider networks shall be described in detail under the service provider interoperability agreement.

The data interchange protocol(s) used between service providers is upon their agreement but certain basic requirements must be met. The data interchange and related process interfaces between service providers should be based on international standards and recommendations.

At the moment most commonly used data interchange methods are UN/EDIFACT -message (INVOIC) and some XML based invoice messages. As mentioned in the chapter 5.4 (Common format for eInvoice) the ideal situation would be that there is only one common format for data interchange between the service providers. The EEI group has adopted the UN/CEFACT Cross Industry Invoice for the general eInvoice format and is supporting the use of CII specification for European electronic invoicing. EEI group is also defining a subset version “core invoice“ based on the CII.

For the trading parties the data interchange protocols used between service providers should be transparent and not in any means cause additional burden or cost.

4.7 Routing

Recommendation: *A service provider should use the best available routing solution for his client and advise the client on alternative routing solutions.*

The chapter Interconnection Scenarios introduced already some examples for routing of eInvoices. There are generally no specific features in routing of eInvoices compared to other business messages.

Any service provider providing services for data interchange and routing of electronic messages could maintain and provide publicly a listing of other service providers with whom he has interoperability connection and agreement. In addition to that, the service provider could specify the conditions under which, if any, he agrees to transmit electronic documents (also other than eInvoices) to or between companies without providing any value added services.

This document is not discussing different routing technologies and protocols but merely the functionality of eInvoice routing. In eInvoicing the main routing requirement is to identify the service provider for the Customer (eInvoice receiver) to find a right route to forward the message to customer via his service provider.

4.8 Electronic ID’s – (eInvoice addressing for routing)

The eInvoice addressing implementations used for routing activity between service providers should include the eInvoice address for their customer and the (customer’s) service provider address (ID).
Service provider addresses could be used for routing and follow the same structure(s) as individual organization’s eInvoicing address.

The customer organization’s eInvoicing address should be created (e.g. according to ISO/IEC 6523) in a way which is independent from his service provider’s identification, in order to allow flexible tendering and selection of service provider to be contracted. So that the individual ID for customer remains always the same even in case a customer might use several service providers. The routing (through service providers) should be agreed between supplier and customer (buyer). Separate address for customer and service provider also support distributed maintenance of eInvoicing registries.

Service provider providing third party services should without delay share electronic contact information (eInvoice address) of his clients in public eInvoicing registry (national or European wide). However, an individual client can request the service provider not to publish his eInvoice address, as no end–user should be compelled to publish such information.

For processing purposes, address structure/type used should be indicated in the message in appropriate field.

4.9 Message Confirmation - Functional Acknowledgement

Recommendation: *The direct functional acknowledgement should be used for roaming services*

Roaming includes a message interchange between at least two service providers. Additionally cross-border transfers could be conducted.

Generally, there are two possible scenarios for functional acknowledgement:

a) Direct functional acknowledgement
Here the reception of a message triggers the functional acknowledgement immediately. Each receiver is expected to “confirm” the reception of the interchange, except the final eInvoice receiver (we cannot expect that each subscriber is able to send a functional acknowledgement). In result, each originator knows the status up to its next neighbor in the transaction chain.

b) Long-running functional acknowledgement
In this scenario the message flow follows the cascade of senders and receivers until the last one (the delivering service provider) generates the first functional acknowledgement message. All other members of the chain before have to suspend the current transaction and have to wait until the functional acknowledgment message from the neighbor arrives. After receiving the functional acknowledgement, the transaction can be finished and it can be time-stamped and routed back.

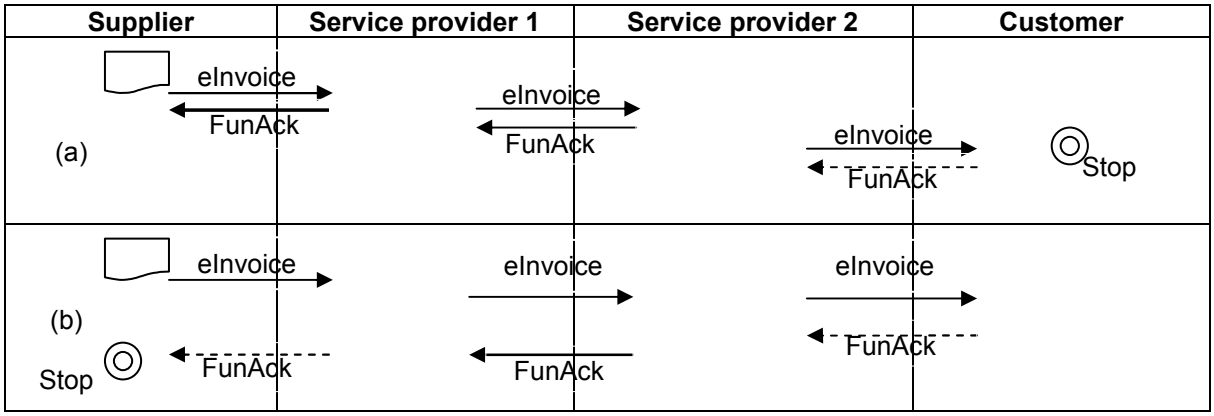

Figure 4 - Examples of Functional Acknowledgement messages

The following points are important to be agreed between service providers in order to ensure a reliable roaming service for all providers (these are related also to the interoperability agreement):

- Correct differentiation according to the status levels
- Receive confirmation (this might be done by the transfer protocol as well)
- Acceptance or rejection of transmission
- Outgoing Function Acknowledgement (complete as well as partial)
- Inbound Function Acknowledgement (reconciliation)
- Retry functionality whenever FunAck is missed (timeout configurable), complete (interchange level) set or partial (message level)

- A message format for functional acknowledgements has to be agreed (or an existing format has to be used[5]) for compatibility between service providers. This format should include at least the following items:
  Transfer section containing:
  - Sending service provider party
  - Receiving service provider party
  - Date/timestamp
  - Message/Interchange ID
  - Functional acknowledgement status
  - Functional acknowledgement status text/description

Based on the decision, which of the conversion scenarios (see below) will be implemented, it might be necessary to dynamically add transfer sections inside the functional acknowledgement message for tracing/tracking.

In order to minimize the implementation effort and to enhance the transaction management for the service providers this CWA recommends the scenario (a) (direct functional acknowledgement) to be used for roaming services.

5 Conversion

5.1 Need for conversion

One of the main tasks of the service providers, in addition to transmit the messages between different parties in the eInvoicing network, is to provide conversion services for suppliers and customers, when required. In an optimal situation there would exist only one single eInvoice format with commonly defined data content and structure.

In reality, the optimal situation is almost impossible to implement because of the different data requirements and legacy systems, especially ERP and financial, suppliers and customers are using. The invoicing solutions often require eInvoice content in proprietary format as input and provide proprietary eInvoice formats as output. However, an increasing number of new invoicing software products are more flexible and able to process different eInvoice message formats and data.

5.2 Recommendations for conversion

In situations where conversion is needed a service provider should not make any changes or other reproduction in the content of an electronic invoice message while it is in his custody, unless agreed with his client.

Service provider carrying out conversion services shall provide his client with details of the conversion and, if needed, advise on the necessary mechanisms for storage and audit trail.

Conversions are always increasing the cost, complexity and possibility for errors and malfunctions in the eInvoicing chain. Hence, unless specifically contracted by trading party, a service provider shall make no attempt to open, interpret or reproduce electronic messages.

A great step forward in national, regional and international environment would be a commonly agreed interchange format in eInvoicing communication between service providers. The use of common format could create remarkable benefits and cost savings in terms of fewer conversions made by service providers as well as reduced need of mapping of invoice content when establishing new connections.

[5] e.g. UN/EDIFACT CONTRL -message

5.3 Different conversion scenarios

Service providers may convert the format of eInvoice during the transmission, according to the needs and requirement by Supplier and Customer.

Scenario A

Figure 5 - Conversion scenario A

There are normally two types of conversions with the eInvoice formats. In the first scenario (A) there is only one service provider needed if both parties (Supplier and Customer) have connection to same service provider. In that case, independently from the format used by the parties the service provider will make the conversion from eInvoice format used by Supplier to the format used by Customer.

Scenario B

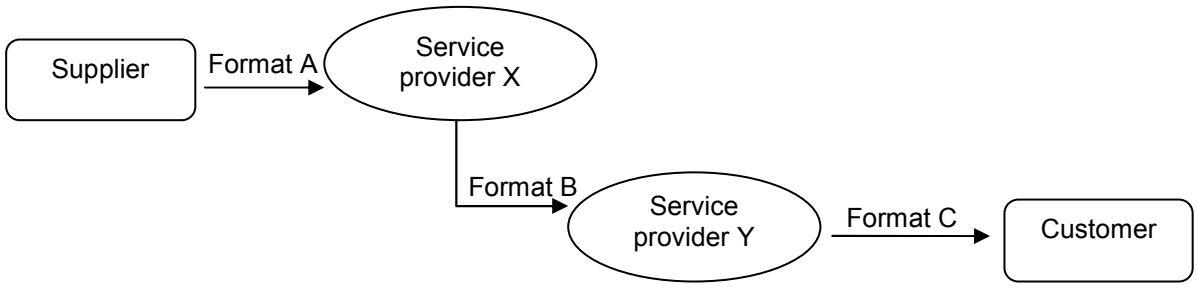

Figure 6 - Conversion scenario B

In the other case (B) Supplier and Customer are connected to different service providers and the service providers need to transmit the eInvoice between each other. In this scenario there might or might not be the conversion of eInvoice formats during the transmission between service providers. This scenario might require maximum three conversions along the transmission chain of eInvoice file. The first conversion could take place when Supplier's Service provider (X) converts the Supplier's eInvoice format (e.g. inhouse) to the format used between Service providers and then Customer's Service provider (Y) converts the eInvoice message to the format used by Customer.

There are also some special cases with both scenarios. In scenario A, the Customer and Supplier might use the same format and in that case the actual conversion is not needed but it might happen that these parties invoicing software uses and handle the formats in a slightly different manner and therefore the action by the Service provider is required.

In scenario, B a special case might come up if the Service providers 1 and 2 do not have connection between each other. In that case, a third Service provider is needed for connecting the transit chain.

The trading partners and service providers should introduce testing plans for invoices and also agree on the results of the tests before moving forward to the production. This is especially important if several conversions will be made along the data communication chain.

Now there are no specific legal requirements for eInvoice format conversion. However, in different countries there are other regulations and rules that affect to conversion. Whenever the conversion is properly documented so that in case the tax authorities want to review the invoicing and accounting they will be able to track and trace the conversion that happened and possibly the moment that the original invoice is created.

According to the legislation, it is on the Supplier's and Customer's responsibility to archive the original electronic invoice whether converted or not. However, they can use third party services to accomplish this task. A service provider carrying out conversion services shall provide his client with details of the nature of the conversion and, if needed, advise on the necessary mechanisms for storage and audit trail. The 'Original invoice' is discussed in respective chapter (5.6)

5.4 Common format for eInvoice

***Recommendation**: Agreement of using one common format for eInvoice as well as implementation guidelines (between Service Providers) should be created and implemented by the eInvoice Service Providers.*

It would be beneficial for the interoperability of the eInvoice transfer chain if there is one common format for forwarding eInvoices (message) at least between the eInvoice service providers. This would be paramount where the involved legal systems require that eInvoices at both parties (i.e. sent and received eInvoices) are identical, as it occurs where an Advanced Electronic Signature is used as per Directive 2006/112/EC Art. 233 (1).a).

Definition, agreement and implementation of a common eInvoice format would reduce the need for conversions during the interchange and reduce complexity and diversity in eInvoice message implementations, possibility for errors as well as increase the reliability of interchange.
Definition and wide communication of the common format to software developers, vendors and implementation by eInvoice users would also increase the uniform use of data components and encourage companies to review their processes and procedures at least in the area of invoicing.

The use of a common eInvoice format will not prevent or influence the innovation and creation of competitive features in eInvoice software solutions or service provision possibilities by eInvoice service providers.

The Expert Group on eInvoicing of the European Commission has chosen the UN/CEFACT Cross Industry Invoice as a candidate for the general eInvoice format and is supporting the use of CII specification for European electronic invoicing. It also strives to define a subset "core invoice" based on the CII.

5.5 Minimum information content

***Recommendation**: Definition of minimum information content of single eInvoice format for transmission between Service providers should be implemented by the eInvoice Service providers.*

In order to facilitate the exchange of eInvoice data between Supplier and Customer as well as service providers and service provider networks, in a way that all the required information will be transferred through the whole chain a minimum data set for eInvoice has to be agreed.

It is important to recognize that there will always be different needs for information content in invoice in different industry domains and administration sectors. This is based on the different usage and types (trade of goods, services, order based invoices and invoices without order, etc.) of invoices. However, there is common information content for an invoice that should comprise the basis for eInvoice minimum information. The actual amount of additional information, above the legal requirements (VAT), needed to make the invoice an efficient and effective trade document must be agreed between the trading partners (Customer and Supplier or the other roles these parties assume in the trade transaction), or determined by regulatory or administrative requirements.

A good basis for this minimum information could be based on the UN/CEFACT definition for the eInvoice (Cross Industry Invoice).
EEI group strives to define a subset "core invoice" that is based on the CII. The intention is that the vast majority of eInvoicing data requirements could be fulfilled with this "core invoice" definition.

The minimum data set should meet, at least, the VAT and the normal business requirements (CWA 15575/2006):

- eInvoice header information (Party Identifications and VAT ID, unique invoice number, issue date, terms of payment, terms of delivery, date VAT becomes chargeable),
- Line item information (e.g. product/service ID, name, quality, unit price, extra charges and allowances, VAT rate)

- Summary information (e.g. total price, VAT amount, allowances, extra charges, breakdown of the VAT amount)

Examples of data given above for inclusion in invoice are illustrative and not exhaustive.

5.6 Original message in envelope

***Recommendation**: In eInvoicing the message envelope should be used in order to send the messages securely over internet without any need for service provider to touch the eInvoice content.*

The message envelope is a method to provide routing information about sender and receiver of an invoice to service provider in order to allow the service provider to fulfill its transmission task without touching the actual payload of a message.

As an example, there is a short description of three widely used enveloping specifications namely: AS2, MIME and ebMS.

AS2 –specification. (RFC4130)
AS2 defines how to deliver, validate and acknowledge data, and to envelope a message that can be sent securely over the Internet. AS2 implementation is based on a client and server solution communicating with each other over the Internet. At the operating system level, the AS2 client may be a server as well, offering its communication services to application software.
The client sends data to the server (e.g. a trading partner); on receipt of the message, the receiving application sends an acknowledgment or MDN (Message Disposition Notification) back to the sender

MIME specification (RFC2045)
MIME is Multipurpose Internet Mail Extensions, and refers to an Internet standard that specifies how messages must be formatted so that they can be exchanged between different email systems. MIME is a flexible format, also to exchange structured business data that may be XML, UN/EDIFACT; or other structured data formats. S/MIME is a protocol to add a digital signature to MIME message

ebMS specification (ISO/TS 15000-2)
The ebMS specification defines a protocol neutral method for exchanging electronic business messages. It defines specific enveloping constructions supporting reliable, secure delivery of information contents. It defines also a flexible enveloping technique permitting messages to contain payloads of any format. This versatility ensures that legacy electronic business systems employing traditional syntaxes (UN/EDIFACT) can provide the advantages of the ebXML infrastructure.

5.7 Original Invoice

***Recommendation:** When the requirement to identify the original invoice is applied the trading parties have a responsibility to agree which dataset they treat as the original invoice prior to starting an invoicing process, it should be clear who creates the original invoice and whether it is in paper or electronic format.*

The concept of Original invoice and its definition are complicated as there are variations in requirements among member states, but the issue is important for service provider's activities, especially when related to digitally signed and converted electronic invoice as well as archiving of invoices.
In an electronic invoicing context, the trading parties must agree upon the dataset that is exchanged between them and that they designate and treat as the original invoice. Each trading party is responsible for ensuring that there can be no confusion as to which dataset available to a tax auditor represents the original invoice. In some countries conversion may be allowed between issue and receipt of an invoice / invoice data when using process-based controls, but this should then be subject to stringent audit trails, meaning each conversion after the issue of the invoice should be independently reproducible for the duration of the storage period. Consequently, trading parties and their service providers must agree to keep such audit trails available to each other for the relevant period.

The requirement for identification and archiving an original invoice exists in legislation of some European countries. "Originality" in this context is a precondition of the auditability of an invoice. To satisfy the originality requirement, the supplier must store the invoice as sent and the buyer must store the invoice as received even under Article 244 of the VAT Directive (Council Directive 2006/112/EC) a supplier must store a

"copy" of the invoice and whereas the buyer must store "the invoice". Both these datasets are referred to as "original" from an auditability perspective.

The sixth directive 77/388/EEC empowers the Member countries to require the creation and archiving of the original invoice for tax purposes. "Original invoice" in electronic invoicing context means the set of invoice data in their original form or state as sent by or on behalf of a supplier to a buyer, and which can be verified not to have been changed since it was issued.

In current market reality, the national requirements are variating from no requirement for original invoice to unaltered original invoice in both ends of the eInvoice chain. For workflow purposes, a general solution for visualization of the electronic invoice is to use unchangeable representation of eInvoice content.

5.8 Electronic Signature

According to the Council Directive 2001/115/EC: "*invoices sent by electronic means shall be accepted by Member States provided that the authenticity of the origin and integrity of the contents are guaranteed*".

Electronic signature is one of the means to guarantee the authenticity and integrity of an electronic invoice, also when transmitted by EDI or certified by other reliable means the same requirement applies. A third party service provider can also sign an eInvoice on behalf and in the name of Supplier (sender).

The requirements for implementation of electronic signature in invoices are varying in different member states from no requirement of electronic signature to very strict regulation and requirements. A service provider must comply with the requirements of respective country of operation.

CWA for eInvoices and digital signatures (CWA 15579:2006) defines the digital signature in eInvoices as well as the formats used. The technical issues or formats of digital signatures in eInvoices are not discussed in this document on hand as it is defined in above mentioned CWA. There will be also further information on the use of electronic signatures provided in CWA 16048 of project 2 and 3 of Phase II of the CEN/ISSS Workshop on Electronic Invoicing in the European Community where this CWA is also a deliverable of.

5.9 Archiving

***Recommendation**: When archiving the (original) electronic invoice it must be kept exactly as it was sent and received.* [6]

The trading parties must archive invoices for the storage period required by respective member state in "original format" in both ends (supplier and customer) of the chain. A service provider may archive the invoice on behalf of the trading party as a value added service.

Each trading party must store the original invoice. This means that in some countries a representation of the invoice (e.g. ERP data) may be stored subject to the invoice being reproducible in its original format. This places stringent requirements on the ERP system so that possible changes to source data do not affect the content of the original invoice.

Invoices may also be archived in other EU-member state (possibly with additional requirements) and some member states allow the archiving in non-EU member state. However, taxable parties must ensure the possibility for audit of the invoices for competent tax authorities online and within reasonable time. In general country specific requirements have to be taken into account in archiving.

There will be also further information on archiving of electronic invoices provided in CWA 16048 of project 2 and 3 of Phase II of the CEN/ISSS Workshop on Electronic Invoicing in the European Community.

[6] **Original Invoice** is defined in CWA 16048 by TG2

6 Additional third party services

6.1 Benefits of third party services

An electronic invoice data exchange can be a single message between two parties, but it can also be one of several messages in an electronic commerce process where the parties perform multiple roles.

The guidelines for eInvoicing service providers have been introduced in CWA 15581:2006. The CWA 15581 defines a third party service provider: “A company to whom specific task or services are outsourced. In electronic invoicing some or all the tasks associated with creation, issuance, format conversions transmissions, storage etc. may be outsourced to a third party”.

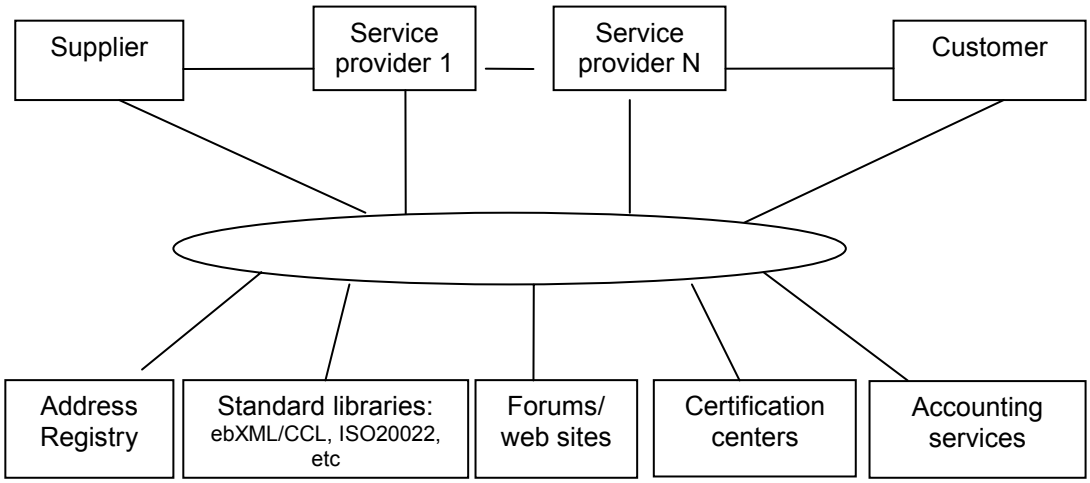

Figure 7 - Examples of Third Party Services

The benefits for Supplier and Customer utilizing third party services in their operation are mainly related to cost and resource savings. The third party services can provide:

- expertise in technical operation
- hardware and software solutions
- expertise in accounting and purchase/sales ledger
- archiving services
- certification services
- expertise in legal and tax related issues
- etc.

6.2 eInvoicing Address registry

6.2.1 The purpose of Address registry

Electronic business (invoice) address registry is one of the most important services for eInvoicing network and interoperability. The registry can enhance the adoption of eInvoicing by indicating the companies already in the operation as well as new potential eInvoicing partners even among the company’s present business partners. Registry is also a catalogue of companies using eInvoices.

The main purpose of eInvoicing Address Registry (hereafter referred as registry) is to serve as a repository of eInvoicing addresses and provide information on organization’s ability to receive and send eInvoices to other organizations. Registries make it possible to implement networking and routing among eInvoice service providers nationally as well as those in different countries.

This document is focused on eInvoicing, however, it shall be born clearly in mind that the registry should be constructed utilizing the applicable international standards, so that it could be used also as a source for addresses to other electronic business documents, like order, order confirmation, dispatch advice etc. and

not solely for eInvoicing. The same address structure should support transfer services provided by service provider as well as point to point communication.

In electronic Invoice document exchange the parties (customer and supplier) are identified by their addresses. The first goal of the (eInvoice) address is to make it possible for the service provider to identify the customer intended to receive the electronic document and convey it to that customer. This is called external routing, and this is the primary concern and basic function of the eInvoicing service provider.

The second goal of the address is to help the customer to automatically process the invoice by routing the invoice internally to the intended destination, for example, a company unit or a person within the customer organization. This is called internal routing, and this is the major concern of the customer in order to be able to automate the handling of incoming invoice workflow.

Another important step in internal routing is supplier matching, which further enables the automatic incoming invoice processing. Supplier matching can be done by comparing the eInvoice address of the supplier to the customer's supplier register. Customers typically require that the sender of the eInvoice (supplier) also includes his eInvoice address in the invoice data. This is an experienced way by service providers is to use the supplier's eInvoice address for this purpose.

In order to obtain the best effectiveness and benefits of the utilization of registry it should be available publicly for companies using or considering implementing eInvoicing. Being publicly available, the registry can be used as extremely powerful tool for promoting the penetration of eInvoicing among companies and especially SME's that will be able to have concrete proof and evidence on the number of eInvoice senders and receivers among their present and potential business partners. Therefore it will provide some real value added for those companies as well as for the eInvoicing service providers.

6.2.2 General functionality

The main applications for registry are storing, retrieval and maintenance (update) of the eInvoicing addresses.

The users of eInvoicing Address Registry include mainly three categories[7]:

- Users
- Service providers/maintainers
- Registry super user(s)

Users can view and make searches via www-interface to the registry using different criteria. Service providers can maintain and update the registry with the address information on users. The updates and maintenance can be done with a structured file. In the information section of registry, the service providers can also provide guidance on their operational requirements and procedures, as well as their preferred formats and interfaces receiving messages to the users of the registry.

The registry super user is preferably an independent organization, like national eInvoicing Forum, having acknowledgement from service providers to conduct this task as well as having a technical and if sustainable financial independence from the service providers' functions. The super user's main responsibility is to ensure technical availability and operation of the registry. There could be different mixture of stakeholders and means providing resources for registry operation.

A set of criteria like a simple service level agreement (SLA) could be created for registry and also for the parties providing information for the registry.

[7] Third party service providers can utilise the registry on behalf of their clients in different roles

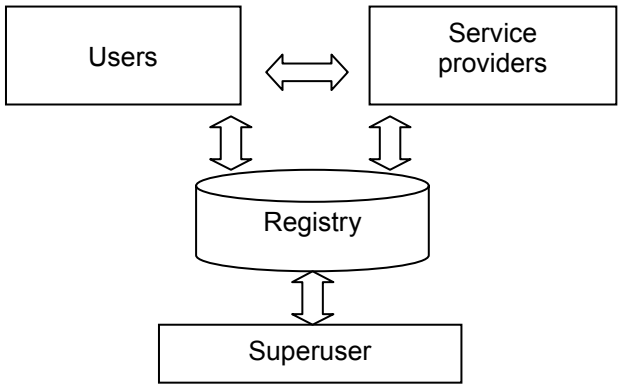

Figure 8 - Example of eInvoicing registry hierarchy

The registry should be an independent solution and not be connected to other systems, excluding the specific user, service provider and super user interfaces. The users should be able to use the registry through internet with standard browser software. The registry should be suitable for automatic retrievals and entries as well as manual viewing.

In the registry there could be different features provided for users to utilize it like

- Web service functionality for automated retrieval of registry information,
- XML based entry uploading features for service providers
- Different language options. etc

For service providers a specific interface, protected by access control and basic validity check-up measures. will be the main access to the registry for all their functions. The users could also be allowed to update their own information in the registry. This functionality must be protected by access control and basic validity check-up measures.

6.2.3 Overall description of the registry

The eInvoicing registry has different functions that have to be commonly defined in order to create smooth interoperability for users and service providers especially for building a European wide network for roaming of eInvoices between service providers. The registry shall consist of:

- Database of the eInvoicing related addresses
  - Database includes the information of eInvoice senders and receivers and service providers and their contacts as well as their details for sending/ receiving eInvoices.

- User interface
  - The main purpose of the registry is to provide users with information on organizations utilizing electronic invoicing and their eInvoicing addresses.
- User and maintenance interface for service providers
  - This function allows the service provider to maintain its own organization information in the database as well as the customer information for its clients.

- System maintenance and monitoring interface for super user
  - The system maintenance contains the functions for adding, updating and deleting the service providers' user ID's for Registry.

- User manual
  - The user manual for the registry is provided online

6.3 Addressing schemes

Recommendation: *Addressing schemes based on international standards should be used when assigning addresses for eInvoicing as well as other business data communication*

eInvoicing address registries provides necessary information for sending electronic invoices to respective organizations. In order to gain for the benefits of interconnectivity the different eInvoice address registries should be formed in a structured manner, as well as contain standard based information. CEN Cyber Identity (CID) CWA (draft version available when writing this) provide information on possibilities for addressing in electronic communication.

The challenge is the choice between defining and using a single organization ID or allowing the use of several alternative organization ID's within the eInvoicing registry system.

The structure for eInvoicing address should be defined on the European level, but preferably globally. The problem here is the lack of Global/European wide, all-inclusive, free of charge and neutral company/organization register on which the addressing could be based on.

However, there are reliable sources for organization ID's that may be utilized in eInvoicing addresses based on non-commercial and commercial schemes like:

1. Data interchange Structure, ISO/IEC 6523, is a standard for identification of organizations (OIS). In many countries ISO/IEC 6523-1 structure is used in a registry maintained by a national authority, often a government agency like a business register, tax authority or standards institute, providing ascertained quality data. This structure is often based on the use of VAT-numbers.
   ISO 6523-2 -Structure for the identification of organizations and organization parts - Part 2: Defines a meta-identifier scheme, the International Code Designator (ICD). It also defines registration procedures for the allocation of an ICD value to an identifier scheme and designates the British Standards Institute (BSI) as the registration authority. ISO/IEC 6523 has been adopted also by EDIRA – EDI Registration Authority[8] as a framework for assigning organization codes for EDI purposes.

2. IBAN (International Bank Account Number), ISO 13616:2003 is an international standard for identifying bank accounts. The IBAN was developed to facilitate payments within the EU.

3. The GS1's GLN (Global Location Number) provides a standard means to identify legal entities, like trading parties as well as locations to support the requirements of electronic commerce. The GLN is designed to improve the efficiency of integrated logistics while contributing added value to the partners involved, as well as to customers.

4. Data Universal Numbering System (D-U-N-S Number) is copyrighted and registered trademark of Dun and Bradstreet Ltd. It is maintained by D&B and provides possibility to identify Companies on location-based means. D-U-N-S number has been assigned to over 100 million businesses worldwide.

A important aspect in choosing the addressing scheme is reusability of the identification. One of the major methods for eInvoice data exchange, UN/EDIFACT, is supporting i.a. the use of the ISO/IEC 6523 based Identification method.

6.4 Minimum data requirements for Address Registry

The information content in the eInvoicing registry may vary within wide range, however it should cover the minimum data requirements in a structured format.
The eInvoice address registry should at least include the information on eInvoice senders and receivers and service providers, their contact details as well as their instructions for sending/receiving eInvoices.

[8] EDIRA (established 1995) is a service for the registration of organizations and services who are users of the EDI and the issue of an "Identity Code" to them which is unique and recognizable at global level.

6.5 Security requirements for registry information

The eInvoice address registry contains lot of business information qualified with specific criteria (active users of eInvoicing) and there should not be any doubts among the organizations providing their information that it may be misused. However, the information on contact details is often freely available from other sources as well.

On the other hand the eInvoicing registry can be seen as an extremely powerful marketing and PR tool for companies having their information in the registry as well as the eInvoicing service providers hence, the eInvoicing registry should be publicly available for viewing.

6.6 Confidentiality

The information in the open registry should not include business sensitive or confidential information. Therefore the confidentiality is not a major concern with the registry. However service providers maintaining the information on behalf of their client organizations should take the responsibility that any information a company might not want to publish is not entered in the registry. The super user's responsibility is that the registry data is not possible to be fetched in such a format that allows misuse of the information e.g spamming to contact email addresses. Customer may request service provider not to publish his eInvoice address, as no end–user should be compelled to publish such information.

6.7 Integrity

The editing of the data in registry is secured, so that there is no possibility for unauthorized editing of the registry. The registry log should keep track on the edits and editors in registry.

The service providers are responsible for their own entries in the registry. All incorrect data must be fixed by the service provider to ensure that the errors are amended simultaneously in all relevant positions. The registry system itself should be build so that there is no possibility for unintended modification to other service provider's entries.
A specific format and validation mechanism for the data entered in the registries should be defined as those enable the conformance and general usability of the registry information.

6.8 Availability

The eInvoice registry should be available for user organizations and service providers full time.
The information should be made accessible for viewing through a user interface (browser) and also through a commonly agreed automated interface as referred to earlier in this document. The authorized users of the registry are allowed to make batch queries and retrievals from registry.

6.9 Other third party services

In addition to the address registry there could be also some other third party services provided by service providers and other parties for eInvoicing purposes. These services are often directly connected to eInvoicing and/or electronic data communication, like

- Archiving the invoices on behalf of Supplier/Customer
- Core Components Libraries (including basic Core components, code lists, EDI libraries, XML schemas, Business Processes etc). – ISO/TS 15000
- Workflow management services and facilities of invoices

6.10 Certification centers (service provider)

Recommendation: Independent bodies should be established or accredited to asses and certify the quality of eInvoice service providers

In different countries there might be a need to establish a mechanism for neutral assessment of eInvoicing service providers.
Especially the SME's are very much dependent on the services by the service providers in their eInvoicing activities, but only very few of them are able to independently assess and compare different offerings and the service quality of service providers.

According to European Commission (Art. 26 Directive 2006/123/EC):

"Policy on quality of services
1. Member States shall, in cooperation with the Commission, take accompanying measures to encourage providers to take action on a voluntary basis in order to ensure the quality of service provision, in particular through use of one of the following methods:

(a) certification or assessment of their activities by independent or accredited bodies;…"

The Certification centers for eInvoicing services could ensure the quality of services and hence facilitate the penetration of electronic invoicing among SME's.

The Certification Centers could test and certify quite much the same features and qualities of the service provider as indicated in service provider criteria. Certification center should be able to test both technical and functional qualities of service provider, including but not limited to:

- Receiving and sending
- Managing different protocols and format conversions
- Providing security and control mechanisms
- etc

List of Figures