PEPPOL
PAN-EUROPEAN PUBLIC PROCUREMENT ONLINE

Intro to newcomers

André Hoddevik, Sören Pedersen & Martin Forsberg

PEPPOL
PAN-EUROPEAN PUBLIC PROCUREMENT ONLINE

Infrastructure where Buyers and Sellers can exchange e-documents

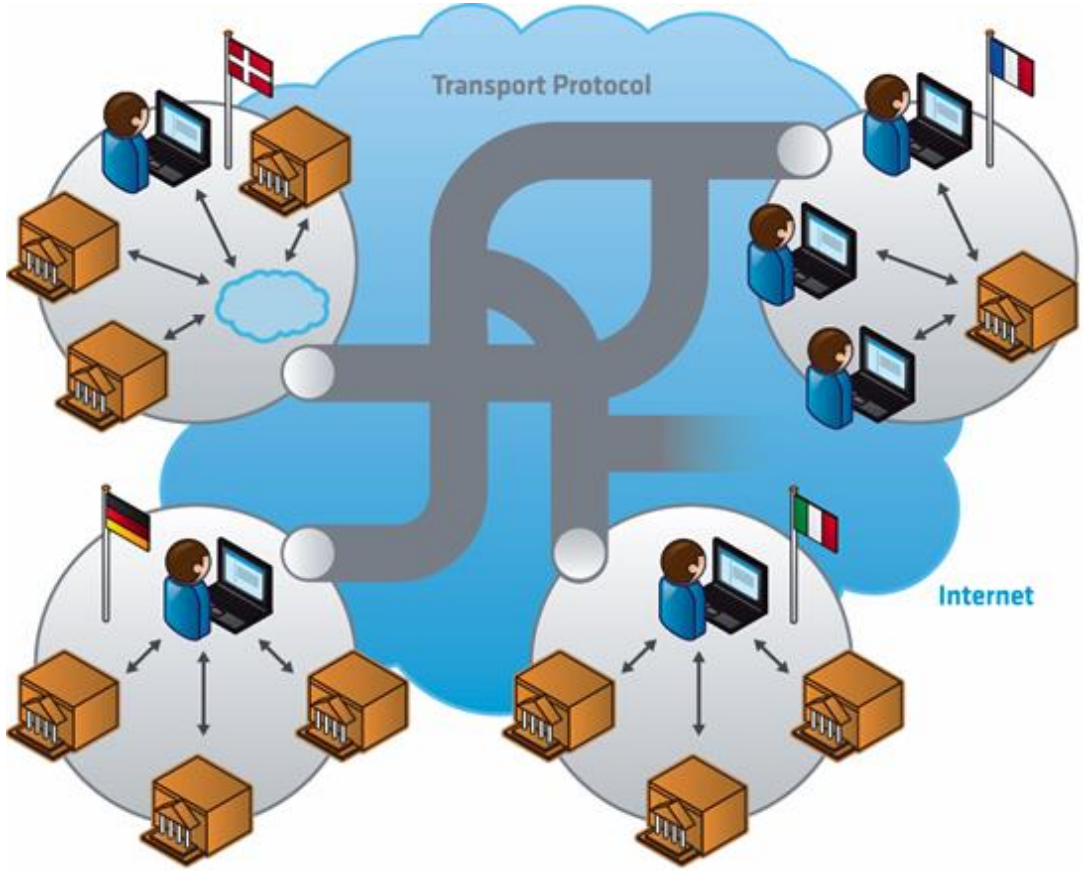
Specifications for electronic invoice, order, catalogue…

Non-for-profit organisation which maintains and governs

The organisation

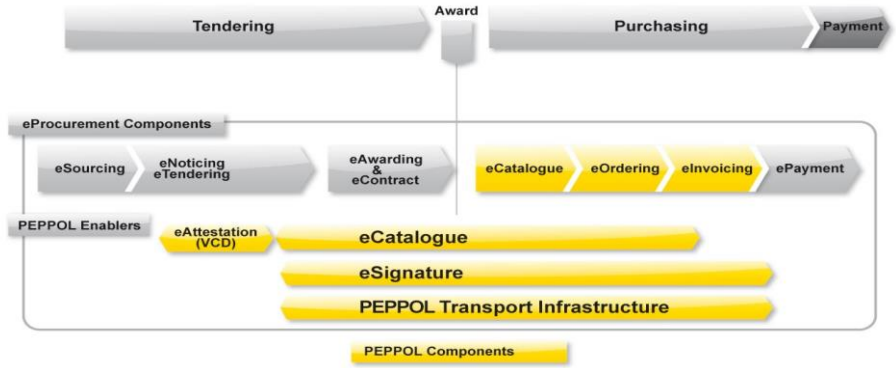
The PEPPOL Vision

To enable businesses to communicate electronically with any European public sector entities in the procurement process, increasing efficiencies and reducing costs

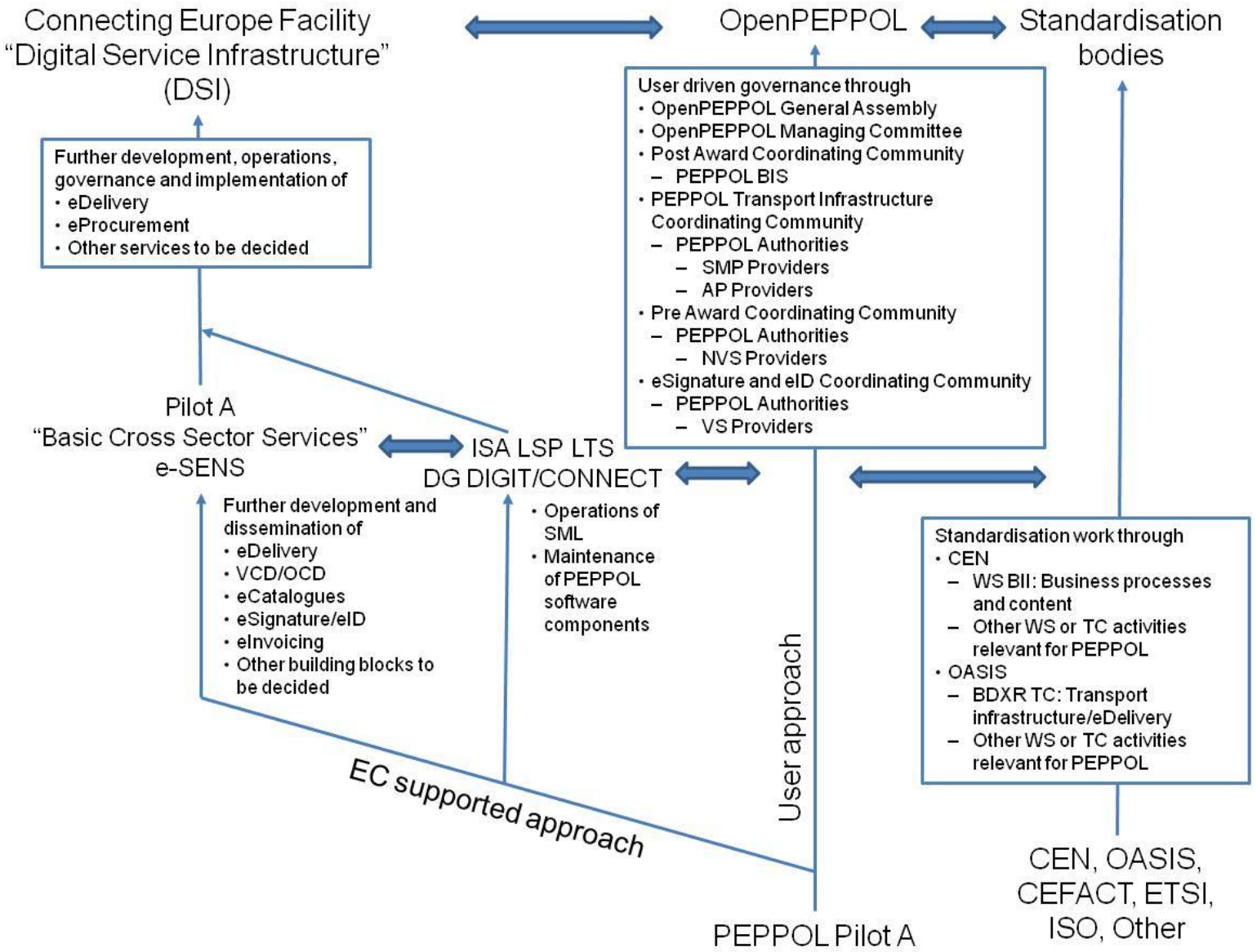


The PEPPOL project

- The PEPPOL (Pan-European Public Procurement On-Line) project (2008-2012) was launched to address the key e-Procurement challenges in Europe as a large scale pilot (Pilot A) under the Competitiveness and Innovation framework Programme (CIP) ICT Policy Support Programme (ICTPSP).
- Its €30.8 million budget was jointly funded by the EC and a consortium of 18 government agencies from 11 European Countries, led by Difi, Norway
- First versions of services and specifications developed
  - **Pre-award procurement process support**
    eAttestation (VCD), eCatalogues, eSignature validation
  - **Post-award procurement process support**
    eCatalogues, eOrdering, ***eInvoicing***, eDespatch Advices
  - **Transport Infrastructure (eDelivery network) and Governance**
    Legal framework for many-to-many interoperability through PEPPOL Transport Infrastructure Agreements (TIA)



The PEPPOL long term sustainability plan – 2012

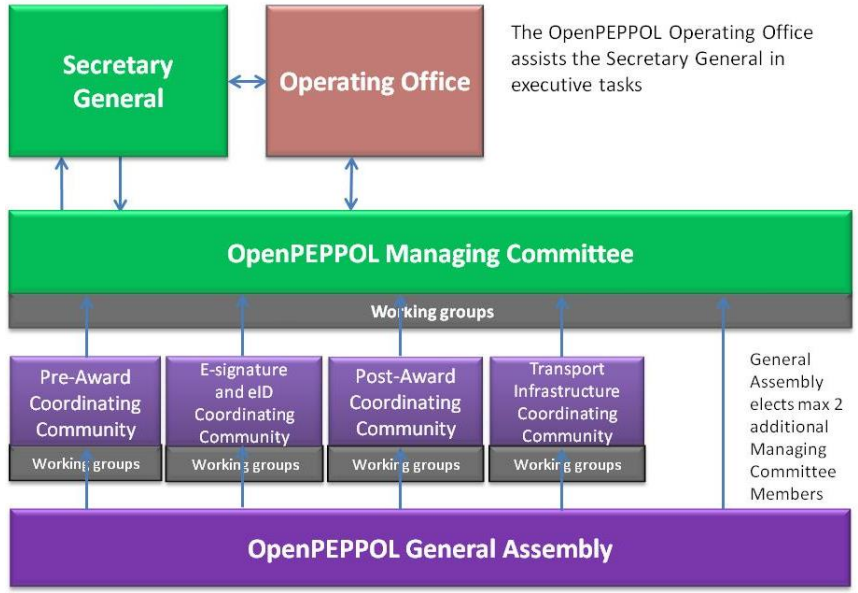


OpenPEPPOL AISBL – 2012

The PEPPOL project reached a ***successful completion***, 31st of August 2012. ***OpenPEPPOL AISBL*** has been operational from 1st of September 2012, taking over ownership of PEPPOL results and governance responsibilities.

OpenPEPPOL's goals are:

- ***Encourage European governments*** and their suppliers to continue ***implementing eProcurement using the PEPPOL specifications***, promoting best practices
- ***Ensure that the PEPPOL network continues to grow in an open, accessible and compliant manner***, supporting interoperability for European public services and helping Europe move towards a Digital Single Market
- Encourage the development of ***innovative PEPPOL-based ICT products*** and services supporting public procurement processes, fostering their use also in the B2B context
- 5 OpenPEPPOL members from 5 countries



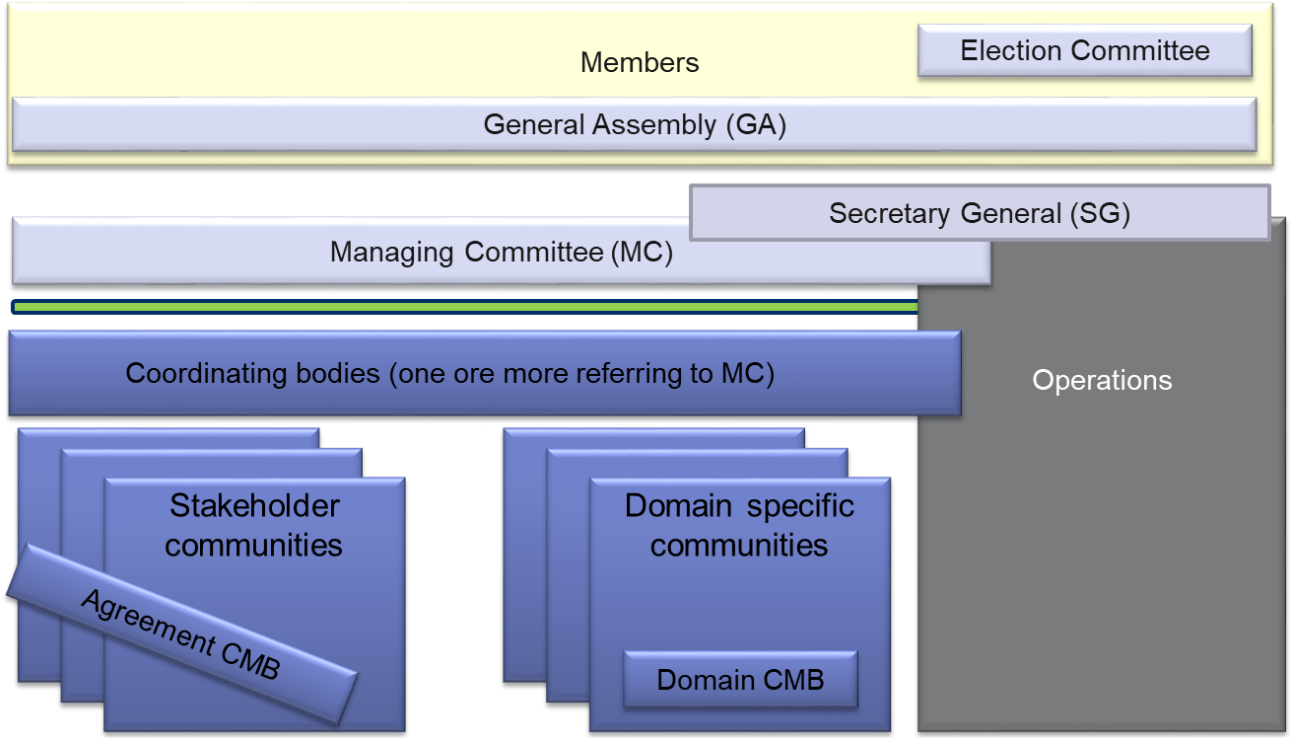
All OpenPEPPOL Members form the General Assembly

OpenPEPPOL AISBL – 2019

- Encourage European governments and their suppliers to continue implementing eProcurement using the PEPPOL specifications and promoting best practices
- Promote and support the development of innovative PEPPOL-based ICT products and services supporting public procurement processes, ***promoting their use also in the B2B context to harmonise processes across the private and public sectors, simplifying eProcurement adoption for SMEs***
- Ensure that the PEPPOL network continues to grow in an open, accessible and compliant manner, supporting interoperability for European public services and helping Europe move towards a Digital Single Market
- ***Business to business use of the PEPPOL-compliant infrastructure and use of PEPPOL-components in other areas beyond procurement and outside Europe are also recognised as important and are encouraged by the Association***
- 327 OpenPEPPOL members from 34 countries

The OpenPEPPOL Governance Structure – 2019

- Strategic governance
  - To manage, monitor and lead the strategic development of the OpenPEPPOL business model, its scope and statutory focus
- Governance of sustainability and development
  - To manage, monitor and lead development and maintenance of the PEPPOL specifications, policies and artefacts
- Operational governance
  - Day-to-day administration and operation of the Association and the PEPPOL eDelivery Network



PEPPOL eDelivery Network growth

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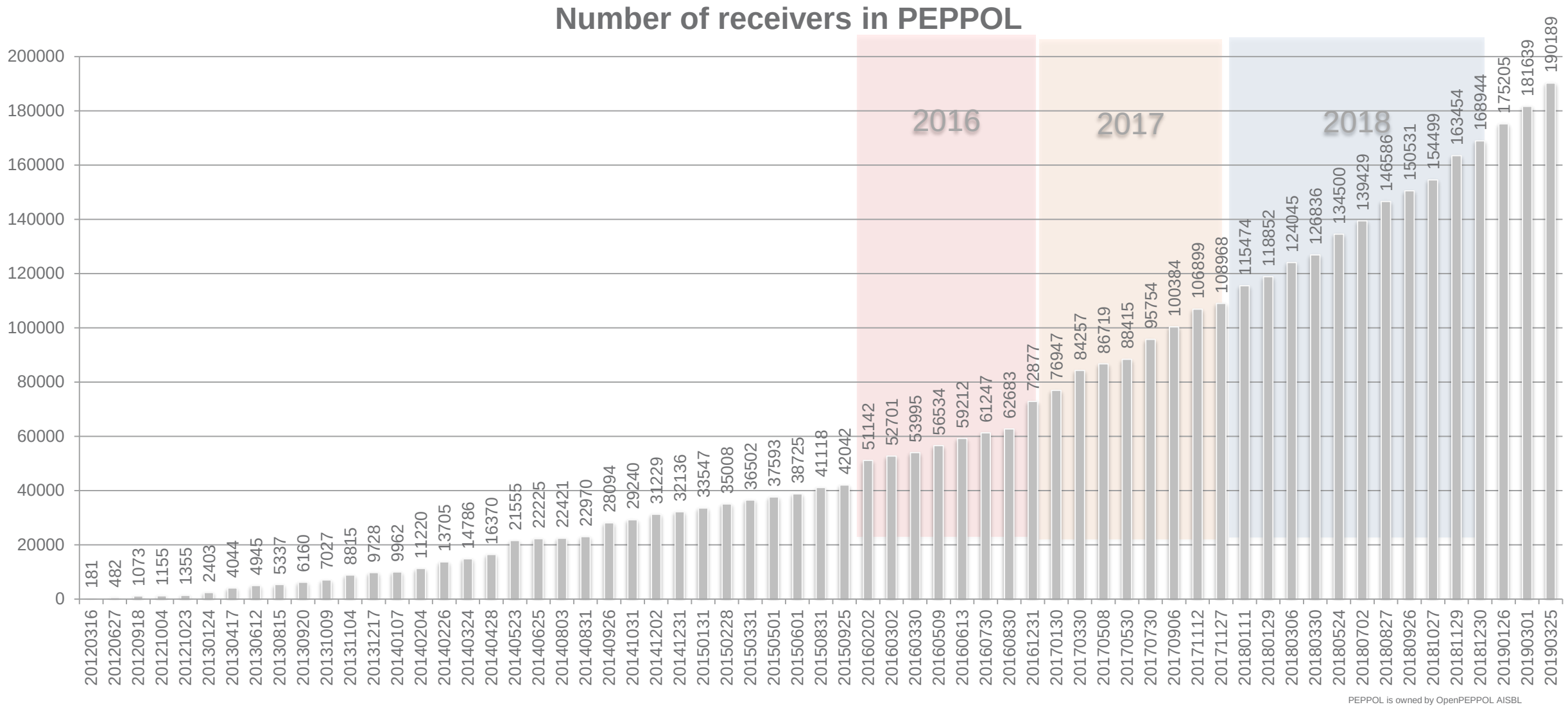
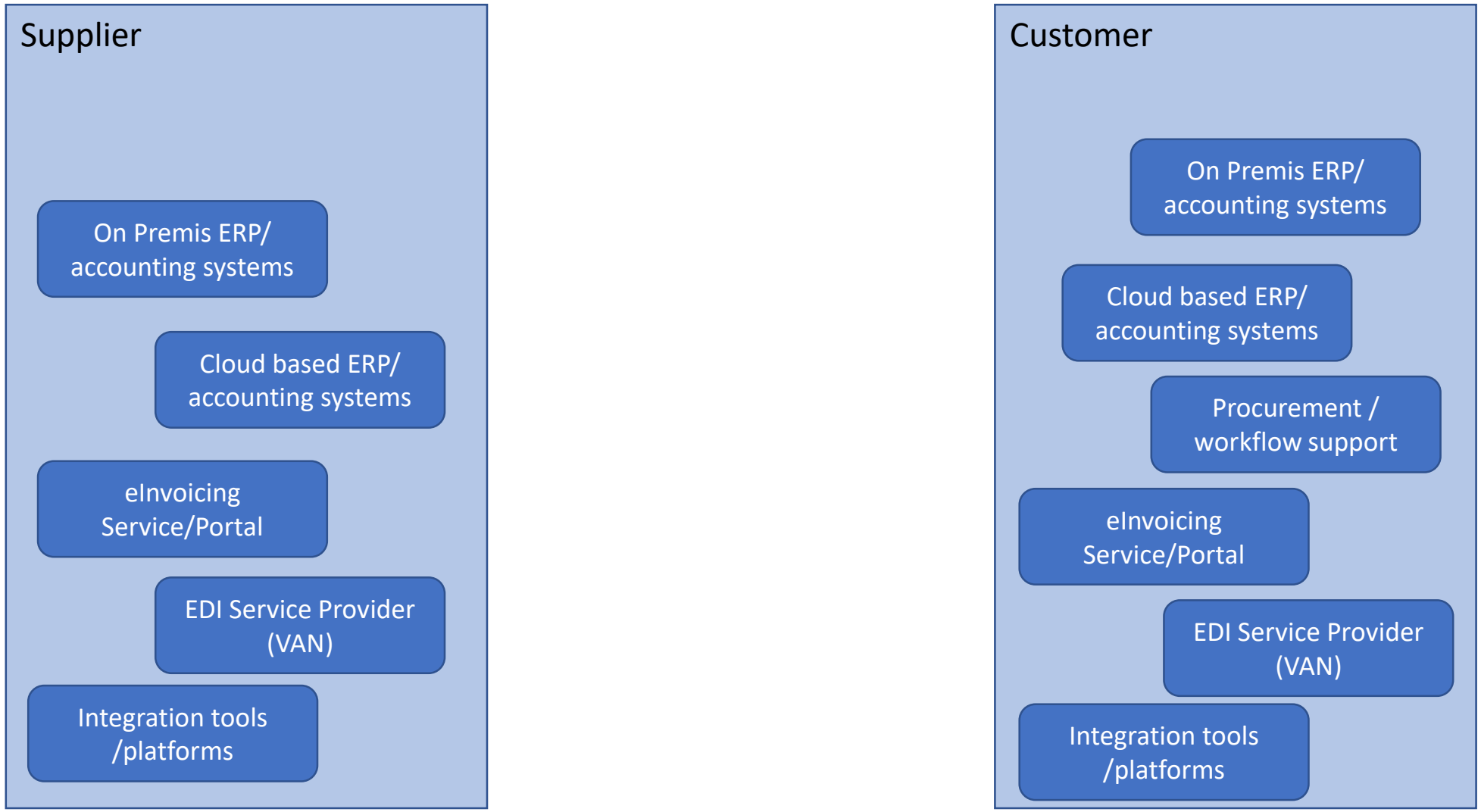
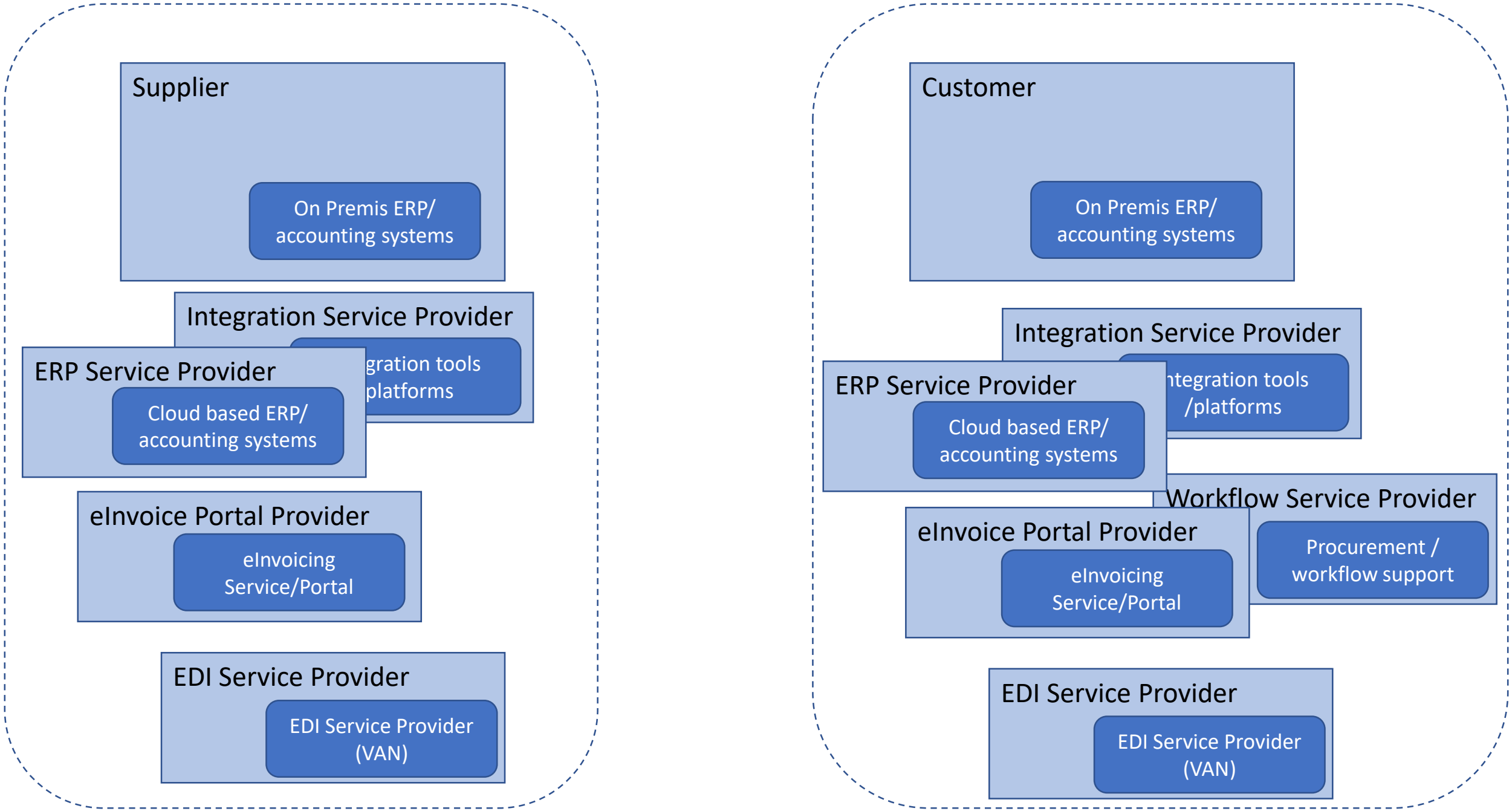


eDelivery


Supplier
On Premis ERP/ accounting systems
Cloud based ERP/ accounting systems
eInvoicing Service/Portal
EDI Service Provider (VAN)
Integration tools /platforms
Customer
On Premis ERP/ accounting systems
Cloud based ERP/ accounting systems
Procurement / workflow support
eInvoicing Service/Portal
EDI Service Provider (VAN)
Integration tools /platforms


Supplier
On Premis ERP/ accounting systems
Integration Service Provider
gration tools platforms
ERP Service Provider
Cloud based ERP/ accounting systems
eInvoice Portal Provider
eInvoicing Service/Portal
EDI Service Provider
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Customer
On Premis ERP/ accounting systems
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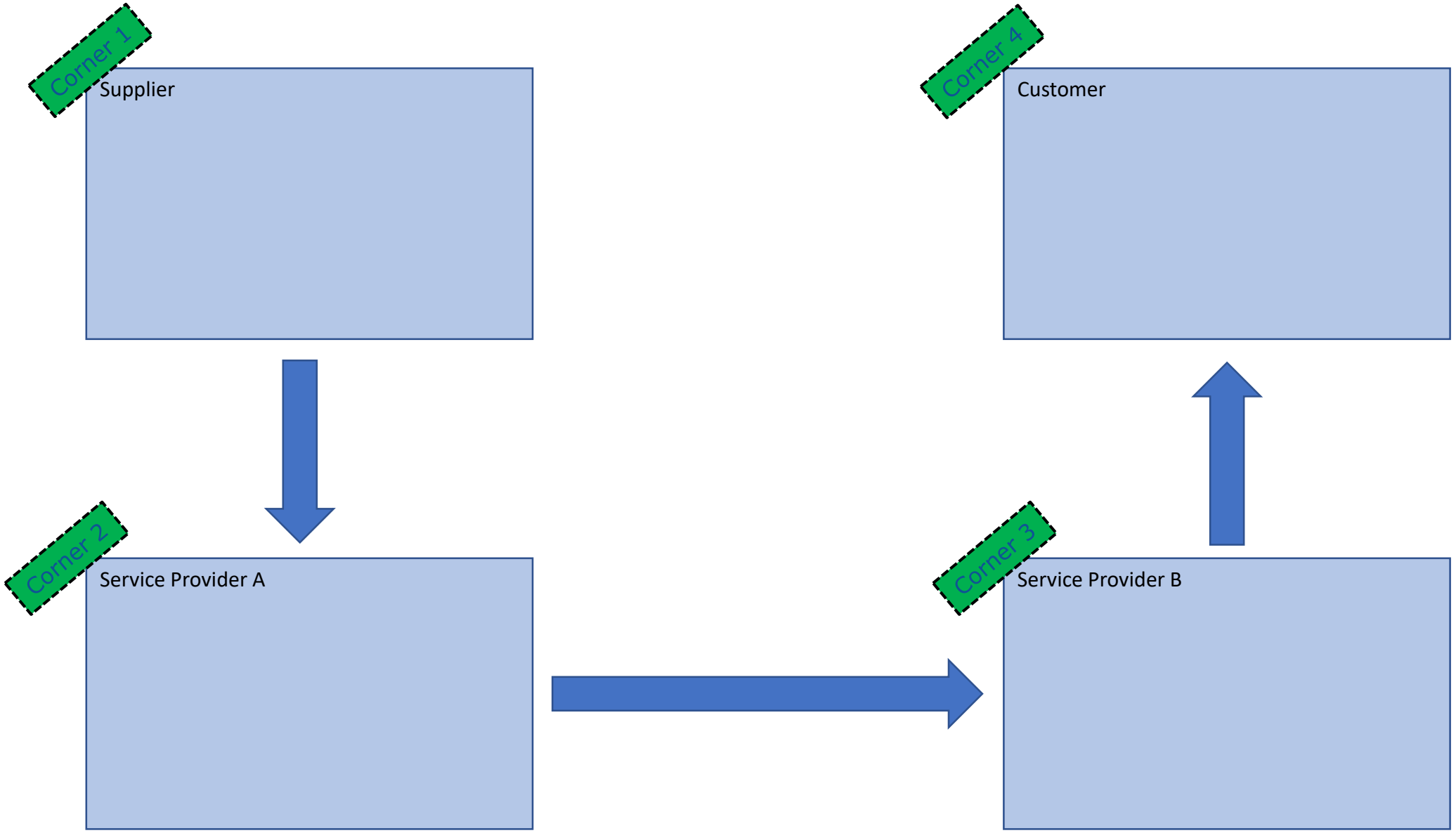
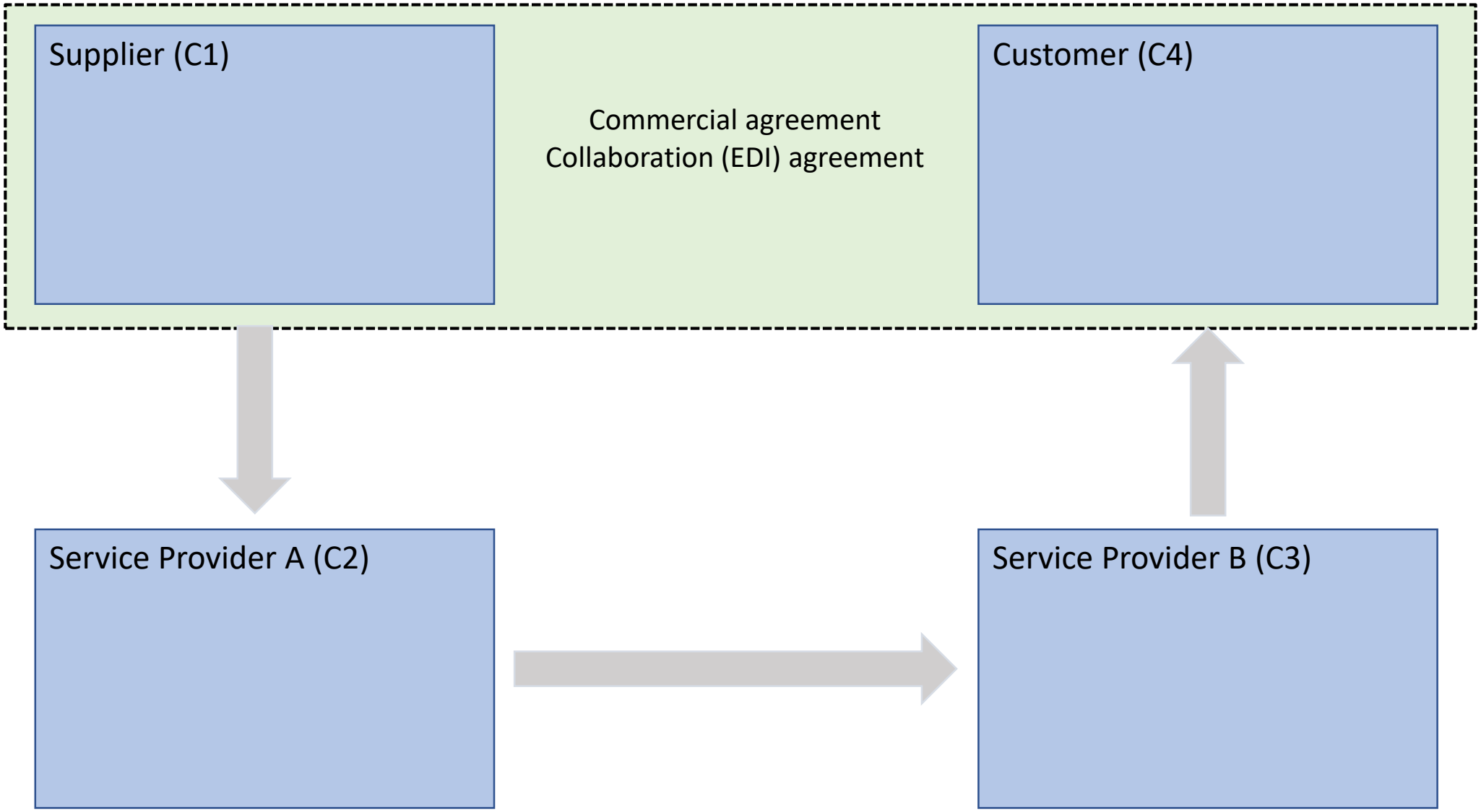
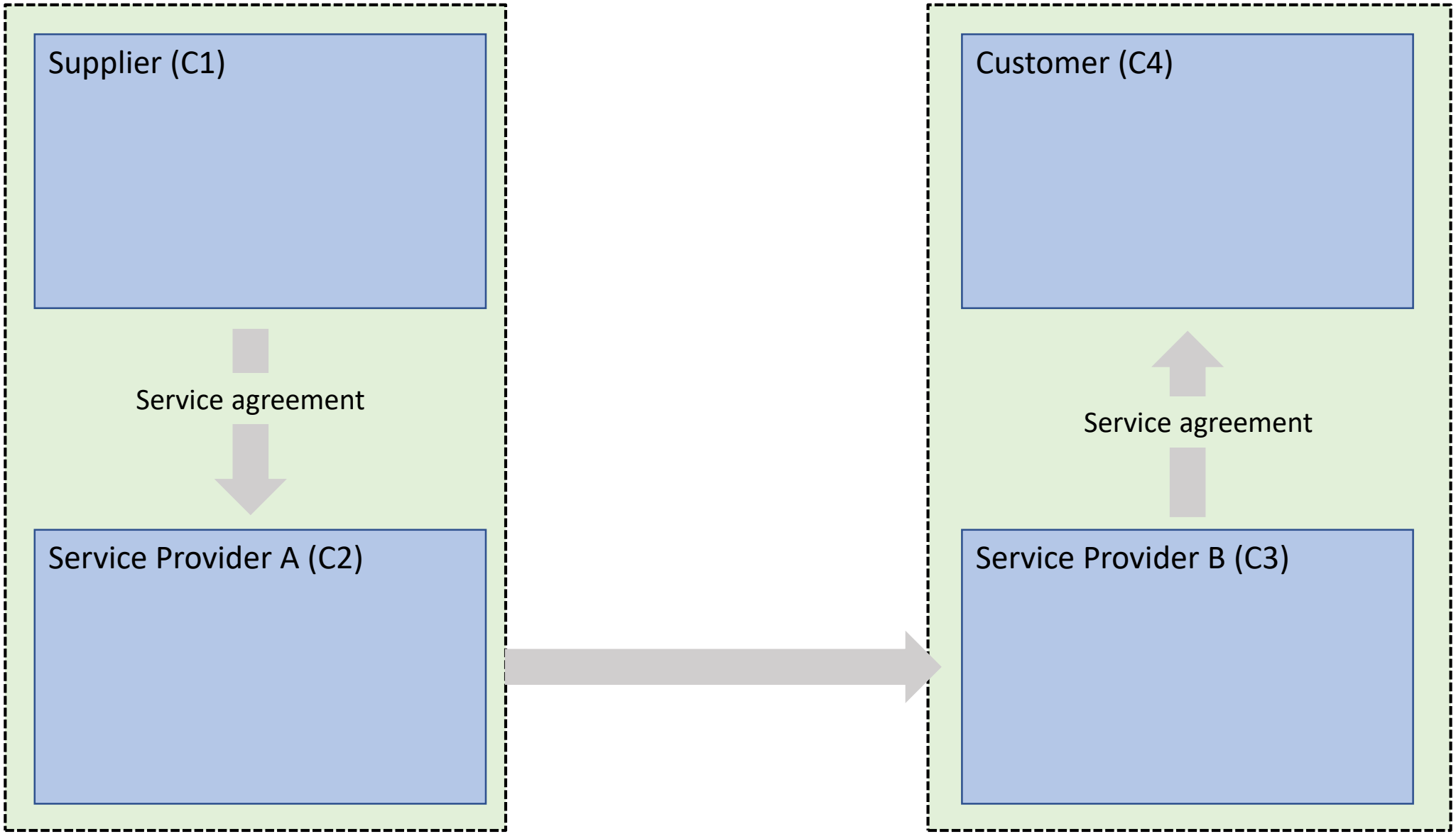
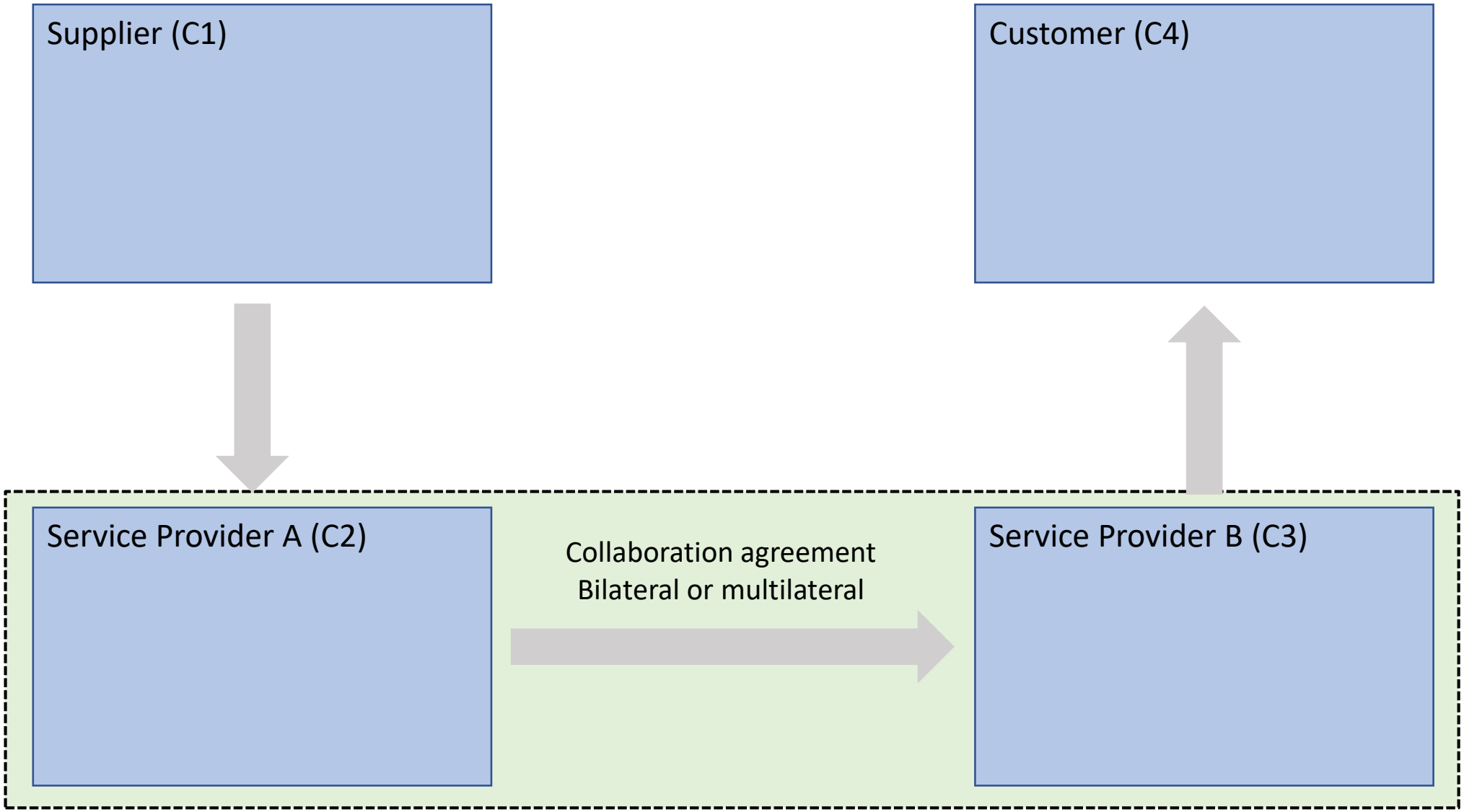

Corner 1
Supplier
Corner 4
Customer
Corner 2
Service Provider A
Corner 3
Service Provider B


Supplier (C1)
Commercial agreement
Collaboration (EDI) agreement
Customer (C4)
Service Provider A (C2)
Service Provider B (C3)


Supplier (C1)
Service agreement
Service Provider A (C2)
Customer (C4)
Service agreement
Service Provider B (C3)

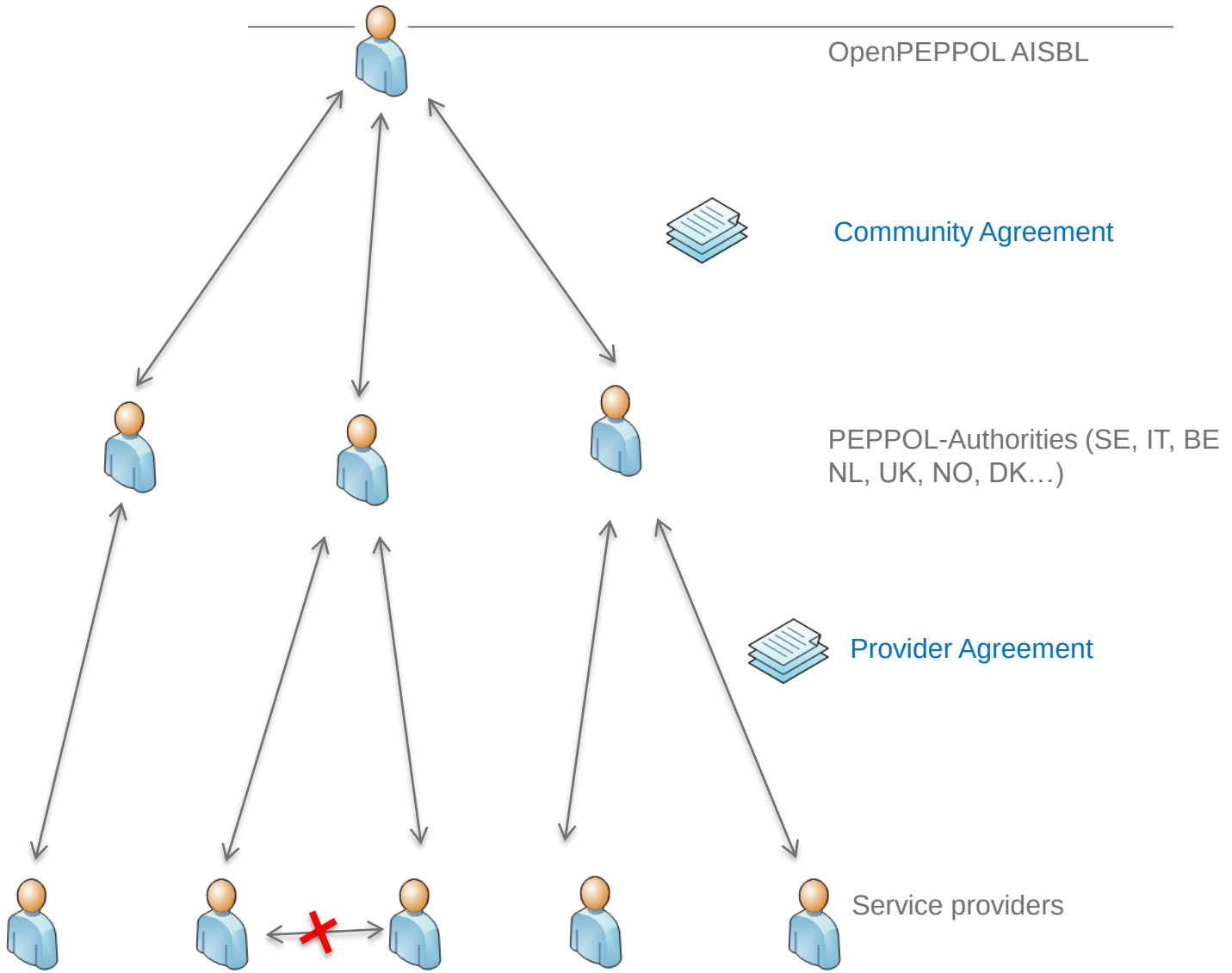

Supplier (C1)
Customer (C4)
Service Provider A (C2)
Collaboration agreement
Bilateral or multilateral
Service Provider B (C3)

Transport Infrastructure Agreements (TIA)

The Access Point Provider and the Service Metadata Publisher Provider must sign a contract with OpenPEPPOL (or any of the PEPPOL Authorities)

Agreements defines responsibilities, expectations, service levels and more

Only providers who have signed the agreements can participate in the network (controlled by digital certificates on a communication level)



PEPPOL – A deployment of CEF eDelivery DSI

AP

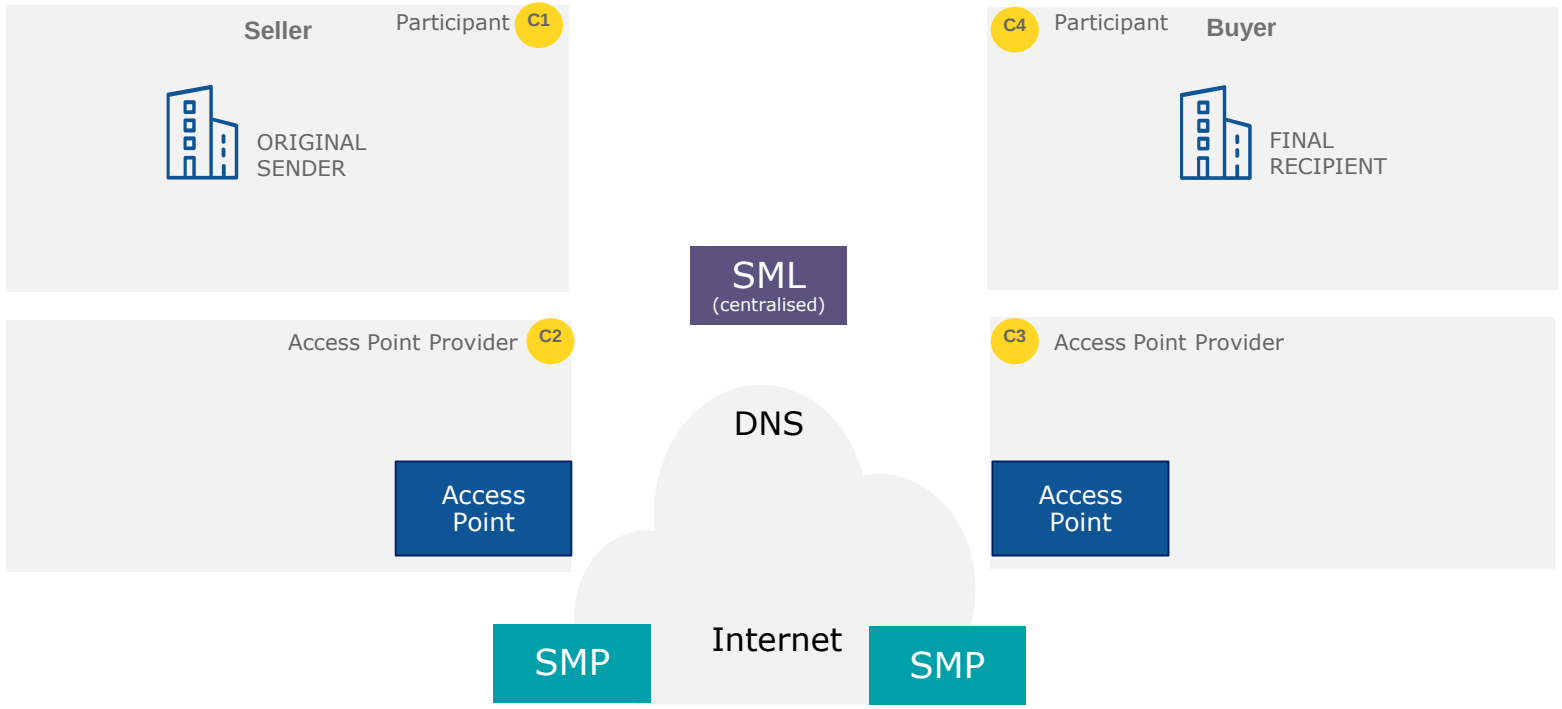
The role of the AP (Access Point) is to send and receive messages in a secure and reliable way, on behalf of the participants. The AP is essentially a simple which is often offered together with other value added services by a service provider.

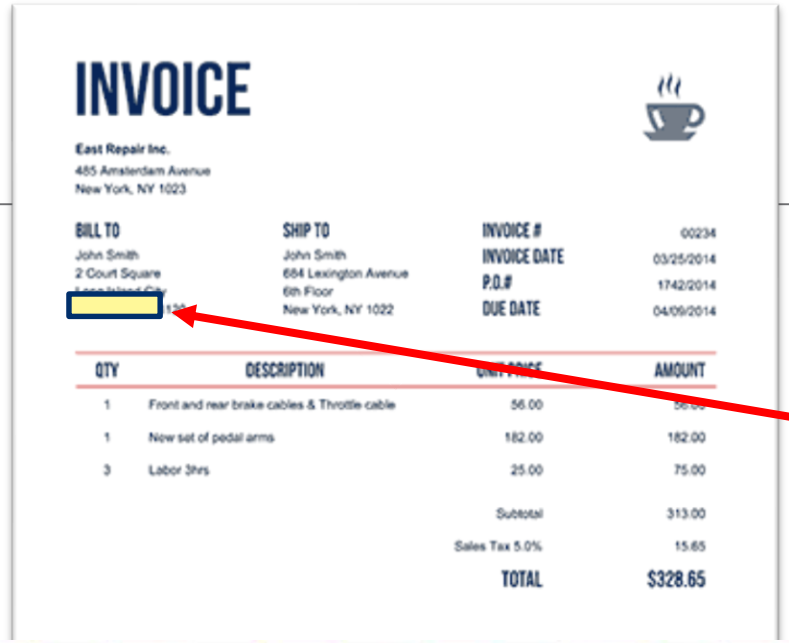
SMP

Once the sender discovers the address of the receiver's SMP, it is able to retrieve the needed information (i.e. metadata) about the receiver. With such information, the message can be sent. The SMP is usually a distributed component in an eDelivery Messaging Infrastructure.

SML

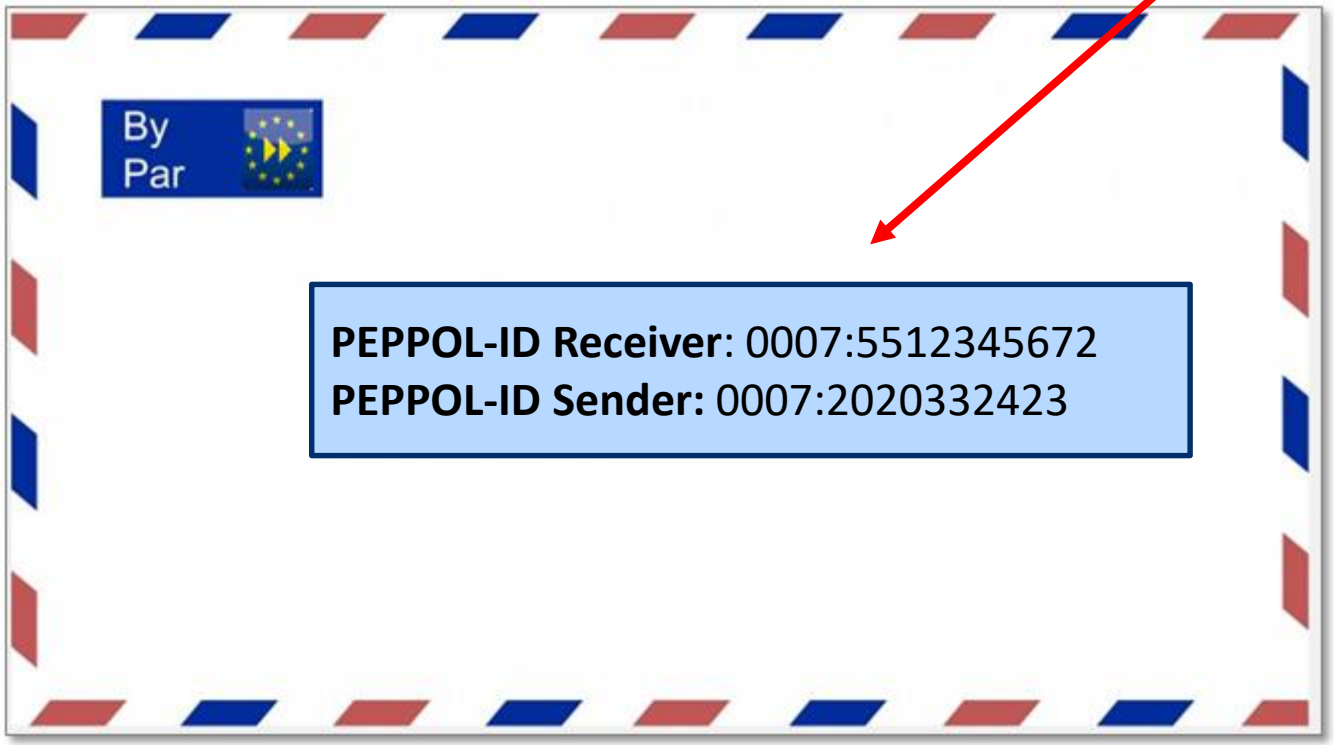
The role of the SML (Service Metadata Locator) is to manage the resource records of the participants and SMPs (Service Metadata Publisher) in the DNS (Domain Name System). The SML is usually a centralised component in an eDelivery Messaging Infrastructure.





Electronic address identifier (EndpointID)

- ”PEPPOL-ID” (GLN, DUNS etc)



0007 : 5512345678

Type code for Swedish organisation number

The actual number

Dynamic discovery in detail

Phase 1: Registration

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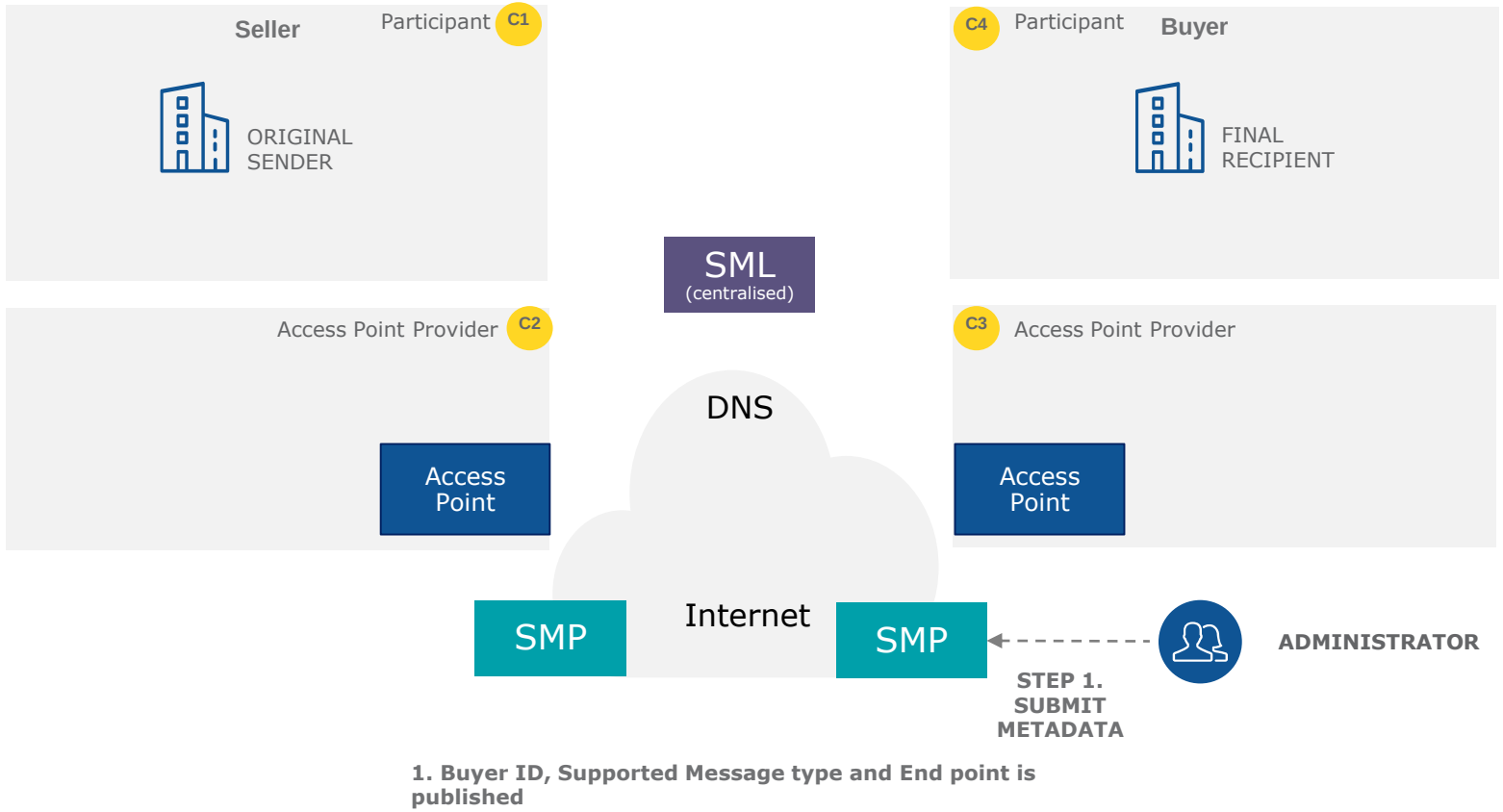

Dynamic discovery in detail

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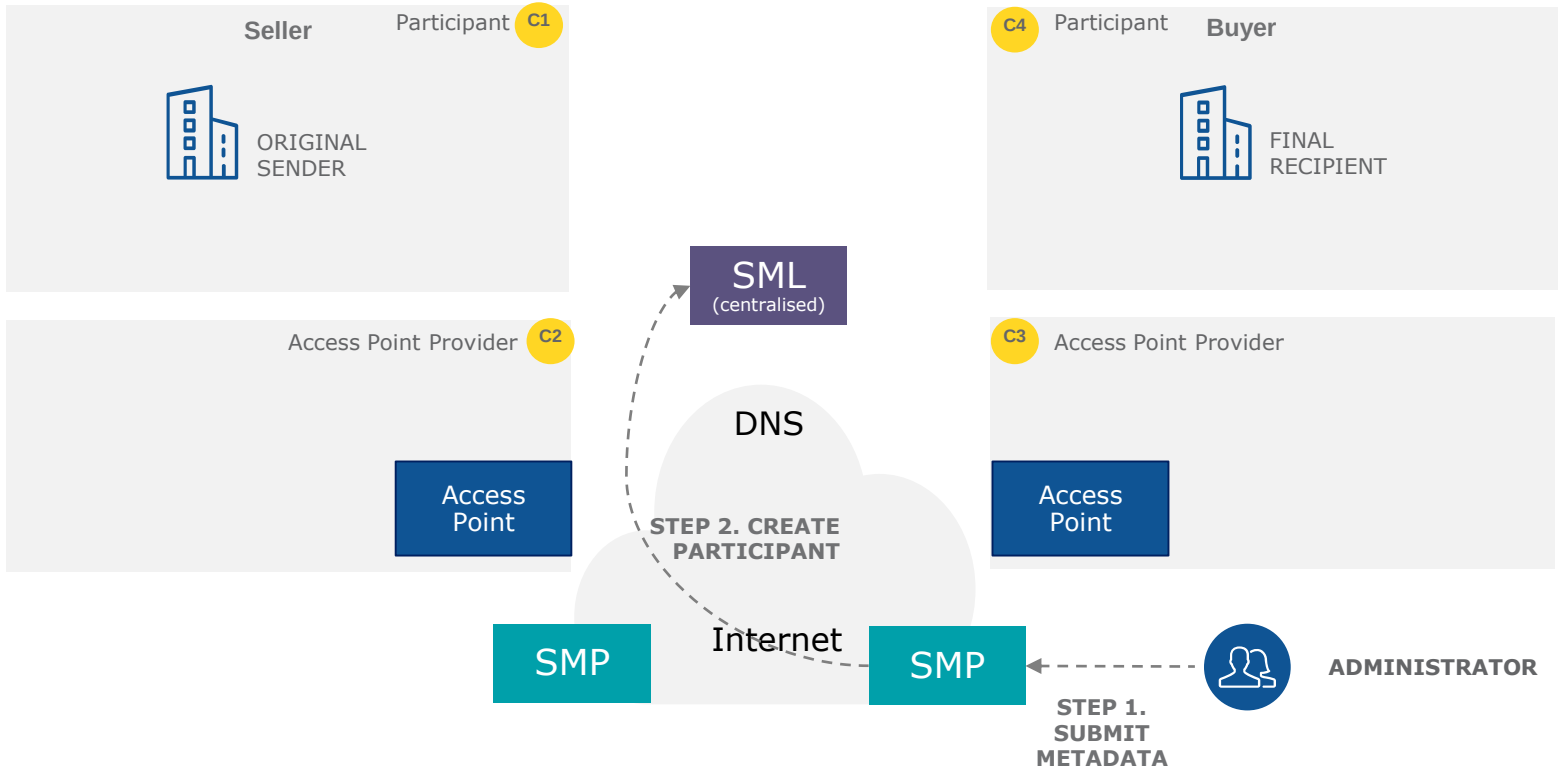

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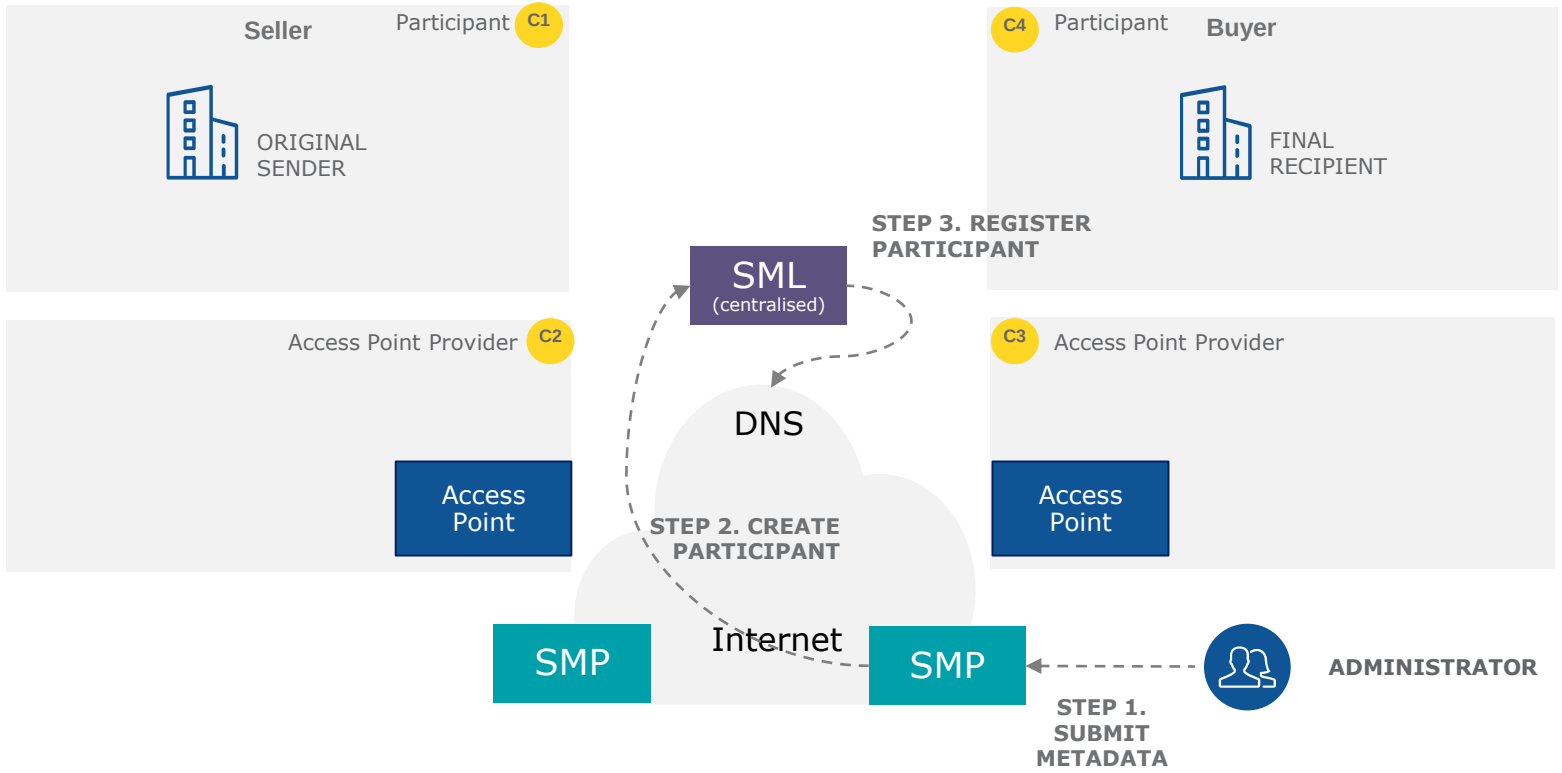

1. Buyer ID, Supported Message type and End point is published
2. The SMP creates a record in the SML which associates the participant with the SMP
3. The SML updates the DNS which creates a DNS record for the participant, pointing to the SMP

Dynamic discovery in detail

Phase 2: Operations

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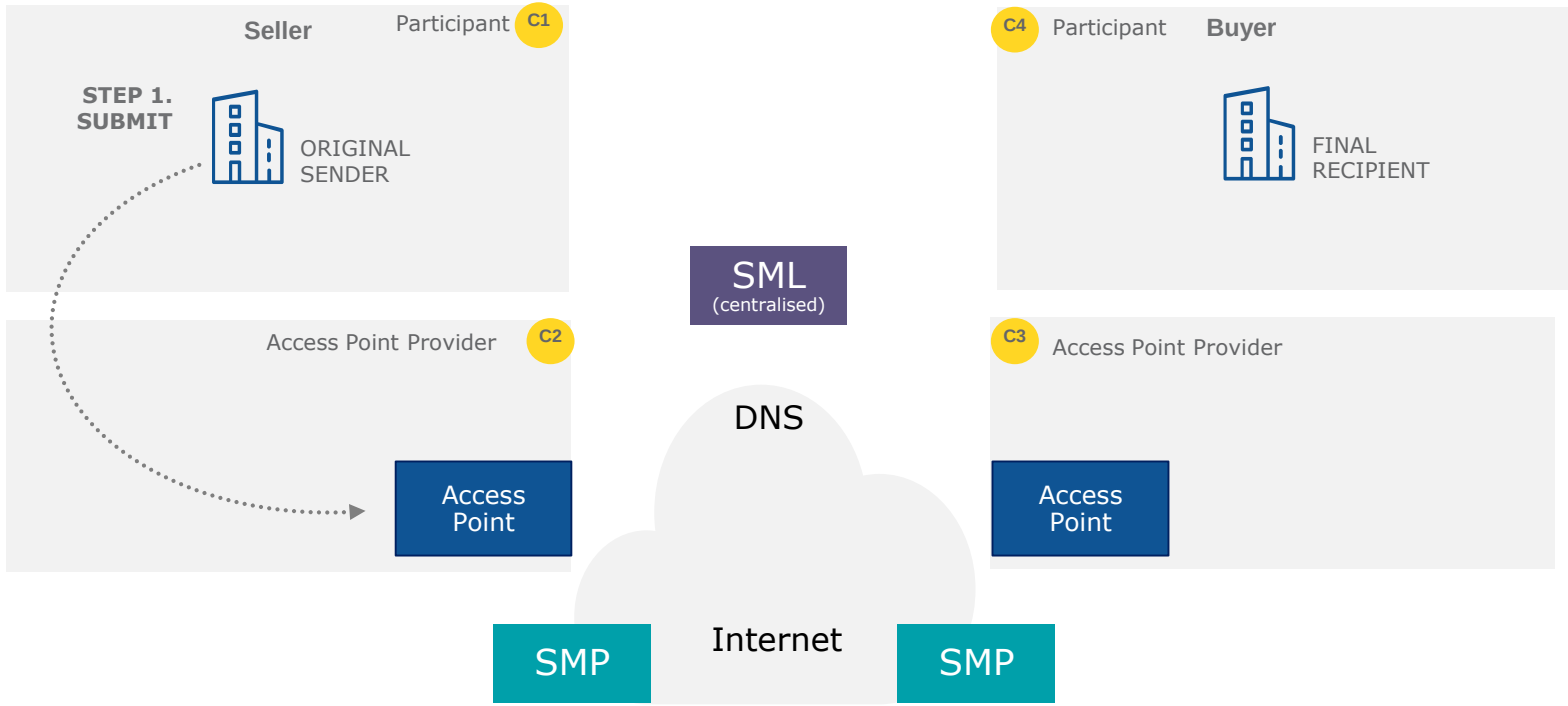

1. Seller issues an eInvoice (or other eDocument) and hands it over to the AP

Dynamic discovery in detail

Phase 2: Operations

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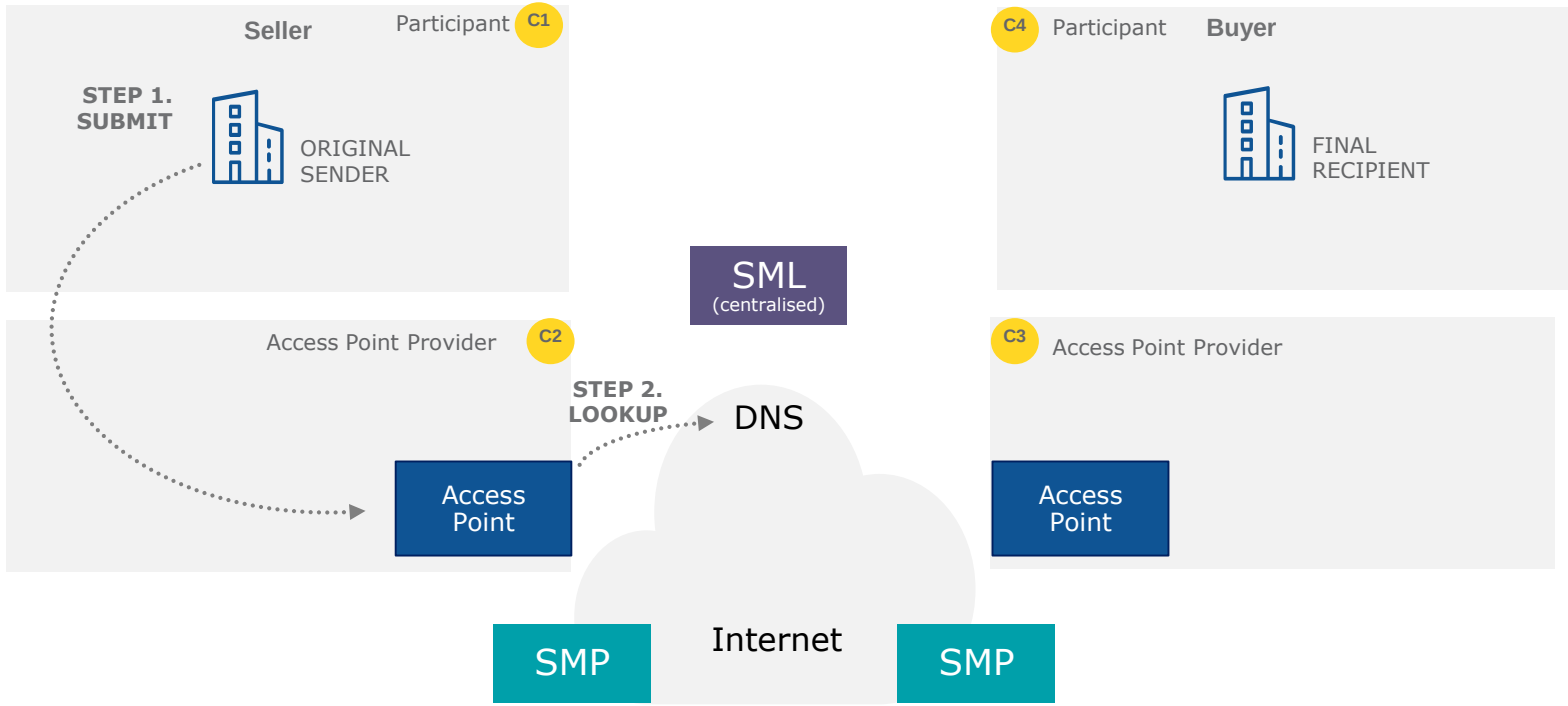

1. Seller issues an eInvoice (or other eDocument) and hands it over to the AP
2. The AP makes a lookup using a HTTP GET. The DNS directs the AP to the participant's SMP

Dynamic discovery in detail

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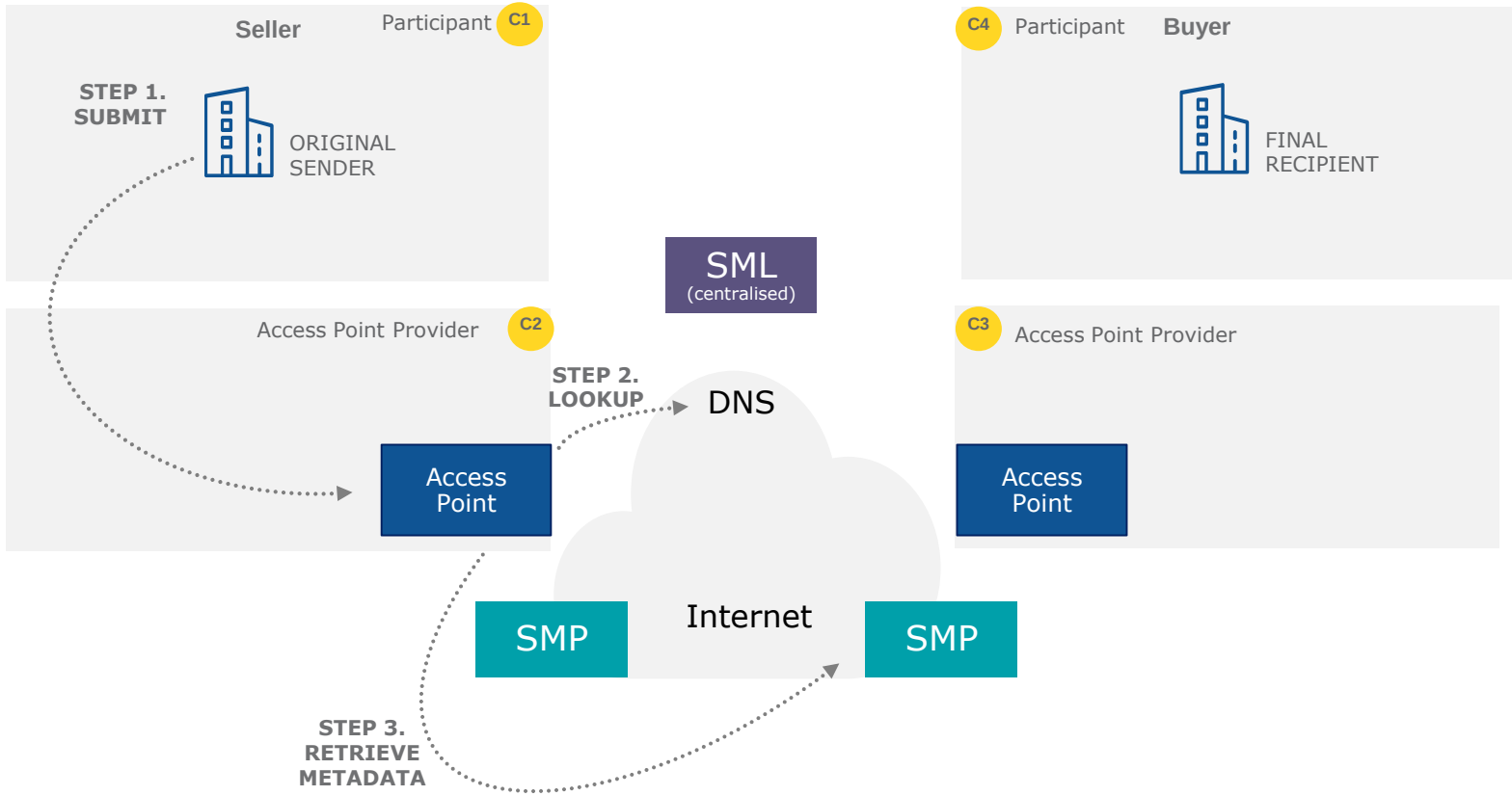

Service Metadata Example

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```
<?xml version="1.0" encoding="UTF-8" standalone="yes"?>
<ns3:SignedServiceMetadata xmlns="http://busdox.org/transport/identifiers/1.0/" xmlns:ns2="http://www.w3.org/2005/08/addressing" xmlns:ns3="
http://busdox.org/serviceMetadata/publishing/1.0/">
    <ns3:ServiceMetadata>
        <ns3:ServiceInformation>
            <ParticipantIdentifier scheme="iso6523-actorid-upis">0088:50512318800008</ParticipantIdentifier>
            <DocumentIdentifier scheme="busdox-docid-qns">
urn:oasis:names:specification:ubl:schema:xsd:Invoice-2::Invoice##urn:www.cenbii.eu:transaction:biitrns010:ver2.0:extended:urn:www.peppol.eu:b
            <ns3:ProcessList>
                <ns3:Process>
                    <ProcessIdentifier scheme="cenbii-procid-ubl">urn:www.cenbii.eu:profile:bii05:ver2.0</ProcessIdentifier>
                    <ns3:ServiceEndpointList>
                        <ns3:Endpoint transportProfile="busdox-transport-as2-ver1p0">
                            <ns2:EndpointReference>
                                <ns2:Address>https://peppol.zzz.com/yyy/adapter/inbound/as2peppol</ns2:Address>
                            </ns2:EndpointReference>
                            <ns3:RequireBusinessLevelSignature>false</ns3:RequireBusinessLevelSignature>
                            <ns3:MinimumAuthenticationLevel>1</ns3:MinimumAuthenticationLevel>
                            <ns3:ServiceActivationDate>2017-03-13Z</ns3:ServiceActivationDate>
                            <ns3:ServiceExpirationDate>2027-03-13Z</ns3:ServiceExpirationDate>
                            <ns3:Certificate>MIIENjCCAx6gAwIBAgIQAovA/eZyvKgJmu+nvl1PdDANBgkqhkiG9w0BAQsFADBX
```

- The Participant's identifier
- Type of supported business message
- Type of business process
- Type of transport protocol to use for this message
- Technical endpoint/address to where the message should be sent

Dynamic discovery in detail

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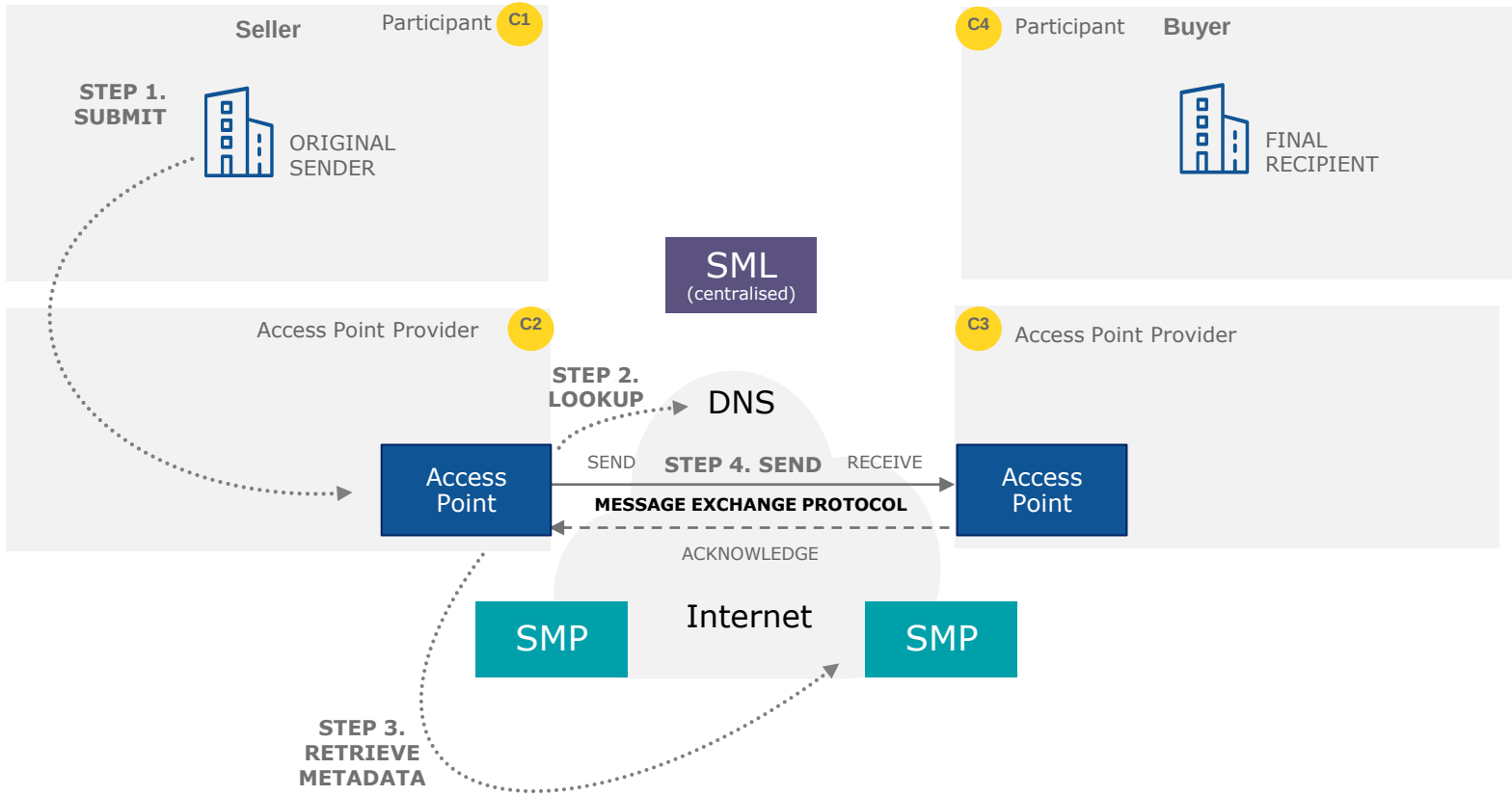

Dynamic discovery in detail

Phase 2:
Operations

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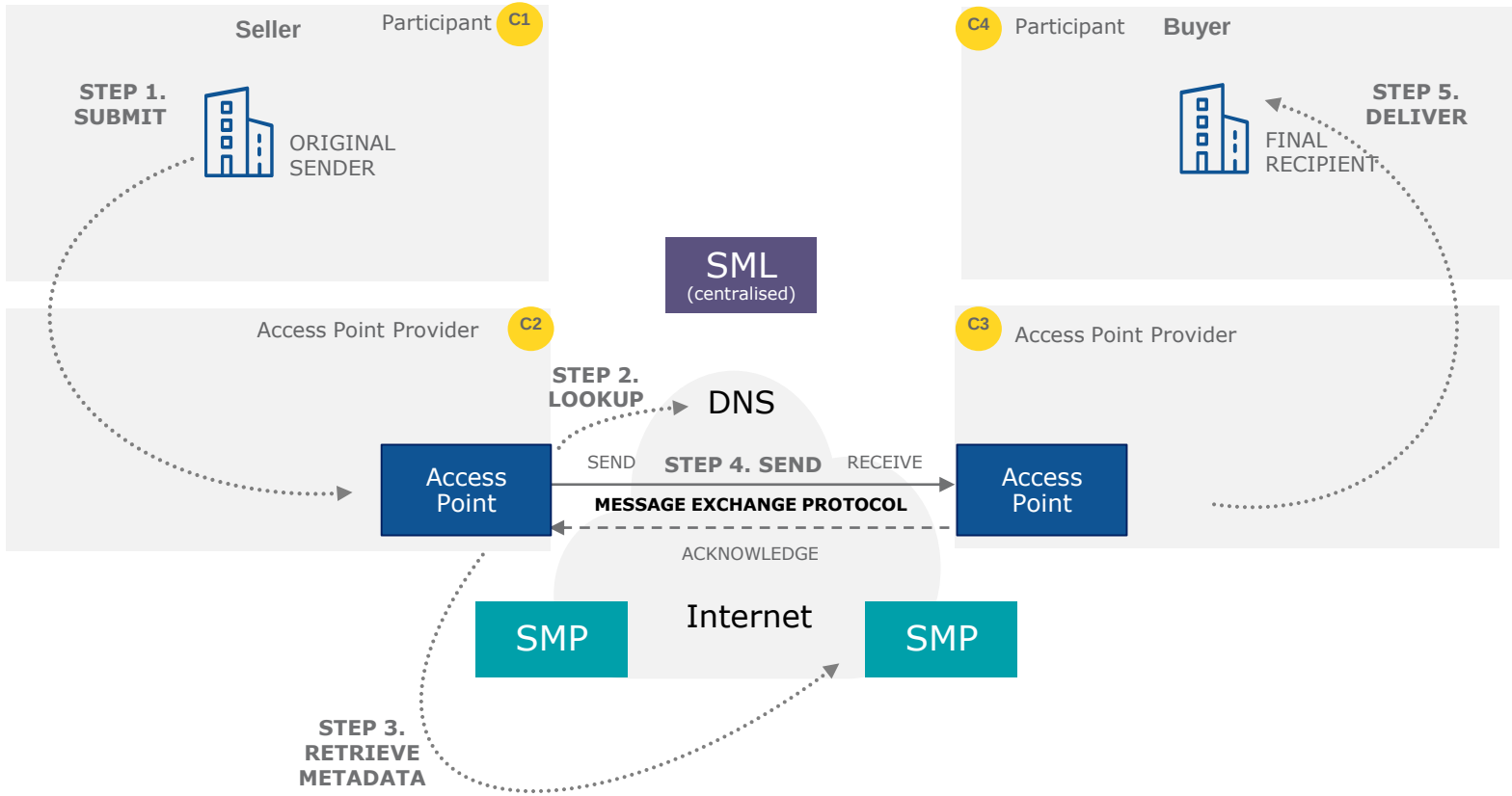


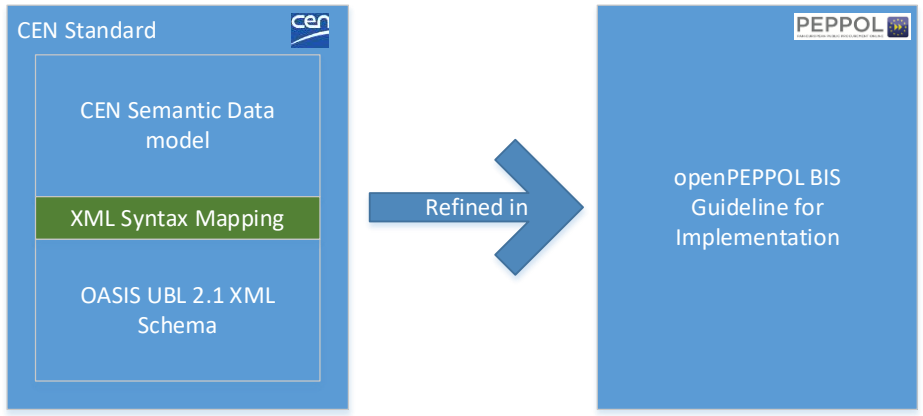
1. Seller issues an eInvoice (or other eDocument) and hands it over to the AP
2. The AP makes a lookup using a HTTP GET. The DNS directs the AP to the participant's SMP
3. The HTTP GET results in the service metadata for the end point (AP)
4. The AP sends the eInvoice to the receiver's AP
5. The receiver's AP hands the eInvoice over to the Buyer

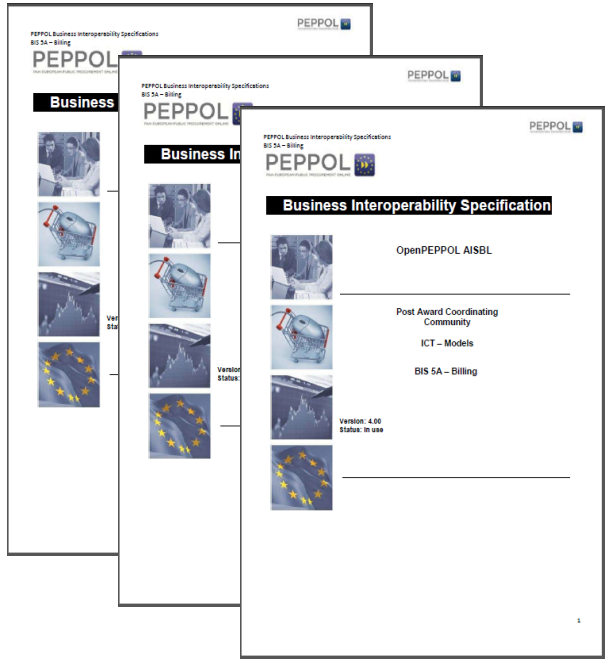
The business document specifications

What can be transmitted in the network?

PEPPOL BIS conformant messages

- Implementation guides of CEN standards
- Adds policy for identifiers and further restrictions





- Also other messages can be exchanged, but BIS is a minimum requirement to be registered in the SML (Baseline interoperability)

eProcurement

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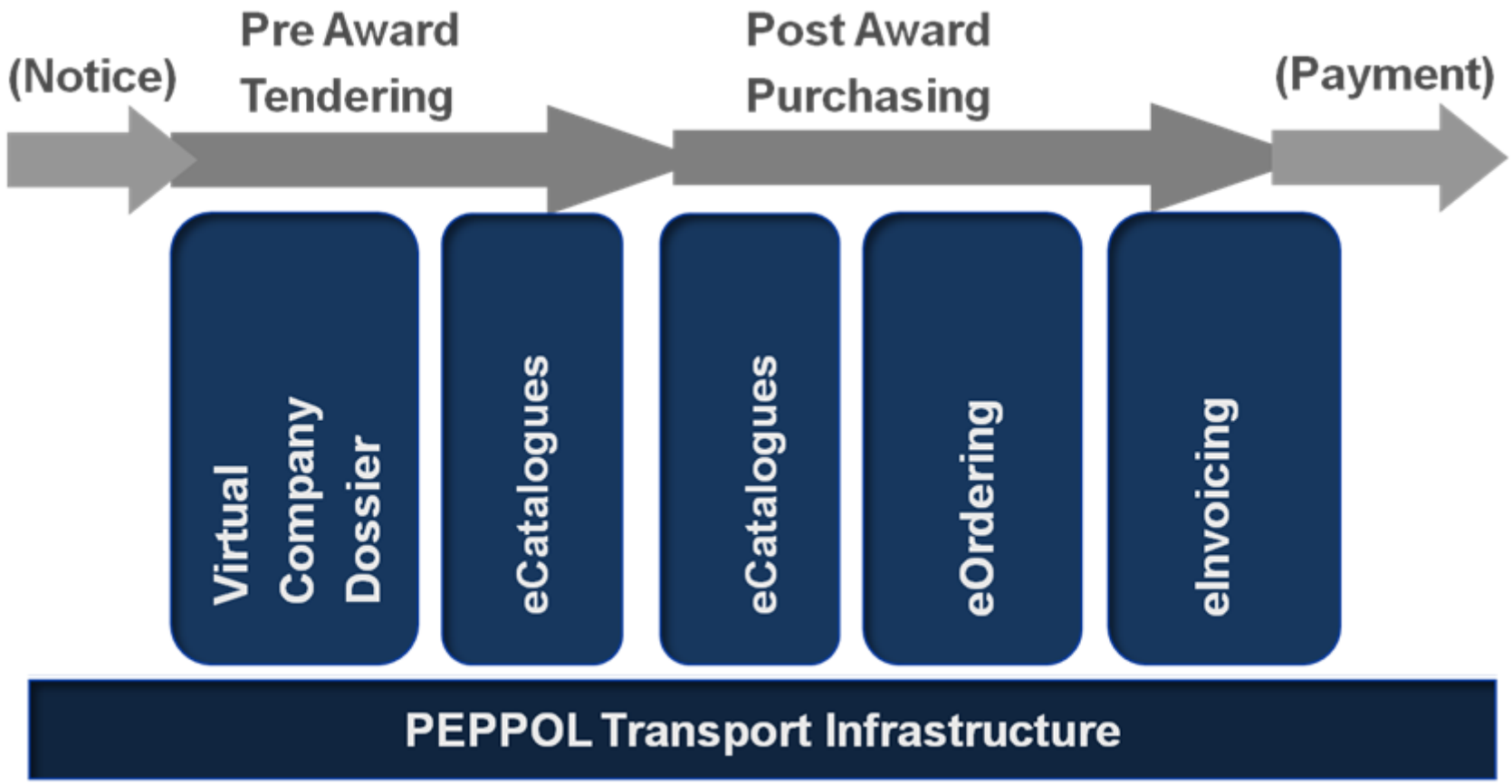

Current BIS

Price and product information

- Catalogue

Ordering / Request for delivery

- Ordering
- Punch Out
- Order Agreement

Shipping

- Despatch Advice

Request for payment

- Billing
- Invoice Message Response

Other

- Message Level Response

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European standard on eInvoicing

Martin Forsberg

Background

Problems with **many standards**

Lack of normative contextualised standards (only workshop agreements)

Different approaches and ambitions in Member States to implementing eInvoicing and eProcurement

The Directive on electronic invoicing in public procurement (Directive 2014/55/EU) was developed, setting a **minimum requirement** for the public sector

The Directive can in the transposition add further requirements

> **From the Directive**
>
> *The benefits of electronic invoicing are maximised when the generation, sending, transmission, reception and processing of an invoice can be fully automated.*
>
> *…*
>
> *A mere image file should not be considered to be an electronic invoice for the purpose of this Directive.*

Requirements for the contracting authorities/entities

From article 7

Receipt and processing of electronic invoices

*Member States shall ensure that contracting authorities and contracting entities **receive and process electronic invoices** which comply with the **European standard on electronic invoicing** whose reference has been published pursuant to Article 3(2) and with **any of the syntaxes on the list** published pursuant to Article 3(2).*

a list with a limited number of syntaxes which comply with the European standard on electronic invoicing

Semantic data model of the core elements of an electronic invoice

Definitions

(1) **‘electronic invoice**’ means an invoice that has been issued, transmitted and received in a structured electronic format which allows for its automatic and electronic processing;

(2) ‘**core elements of an electronic invoice**’ means a set of essential information components which an electronic invoice must contain in order to enable cross-border interoperability, including the necessary information to ensure legal compliance;

(3) ‘**semantic data model**’ means a structured and logically interrelated set of terms and their meanings that specify the core elements of an electronic invoice;

(4) ‘**syntax**’ means the machine readable language or dialect used to represent the data elements contained in an electronic invoice;

(5) ‘**syntax bindings**’ means guidelines on how a semantic data model for an electronic invoice could be represented in the various syntaxes;

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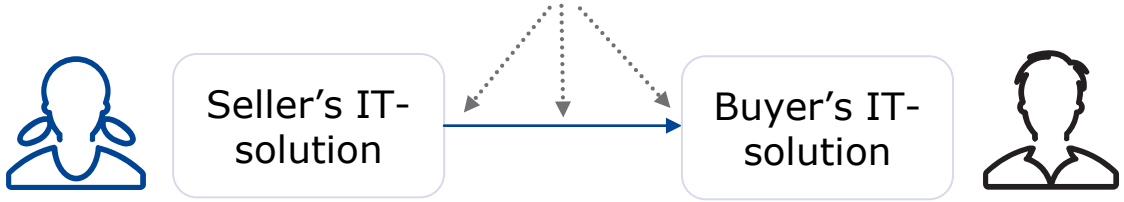
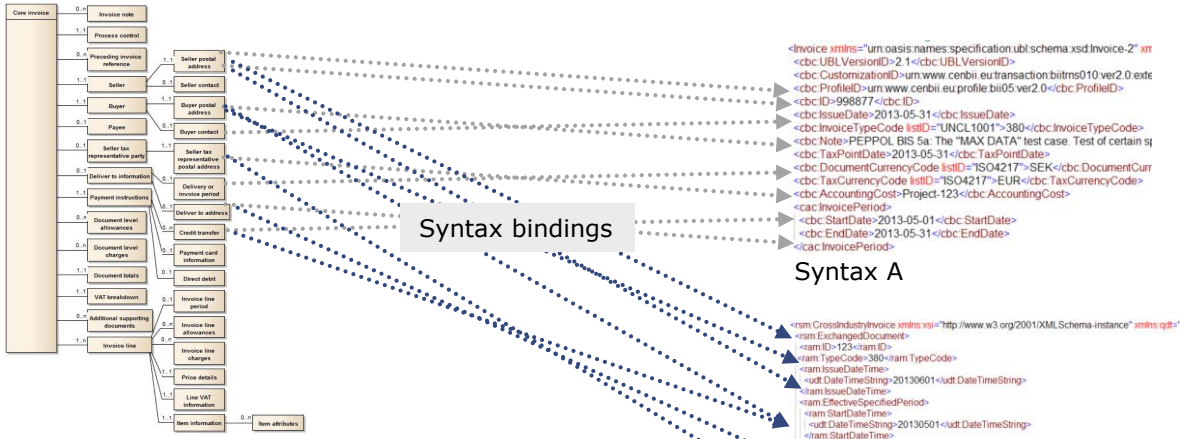
PAN-EUROPEAN PUBLIC PROCUREMENT ONLINE

Issued, **transmitted** and **received** in a **structured electronic format**





Semantic data model of the **core elements** (Business terms and rules)

Key dates

16 April 2014
Directive 2014/55/EU

17 October 2017
Publication of the reference to the European Standard on eInvoicing in the Official Journa

18 April 2019

Deadline for Member States to transpose into national law

18 April 2020
Extended deadline (upon request) for contracting authorities and entities which are not central government authorities

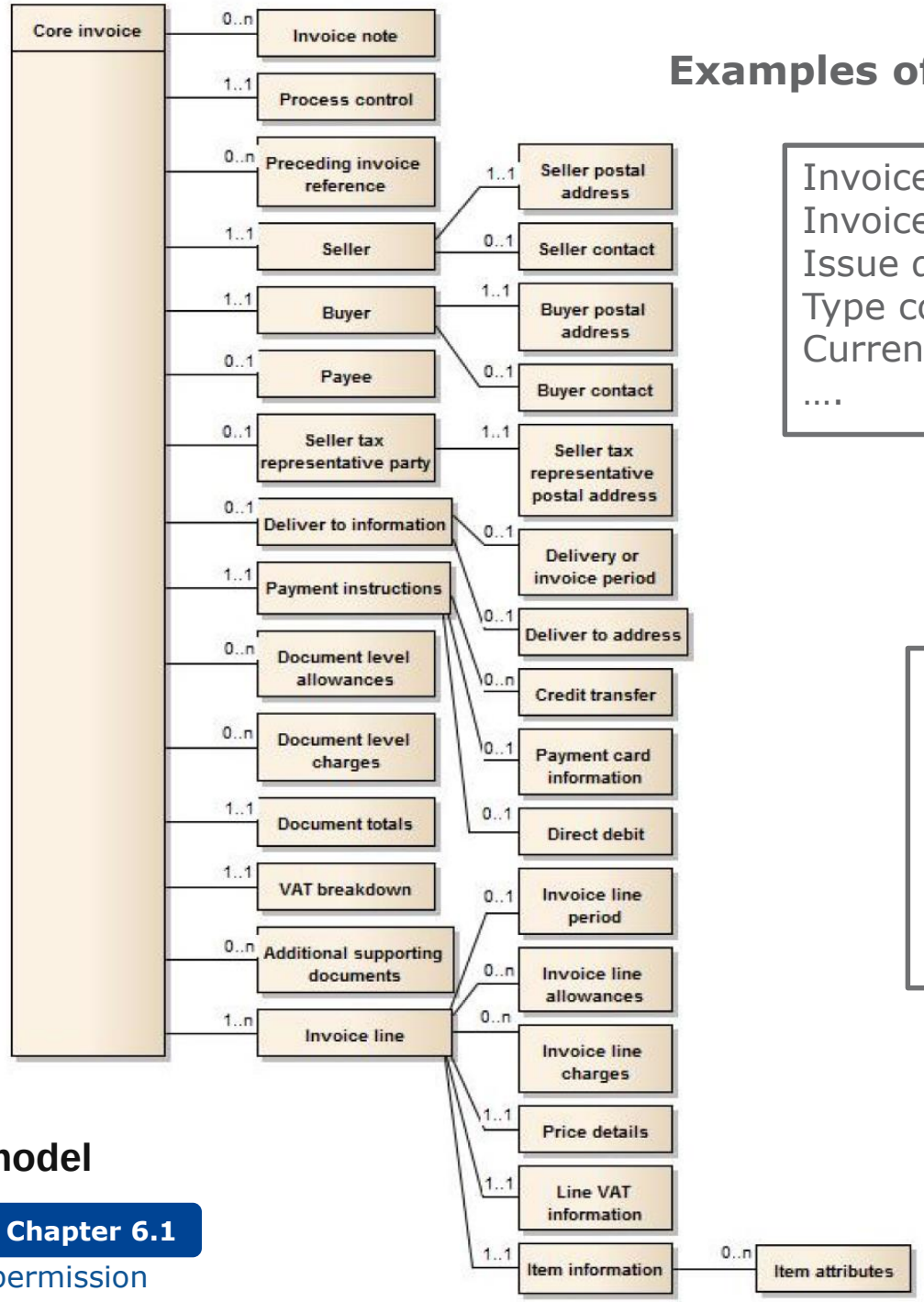
So eInvoicing, in the context of the Directive, is

- Formatted in a structured way so that it can be processed efficiently
- Issued, transmitted and received electronically

This rules out:

- Paper invoices which are scanned by the receiver but managed in an electronic workflow system
- PDF-invoices created by the issuer and sent to the receiver

Examples of key components



Invoice (header)
Invoice number (1..1)
Issue date (1.1)
Type code (1.
Currency code
....

Seller information
Name (1..1)
Trading name (0..1)
Identifier (0..n)
Legal registration identifier (0..1)
VAT numb
Additiona
...

Payment instructions
Payment means type code (1..1)
Payment means text (0..1)
0..1)

VAT Breakdown
Category taxable amount (1..1)
Category tax amount (1..1)
Category code (
Category rate (
Exemption text
Exemption code

Item information
Name (1..1)
Description (0..1)
Sellers identifier (0..1)
Buyers identifier (0..1)
Standard identifier (0..1)
Item classification (0..n)
Country of origin (0..1)

The semantic model

EN 16931-1:2017 Chapter 6.1

Examples of business terms

ID	Level	Cardinality	Business Term	Description	Usage Note	Req. ID	Semantic data type [2]
BT-1	+	1..1	Invoice number	A unique identification of the Invoice.	The sequential number required in Article 226(2) of the directive 2006/112/EC [2], to uniquely identify the Invoice within the business context, time-frame, operating systems and records of the Seller. It may be based on one or more series of numbers, which may include alphanumeric characters. No identification scheme is to be used.	R56	Identifier
BT-2	+	1..1	Invoice issue date	The date when the Invoice was issued.		R56	Date
BT-3	+	1..1	Invoice type code	A code specifying the functional type of the Invoice.	Commercial invoices and credit notes are defined according the entries in UNTDID 1001 [6]. Other entries of UNTDID 1001 [6] with specific invoices or credit notes may be used if applicable.	R44	Code

ID – Unique id for each business term

Level – indicates depth in model (+, ++, +++, ++++)

Cardinality – Indicates optionality, repetitions allowed

Business term – name of the business term

Description – short description/definition

Usage note – guiding/explanatory information

Req id – reference to underlying requirement

Data type – the type of data used

EN 16931-1:2017 Chapter 6.3

Business rules

Conditions – dependencies between terms

Integrity constraints (In many cases, the data model cardinality indicates the same thing)

ID	Description	Target / context	Business term / group
BR-CO-8	Invoice line charge reason code and Invoice line charge reason shall indicate the same type of charge reason.	Invoice line Charges	BT-144, BT-145
BR-CO-9	The Seller VAT identifier, Seller tax representative VAT identifier, Buyer VAT identifier shall have a prefix in accordance with ISO code ISO 3166-1 alpha-2 by which the country of issue may be identified. Nevertheless, Greece may use the prefix 'EL'.	VAT identifiers	BT-31, BT-48, BT-63
BR-CO-10	Sum of Invoice line net amount = ∑ Invoice line net amount.	Document totals	BT-106

ID – Unique id for each business rule

Description – textual description of the rule

Target/Context – the cgroup/class for where the rule applies

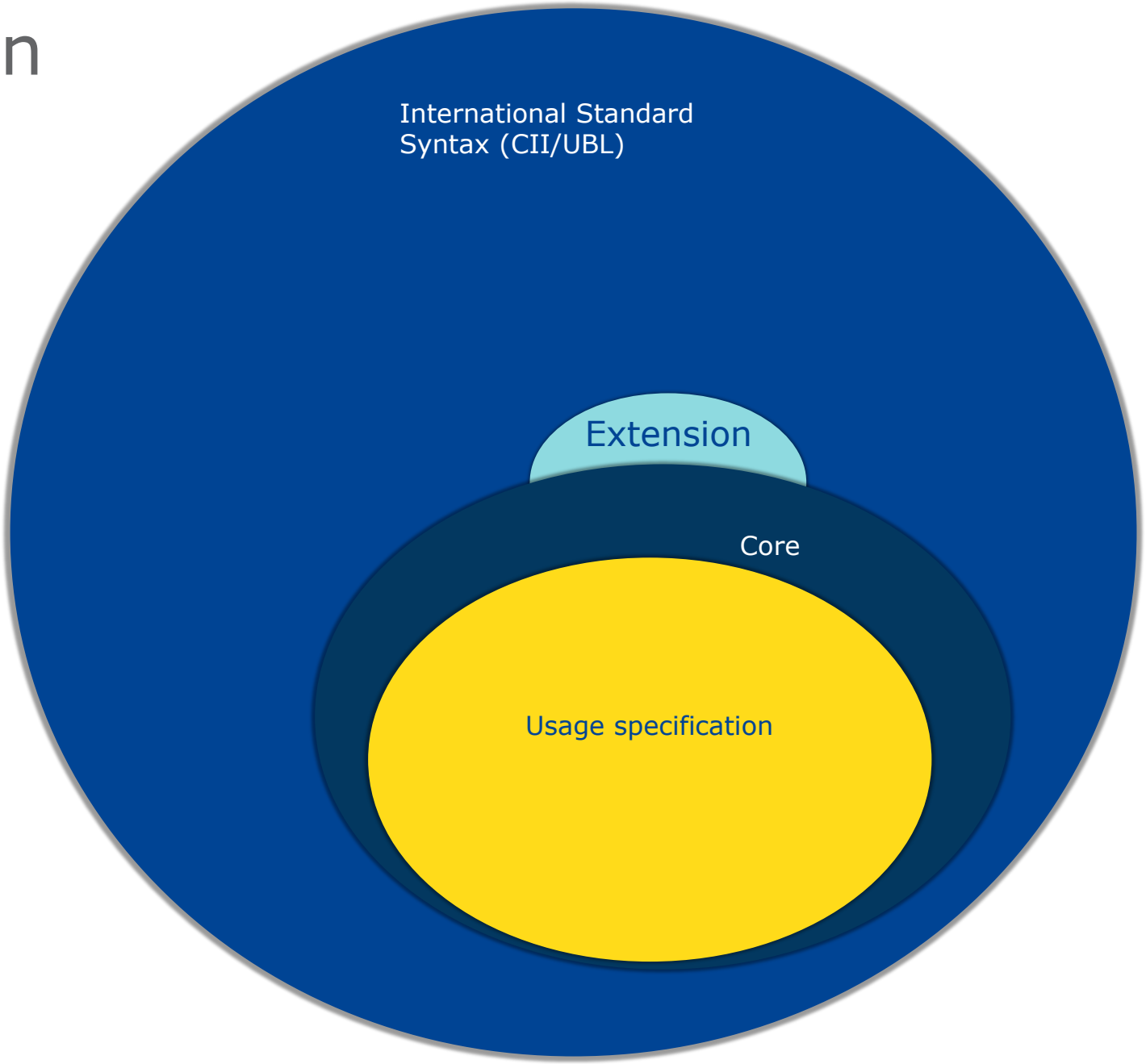
Business term/group – reference to the term for which the rule applies

EN 16931-1:2017 Chapter 6.4.2

Core – something in common

IMPORTANT

An invoice which follows a CIUS MUST ALWAYS also be compliant towards the (non-restricted) norm.



National rules in PEPPOL CIUS triggered by the supplier country

To avoid creation of national CIUS'es:

affected based on the country of the seller.

Don't affect invoices issued in other countries.

PEPPOL Authority responsible

Appendix C: National rules

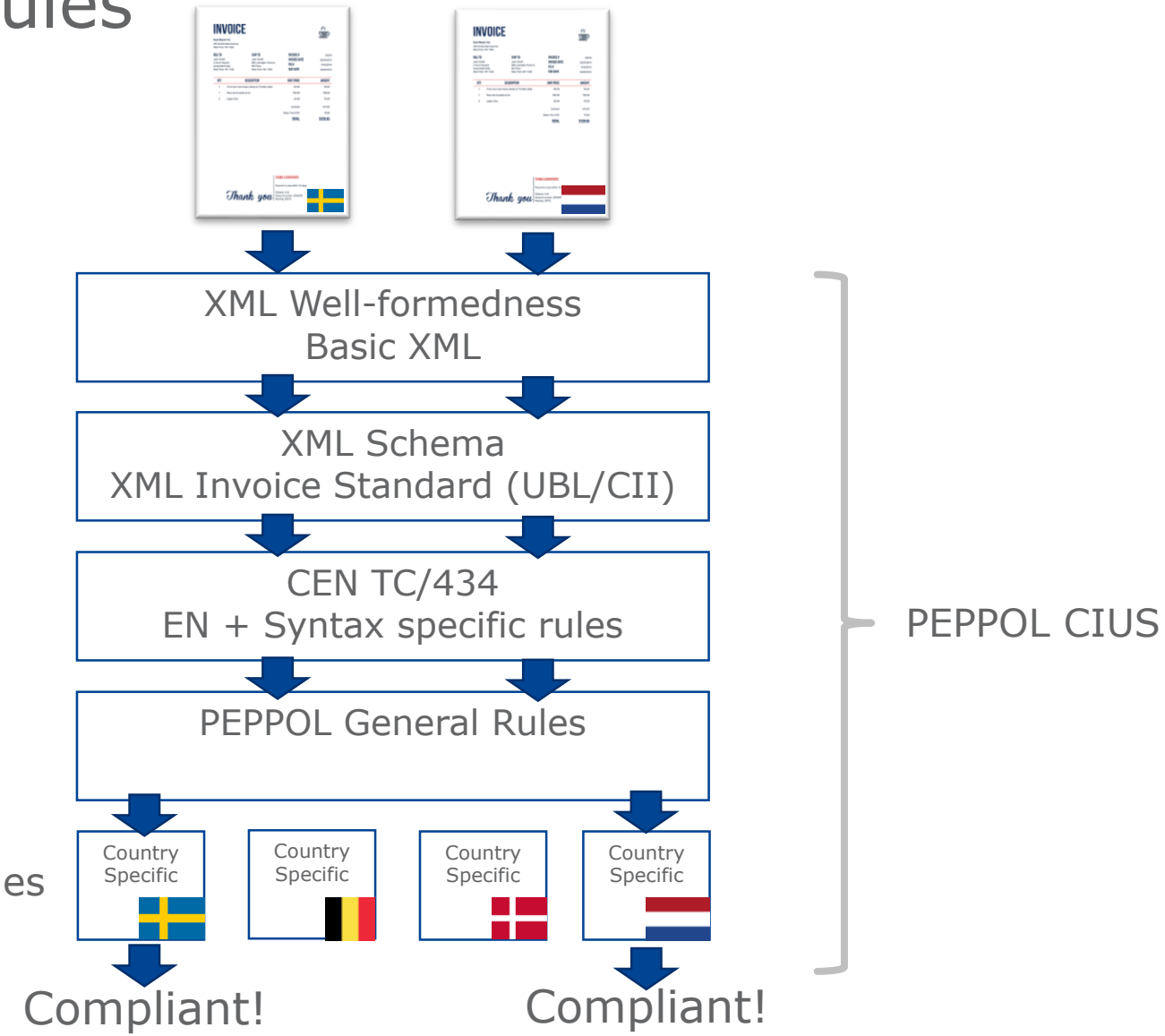
The following rules have been defined by PEPPOL Authorities in addition to the rules for PEPPOL BIS in general. These rules are affected based on the country of the seller, and will not affect invoices issued in other countries. They apply in **all** profiles that use this transaction specification.

National rules are provided by each country's PEPPOL Authority, and if you need any changes or additions to these rules, please contact your PEPPOL Authority.

Table 18. National transaction business rules

Rule	Message/Context/Test
DK-R-001 **(warning)**	**For Danish suppliers when the Accounting code is known, it should be referred on the Invoice.**
	ubl-creditnote:CreditNote | ubl-invoice:Invoice
	not(cac:AccountingSupplierParty/cac:Party/cac:PostalAddress/cac:Country/cbc:IdentificationCode = 'DK' and (normalize-space(cbc:AccountingCost/text()) = ''))
DK-R-002 **(fatal)**	**Danish suppliers MUST provide legal entity (CVR-number).**
	ubl-creditnote:CreditNote | ubl-invoice:Invoice
	not(cac:AccountingSupplierParty/cac:Party/cac:PostalAddress/cac:Country/cbc:IdentificationCode = 'DK' and (normalize-space(./cac:AccountingSupplierParty/cac:Party/cac:PartyLegalEntity/cbc:CompanyID/text()) = ''))

Layers of validation rules in PEPPOL



MINOR RELEASE - Fall and spring release cycle

	Maintenance cycle for existing mandatory specifcations				Spring release cycle			Fall release cycle		
	Description	**Assigned to**	**Weeks**	**Days**	**Start date**	**Weekday**	**End date**	**Start date**	**Weekday**	**End date**
Initiate	Release initiated	Poacc mgr	0	0	27- nov 17			28- maj 18		
	Release planning and startup	OO/RM	1	7	27- nov 17	mån	04- dec 17	28- maj 18	mån	04- jun 18
	Collecting rfc and CMB processing	OO/RM	10	70	04- dec 17	mån	12- feb 18	04- jun 18	mån	13- aug 18
	Anounce cut off date	OO/RM	0	0			05- feb 18			06- aug 18
	Cut off for rfc	OO/RM	0	0			12- feb 18			**13- aug 18**
Develop	CMB processing of rfc	CMB	2	14	12- feb 18	mån	26- feb 18	13- aug 18	mån	27- aug 18
	Development of changes	Dev team	2	14	26- feb 18	mån	12- mar 18	27- aug 18	mån	10- sep 18
	Anounce review period	OO/RM	0	0			12- mar 18			10- sep 18
	Testing	Test team	2	14	12- mar 18	mån	26- mar 18	10- sep 18	mån	24- sep 18
Revision	Initiate review	OO/RM	0	0			26- mar 18			**24- sep 18**
	Review	OO/RM	2	14	26- mar 18	mån	09- apr 18	24- sep 18	mån	08- okt 18
	Comment approval	CMB	1	7	09- apr 18	mån	16- apr 18	08- okt 18	mån	15- okt 18
	Development of approved comments	Dev team	1	7	16- apr 18	mån	23- apr 18	15- okt 18	mån	22- okt 18
	Release testing	Test team	1	7	23- apr 18	mån	30- apr 18	22- okt 18	mån	29- okt 18
Publish	Approval of release	CMB	1	7	30- apr 18	mån	07- maj 18	29- okt 18	mån	05- nov 18
	Publication	RM	0	0			07- maj 18			05- nov 18
	Adoption	Members	1	7	07- maj 18	mån	14- maj 18	05- nov 18	mån	12- nov 18
	Mandatory use / closing cycle	RM	0	0			**14- maj 18**			**12- nov 18**

Summary - Important concepts

PEPPOL
PAN-EUROPEAN PUBLIC PROCUREMENT ONLINE

eDelivery

OpenPEPPOL

eDocument specifications

Access Point

PEPPOL BIS

AS2

AS4

Service Providers

European Core Invoice Standard

CIUS!!

Dynamic Discovery

TIA (Transport Infrastructure Agreement)

Schematron

SMP (Service Metadata Publisher)

SML (Service Metadata Locator)

Questions and discussion