

# Peppol als Role Model für die Übermittlung von elektronischen Rechnungen

Dr. Philipp Liegl





## Speaker



### Philipp Liegl

- UN/CEFACT and e-invoicing standardisation contributor
- Over 15 years of technical project experience in FMCG, retail, manufacturing, industry and automotive
- Coordinated international e-invoicing and EDI projects as technical project leader
- Still loves to tinker around with integration challenges



# Agenda

About networks

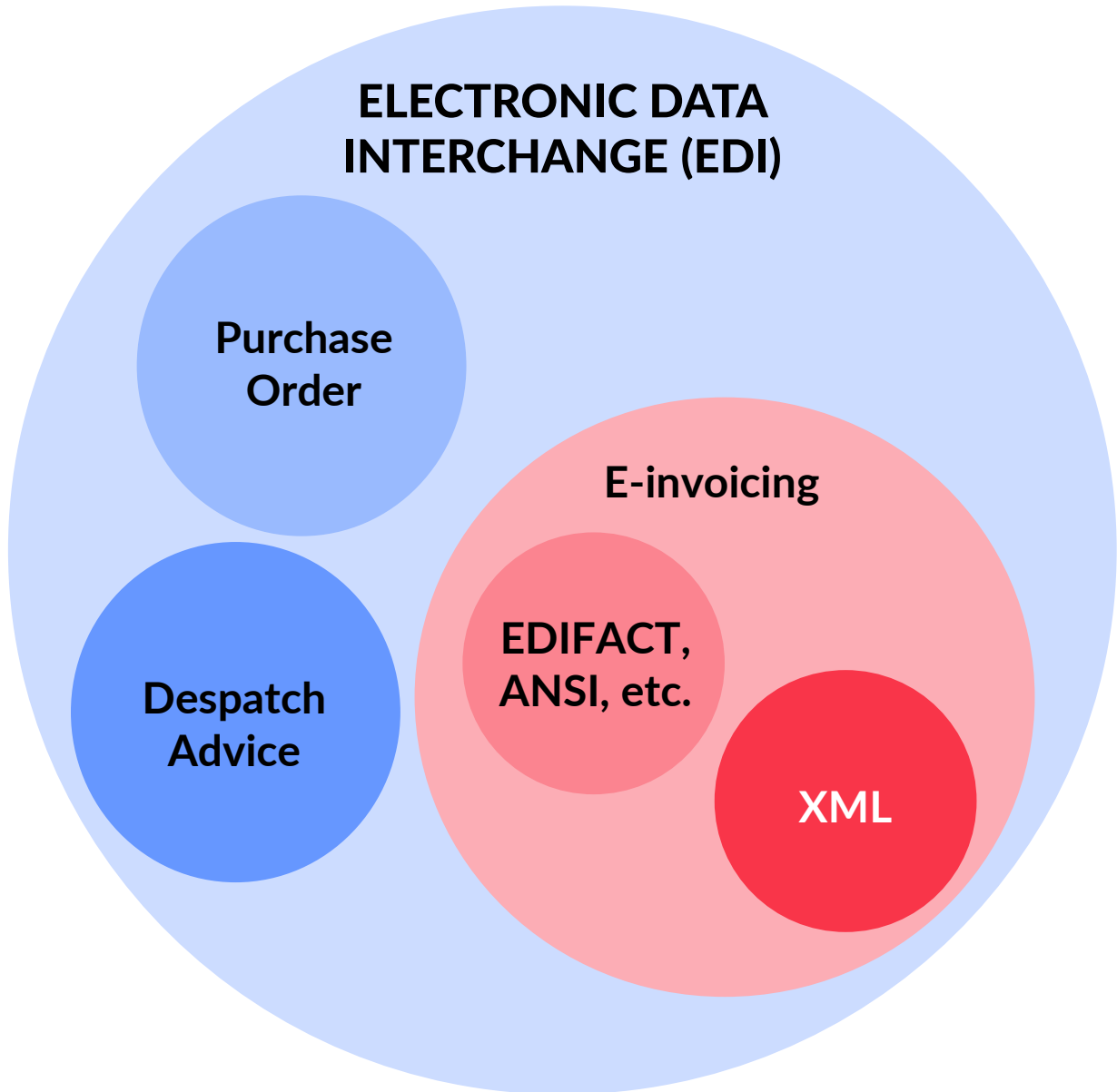
The rise of Peppol

Challenges

Outlook



# EDI vs. e-invoicing

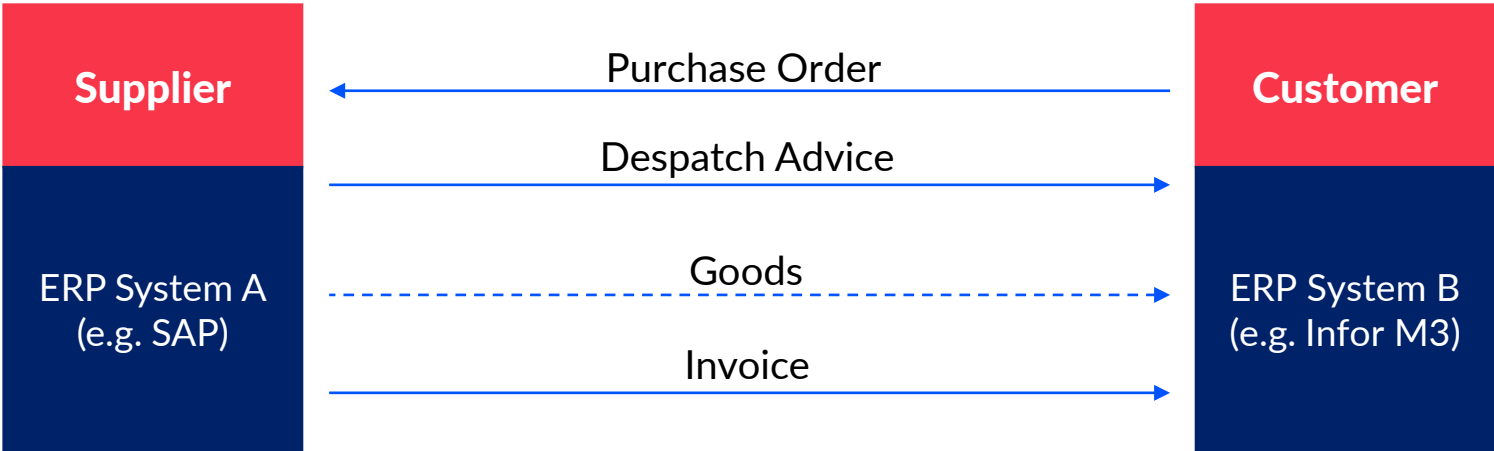




# What is Electronic Data Interchange (EDI)?

Not a single technology - rather a concept

The exchange of **structured and machine-processable information** between software systems of enterprises with minimal to **zero human interaction**





**How difficult  
is it?**



Image source: Wikimedia Commons



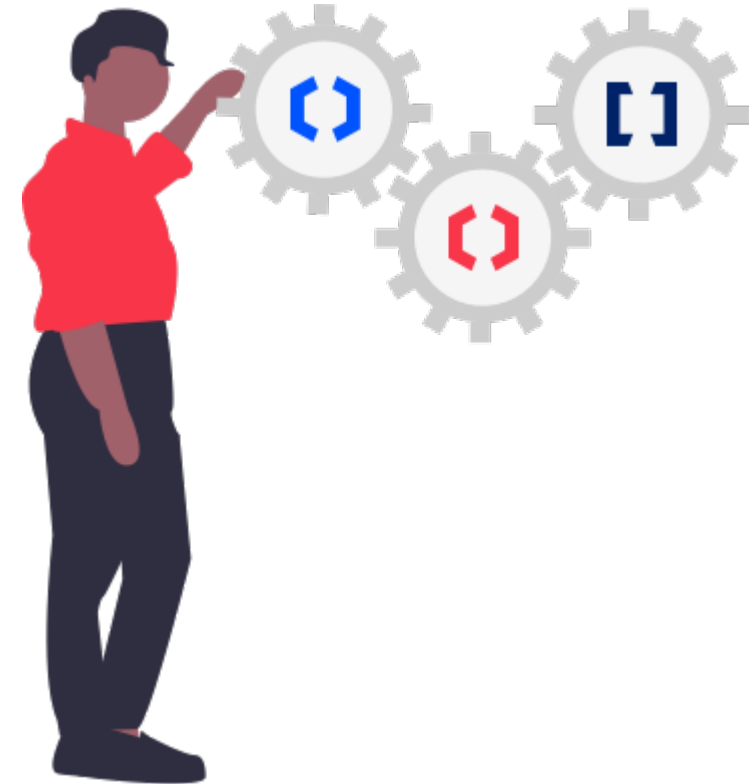
## Move this from A to B

UNA:+.?'UNB+UNOA:3+4403456789011:14+5013457789010:14+140223:1552+MSGNR4711+++++1'UNH+1...'+  
DESADV:D:96A:UN:EAN005'BGM+351+DOCNR4712+9'DTM+137:20230218:102'DTM+2:20230220:102'NAD+SU+  
4403456433242::9'NAD+BY+5013457469542::9'NAD+DP+4403456633215::9'...



# What do we need to consider for a working e-invoicing setup?

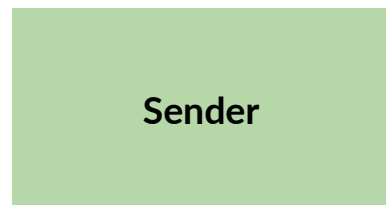
- Process choreography
- Document structure and semantics, master data
- Setup, monitoring and support
- Exchange protocol or network



**About networks**

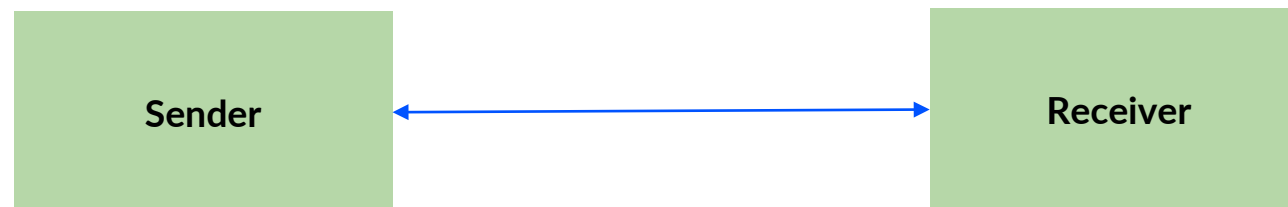


# We need to connect sender and receiver





## 2 corner model



Connection is established **directly between sender and receiver**

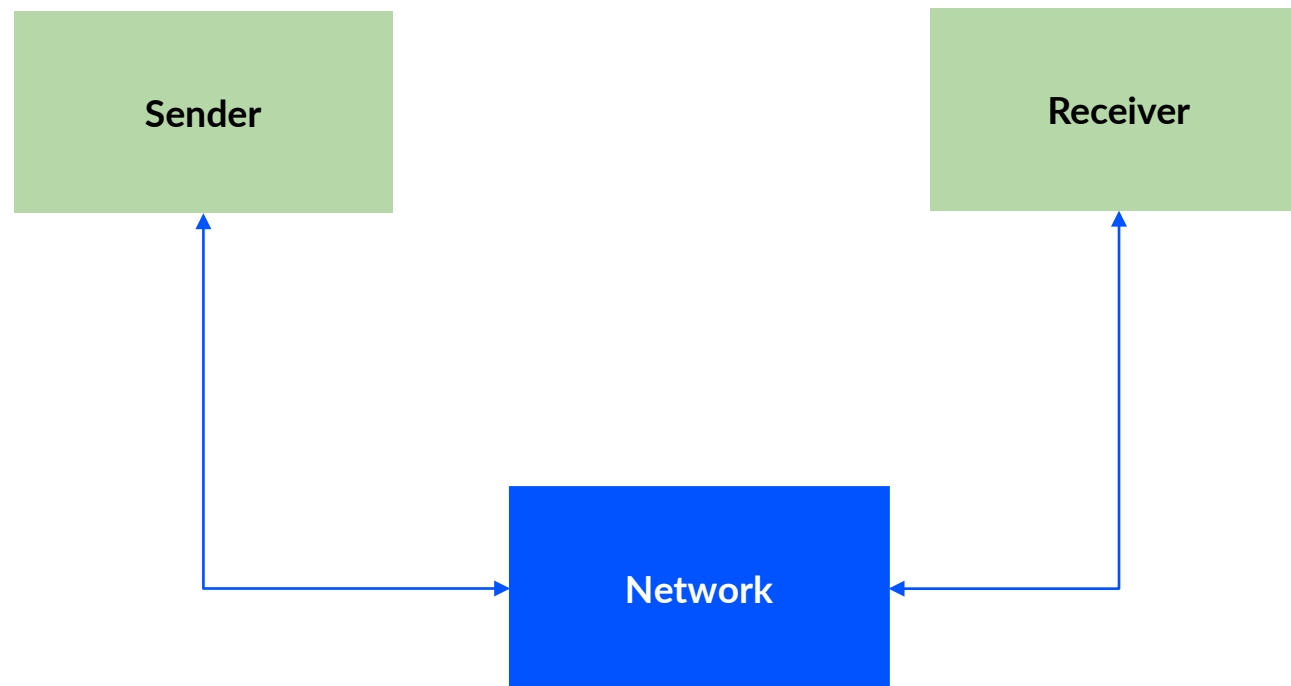
Local IT infrastructure needed - e.g. for AS2

Bi-directional connections have a certain maintenance effort (certificate changes with AS2, OFTP2, etc.)

Do not scale in the very large



## 3 corner model



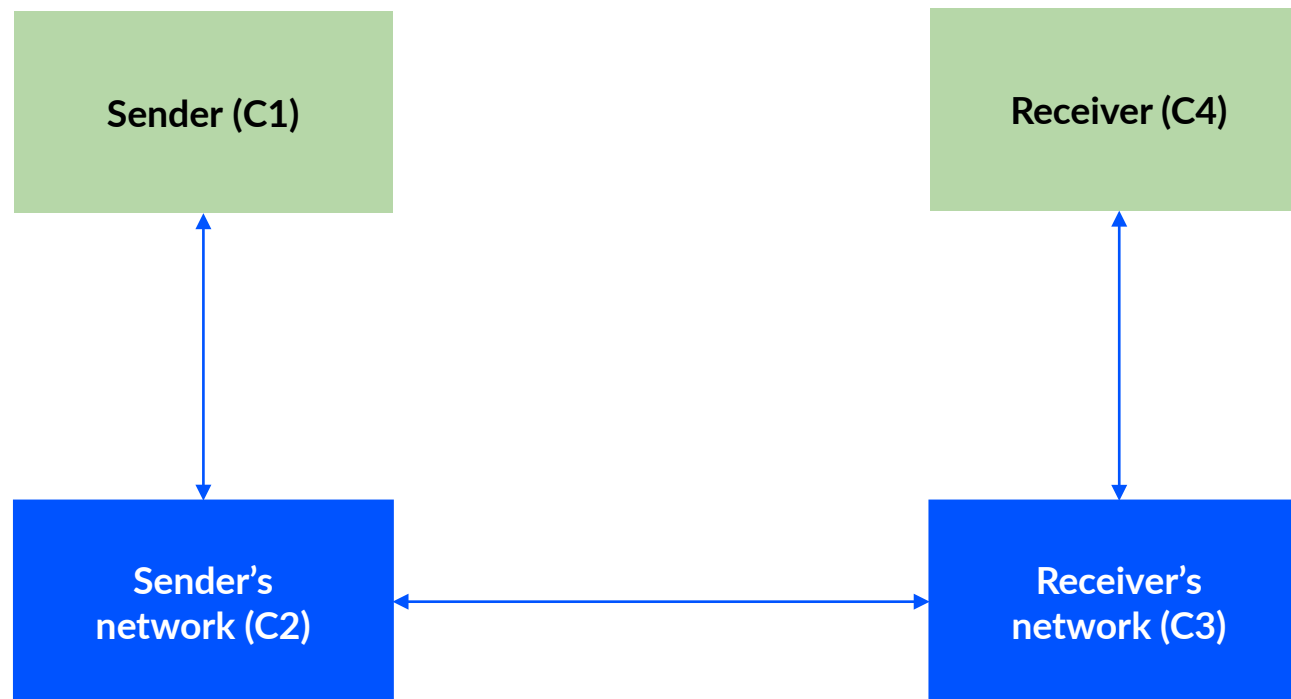
**Sender and receiver are using the same network** to communicate with each other

The network provider may develop a monopoly and “force” a sender into a contract, if he wants to reach a certain receiver

Problematic from a legal point of view



## 4 corner model



### **Sender and receiver are free to choose their network**

Networks communicate with each other at no additional cost

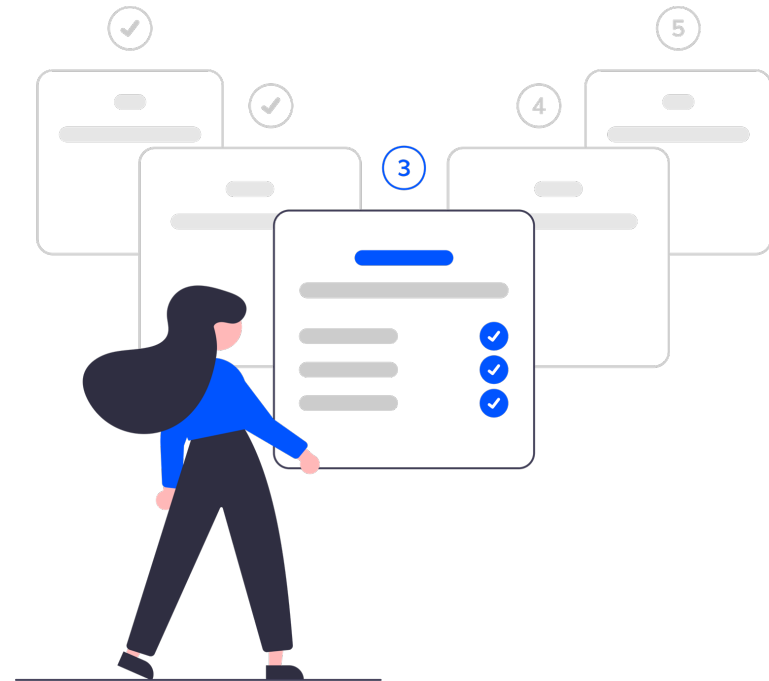
Excellent fit for a scalable network due to the “connect once - reach all” approach



# The rise of Peppol

# Challenges when exchanging electronic documents

- Each industry has specific standards and exchange protocols
- Each partner has different e-invoice formats
- Each partner has different exchange protocols
- Each partner executes onboarding projects differently
- Each partner has different requirements regarding testing
- Some partners support parallel phase operations
- ...





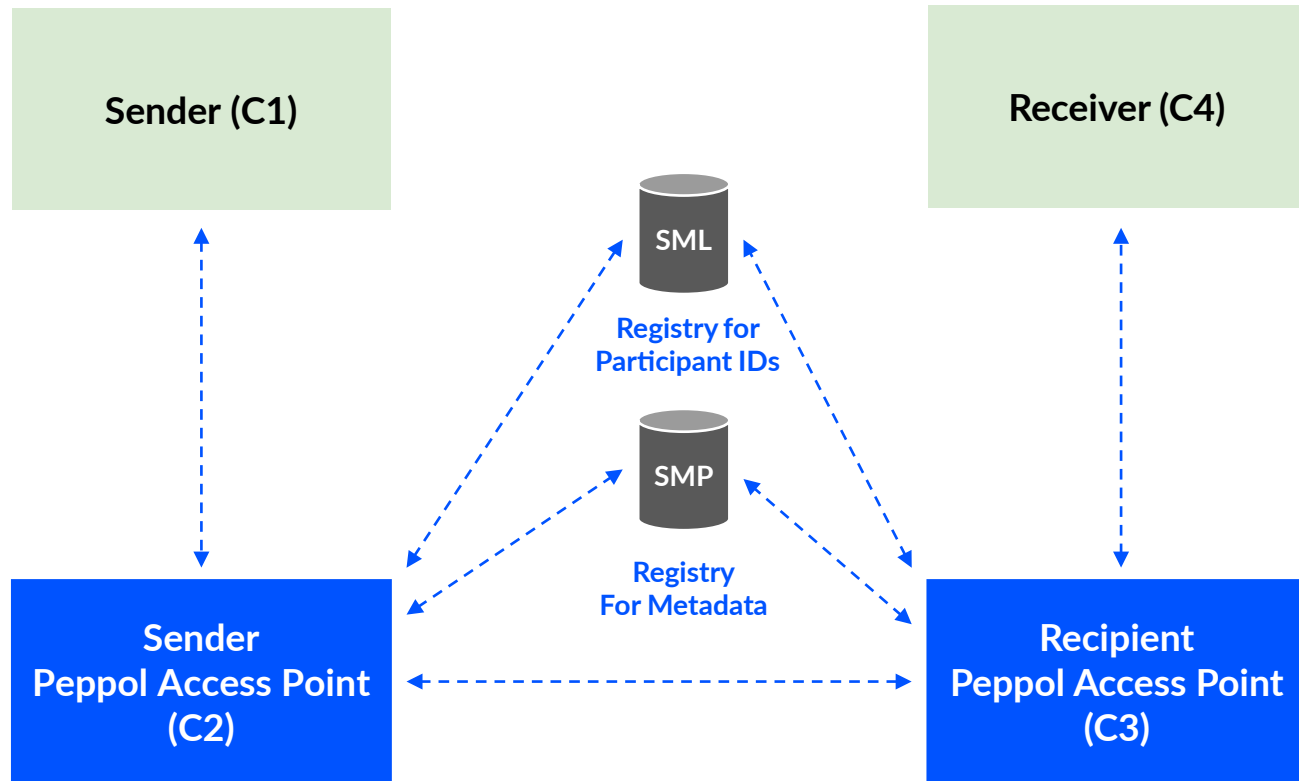


# What if?



Source: [https://commons.wikimedia.org/wiki/File:Crowd\\_of\\_people\\_with\\_phones.jpg](https://commons.wikimedia.org/wiki/File:Crowd_of_people_with_phones.jpg)

# Peppol overview



- Four-corner model for cross border e-procurement
- Sender und receiver may choose any Peppol Access Point
- “Connect once – reach all “
- No roaming fees between the APs

# Delivery of an invoice via Peppol

Necessary data: Peppol Participant Identifier of the receiver

- E.g. Leitweg ID: **0204:991-11263-21**

Lookup of Peppol ID via SML/SMP will reveal:

- Supported services of the Peppol participant (Service Metadata Reference)
- Each Service Metadata Reference contains:
  - Supported **processes**
  - Associated **AS4 endpoints**
  - **Certificates** for the AS4 endpoints
  - Supported **document types**
- Based on that information the target document can be created and be sent to the service endpoint



Example lookup: [https://peppol.helger.com/public/locale-en\\_US/menuitem-tools-participant?scheme=iso6523-actorid-upis&value=0204%3A991-11263-21&sml=autodetect](https://peppol.helger.com/public/locale-en_US/menuitem-tools-participant?scheme=iso6523-actorid-upis&value=0204%3A991-11263-21&sml=autodetect)

# Delivery using Peppol – representation of IDs in UBL

```
<StandardBusinessDocument xmlns:xs="http://www.w3.org/2001/XMLSchema"
  xmlns="http://www.unece.org/cefact/namespaces/StandardBusinessDocumentHeader">
  <StandardBusinessDocumentHeader>
    <HeaderVersion>1.0</HeaderVersion>
    <Sender>
      <Identifier Authority="iso6523-actorid-upis">9930:DE283482838</Identifier>
    </Sender>
    <Receiver>
      <Identifier Authority="iso6523-actorid-upis">0204:04011000-12346-33</Identifier>
    </Receiver>
    ...
  </StandardBusinessDocumentHeader>
  <?xml version="1.0" encoding="UTF-8"?>
  <ubl:Invoice xmlns:ubl="urn:oasis:names:specification:ubl:schema:xsd:Invoice-2"
    xmlns:cac="urn:oasis:names:specification:ubl:schema:xsd:CommonAggregateComponents-2"
    xmlns:cbc="urn:oasis:names:specification:ubl:schema:xsd:CommonBasicComponents-2"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xsi:schemaLocation="urn:oasis:names:specification:ubl:schema:xsd:Invoice-2:urn:oasis:names:specification:ubl:schema:xsd:Invoice-2.xsd">
    ...
    <cbc:DocumentCurrencyCode>EUR</cbc:DocumentCurrencyCode>
    <cbc:TaxCurrencyCode>EUR</cbc:TaxCurrencyCode>
    <cbc:BuyerReference>04011000-12346-33</cbc:BuyerReference>
    <cac:AccountingSupplierParty>
      <cac:Party>
        <cbc:EndpointID schemeID="9930">
          DE283482838
        </cbc:EndpointID>
        <cac:PartyIdentification>
          <cbc:ID>DE12345678</cbc:ID>
        </cac:PartyIdentification>
        ...
      </cac:Party>
    </cac:AccountingSupplierParty>
    <cac:AccountingCustomerParty>
      <cac:Party>
        <cbc:EndpointID schemeID="0204">
          04011000-12346-33
        </cbc:EndpointID>
        <cac:PartyIdentification>
          <cbc:ID>BI12345678</cbc:ID>
        </cac:PartyIdentification>
        ...
      </cac:Party>
    </cac:AccountingCustomerParty>
    ...
  </ubl:Invoice>
</StandardBusinessDocument>
```

Peppol Sender ID

Peppol Receiver ID

Leitweg ID




Peppol Sender ID

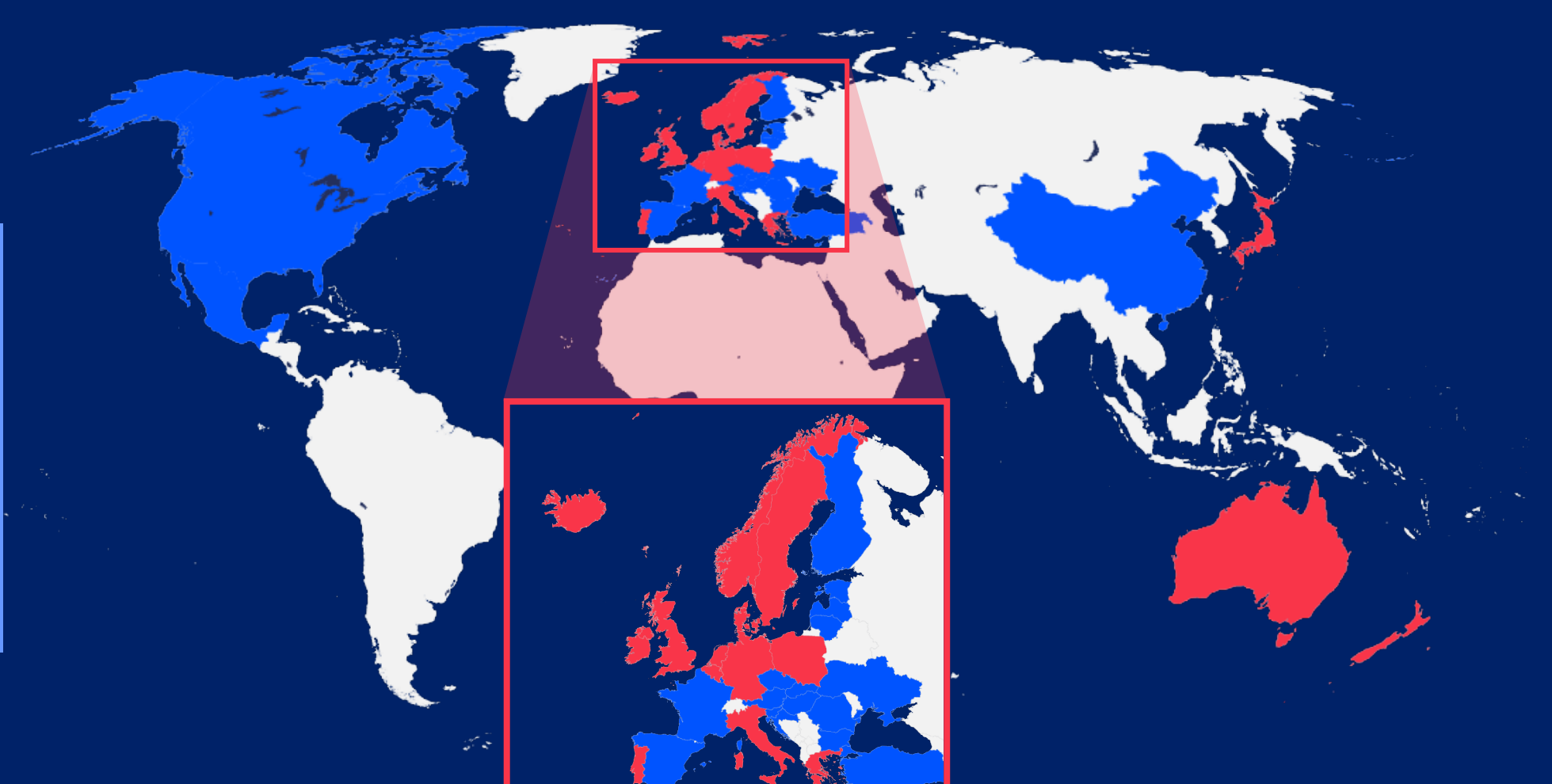
Peppol Receiver ID



# Peppol usage worldwide

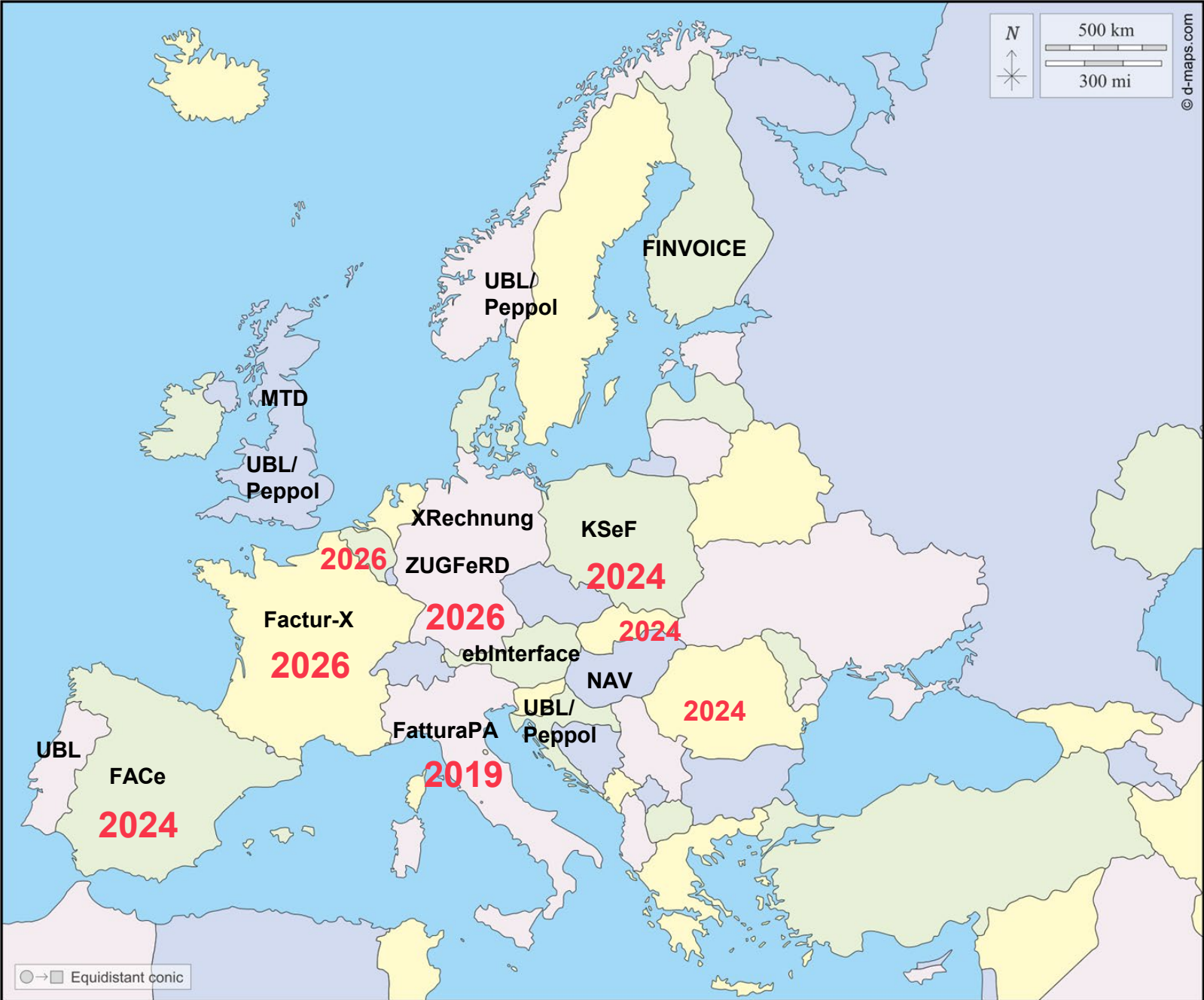
**KEY**

-  Peppol supported
-  Has local Peppol authority
-  Peppol not supported





# Mandatory E-Invoicing and VAT reporting are on the rise



# Existing CTC Models

Centralised exchange

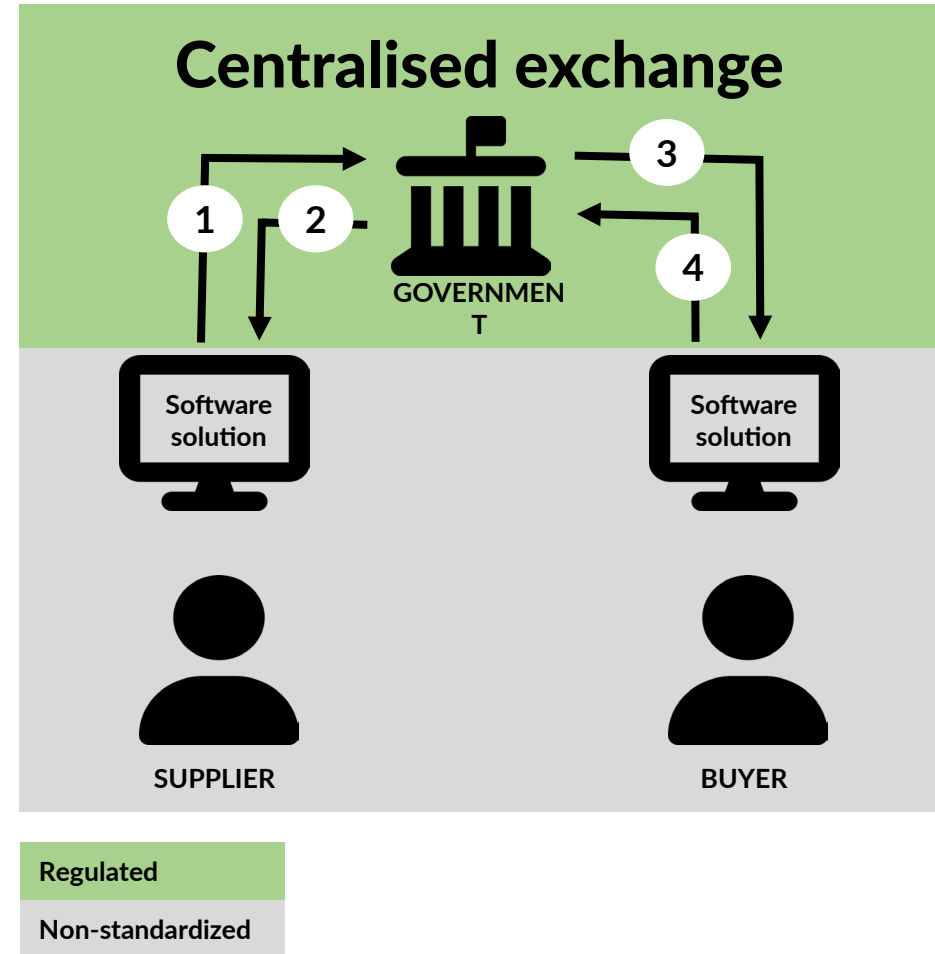
Transactions are **validated and exchanged by CTC platform**



Italy



Turkey



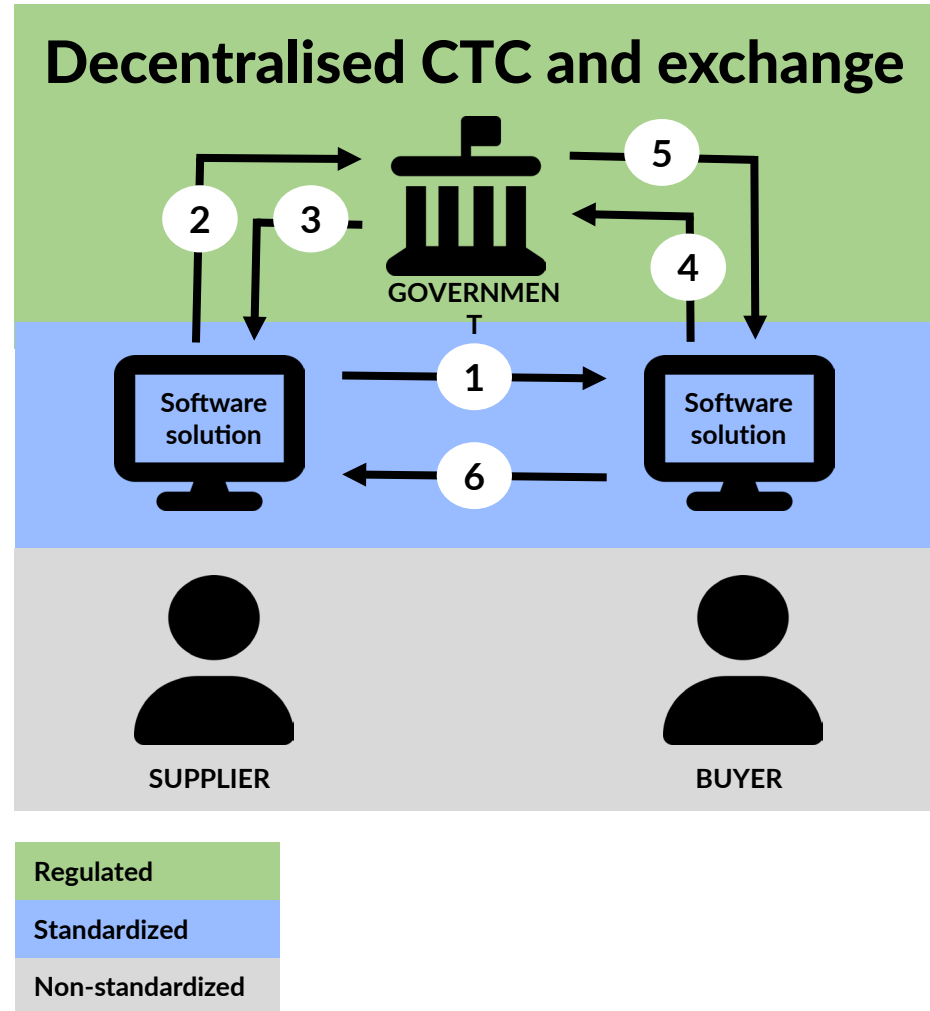
# Existing CTC Models

Decentralised CTC and exchange

Decentralised exchange with validations and reporting via network of certified vendors



Peppol



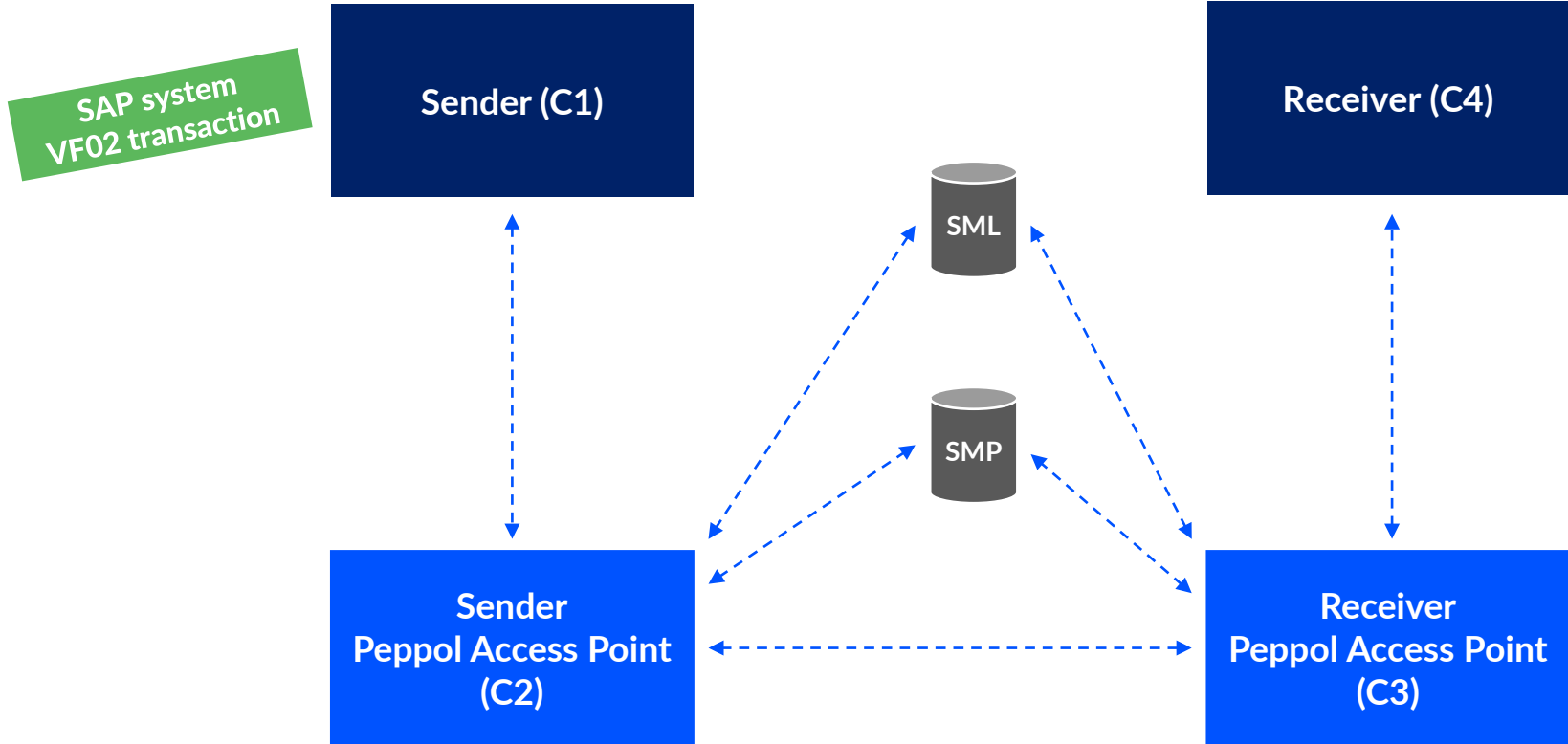


**Challenges**



# Peppol: overview

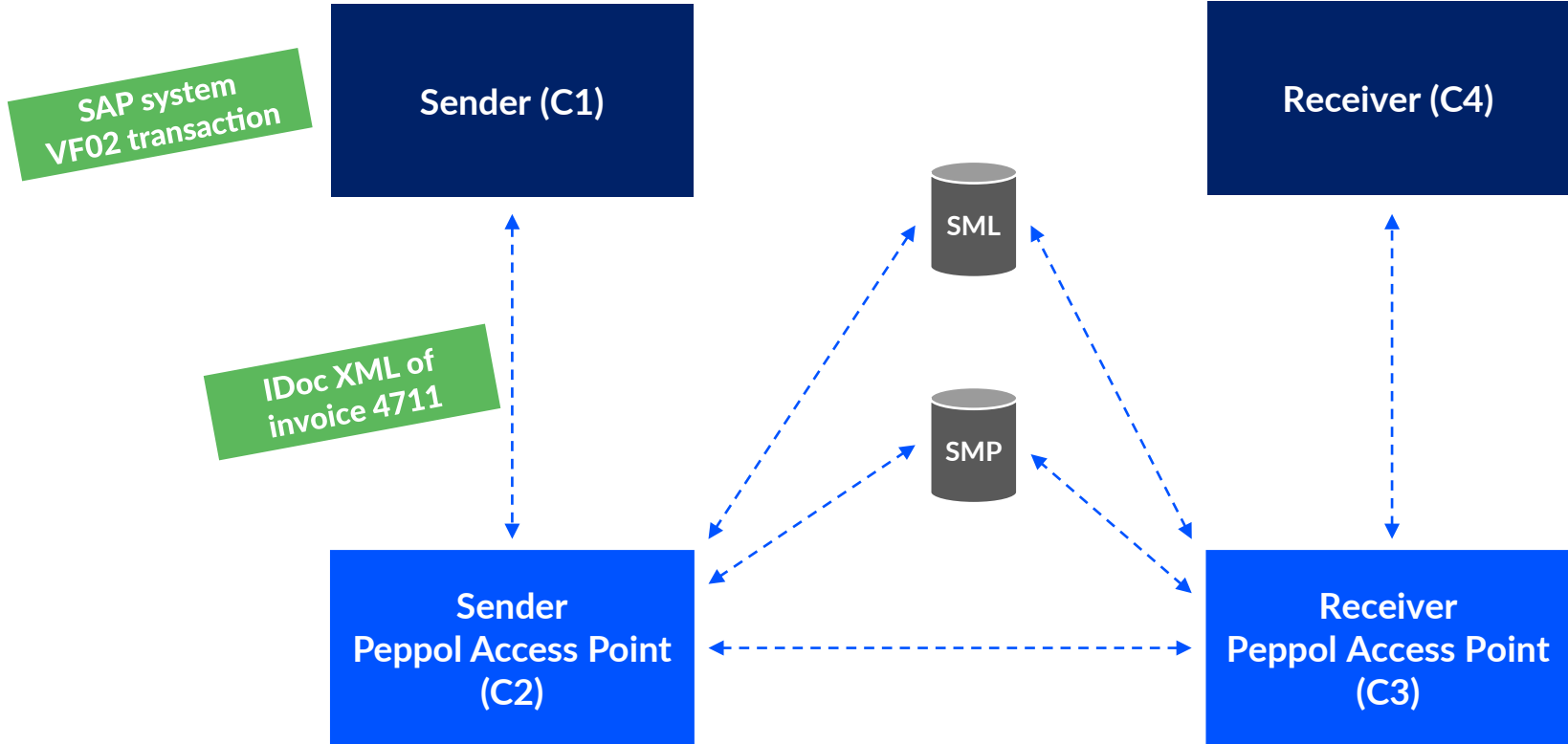
Example: XRechnung sent from SAP





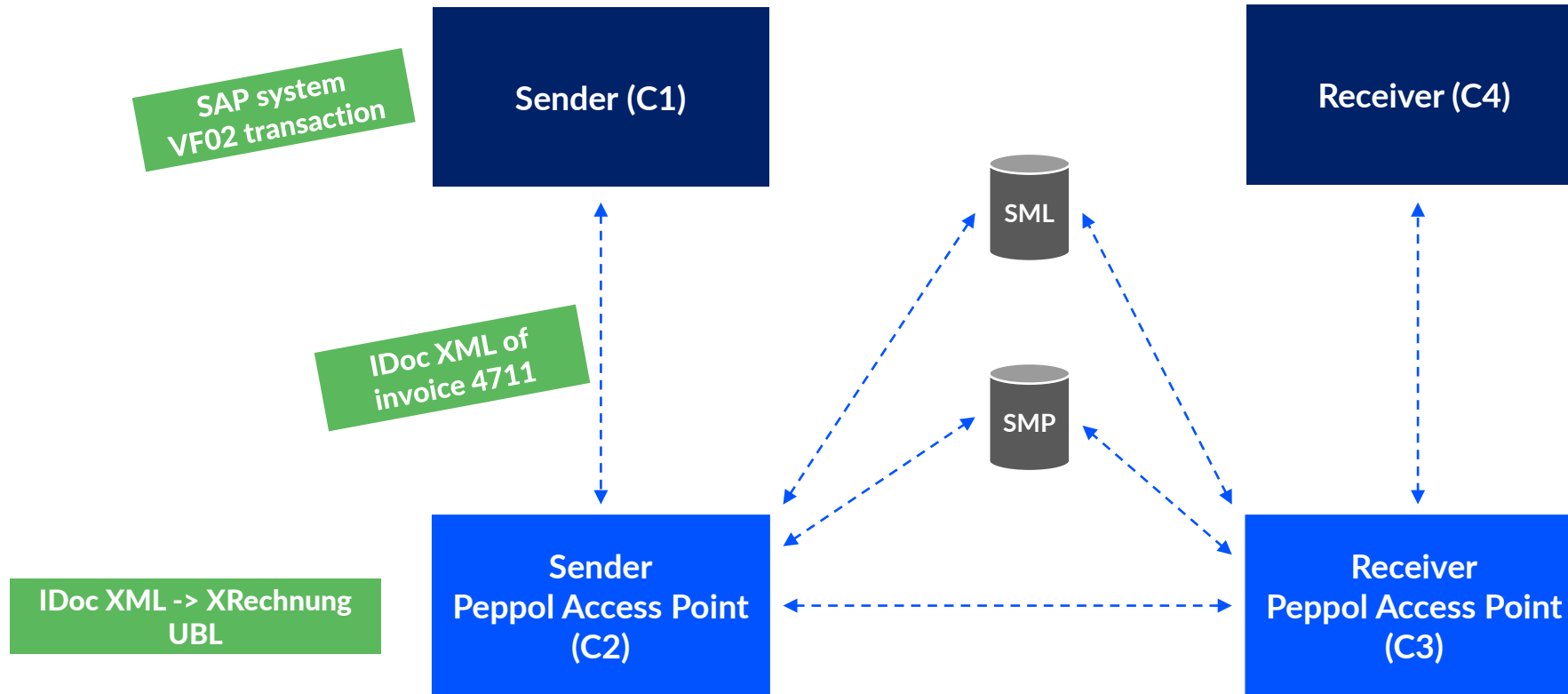
# Peppol: overview

Example: XRechnung sent from SAP



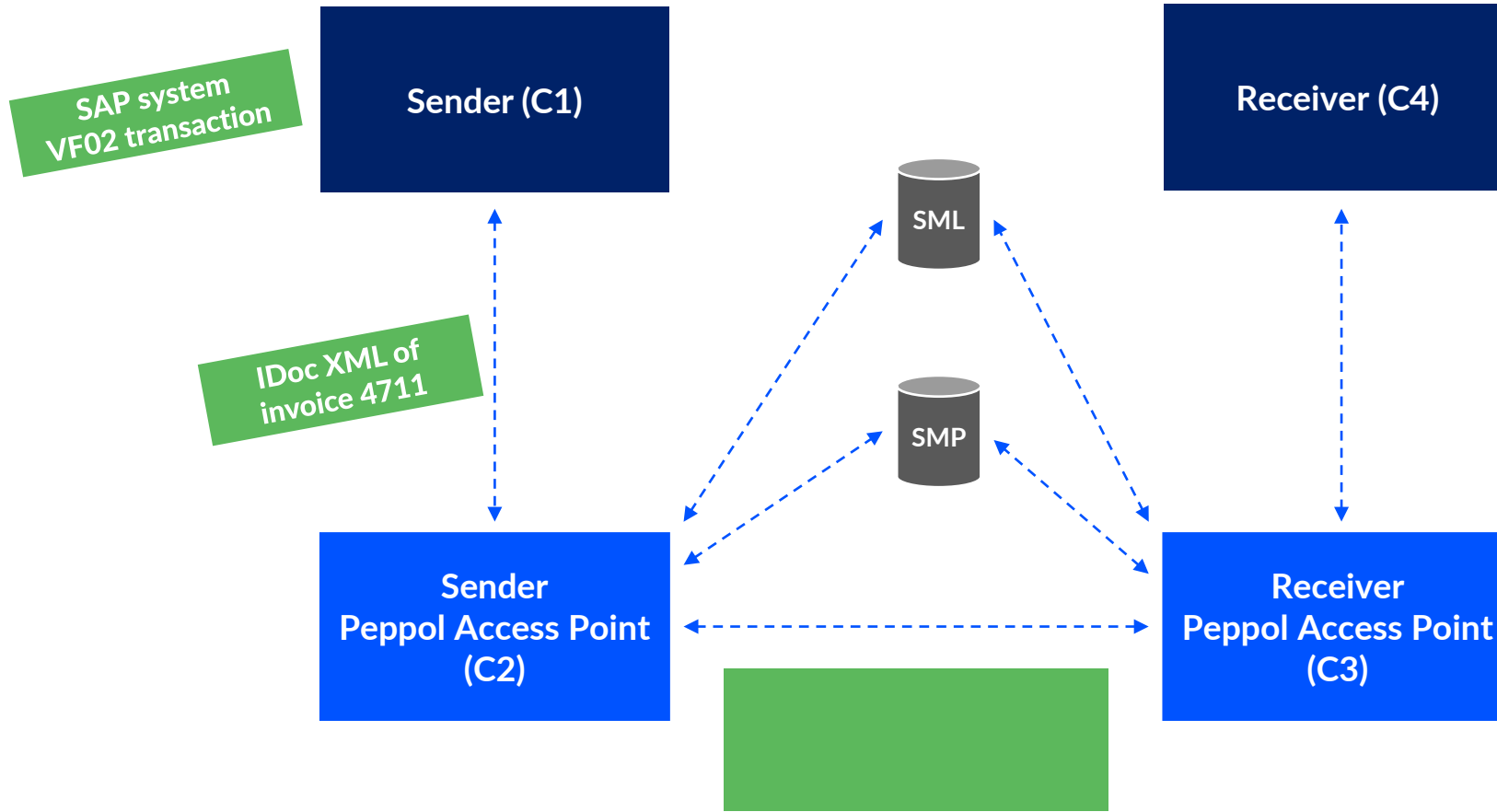
# Peppol: overview

Example: XRechnung sent from SAP



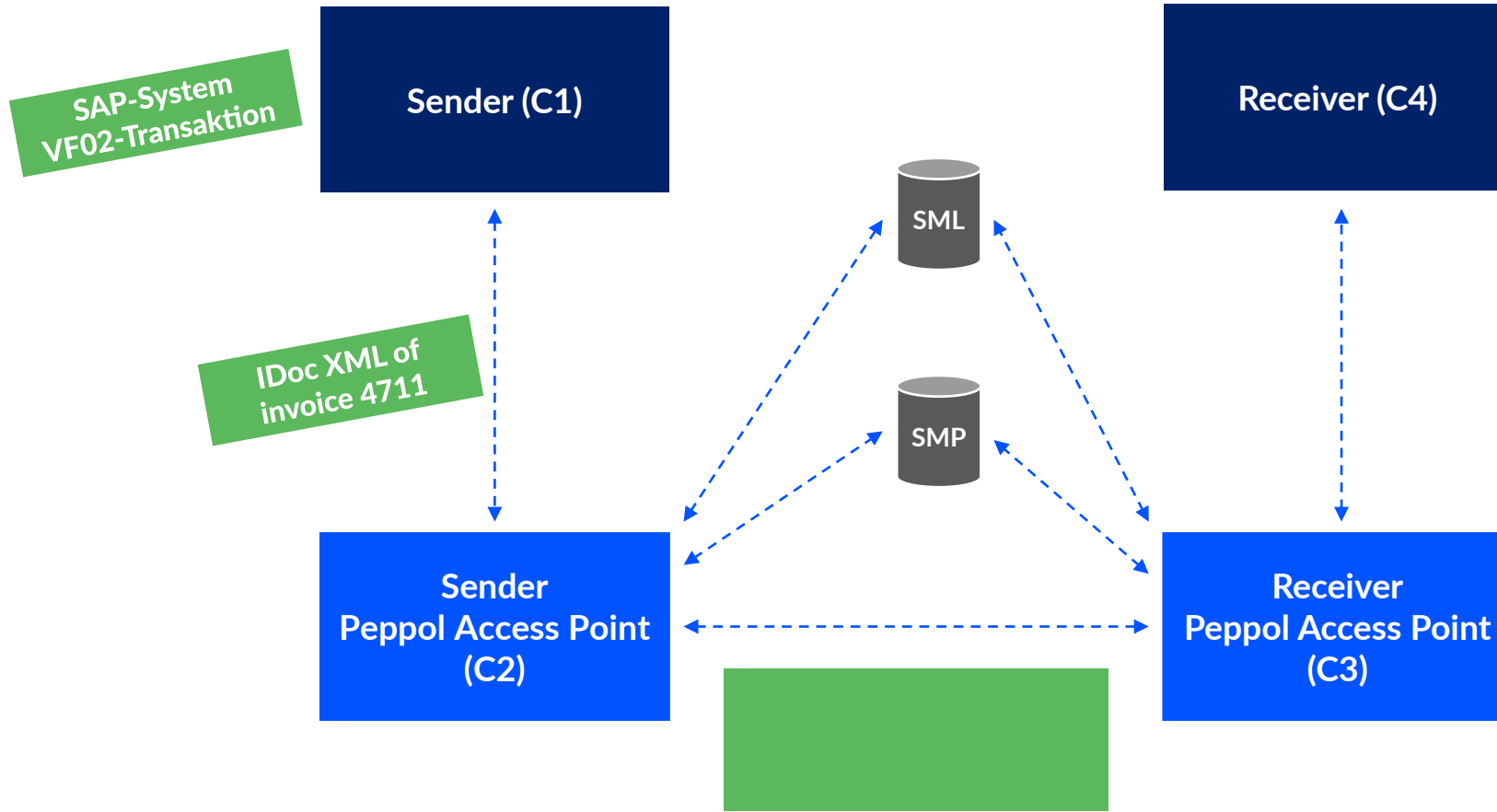
# Peppol: overview

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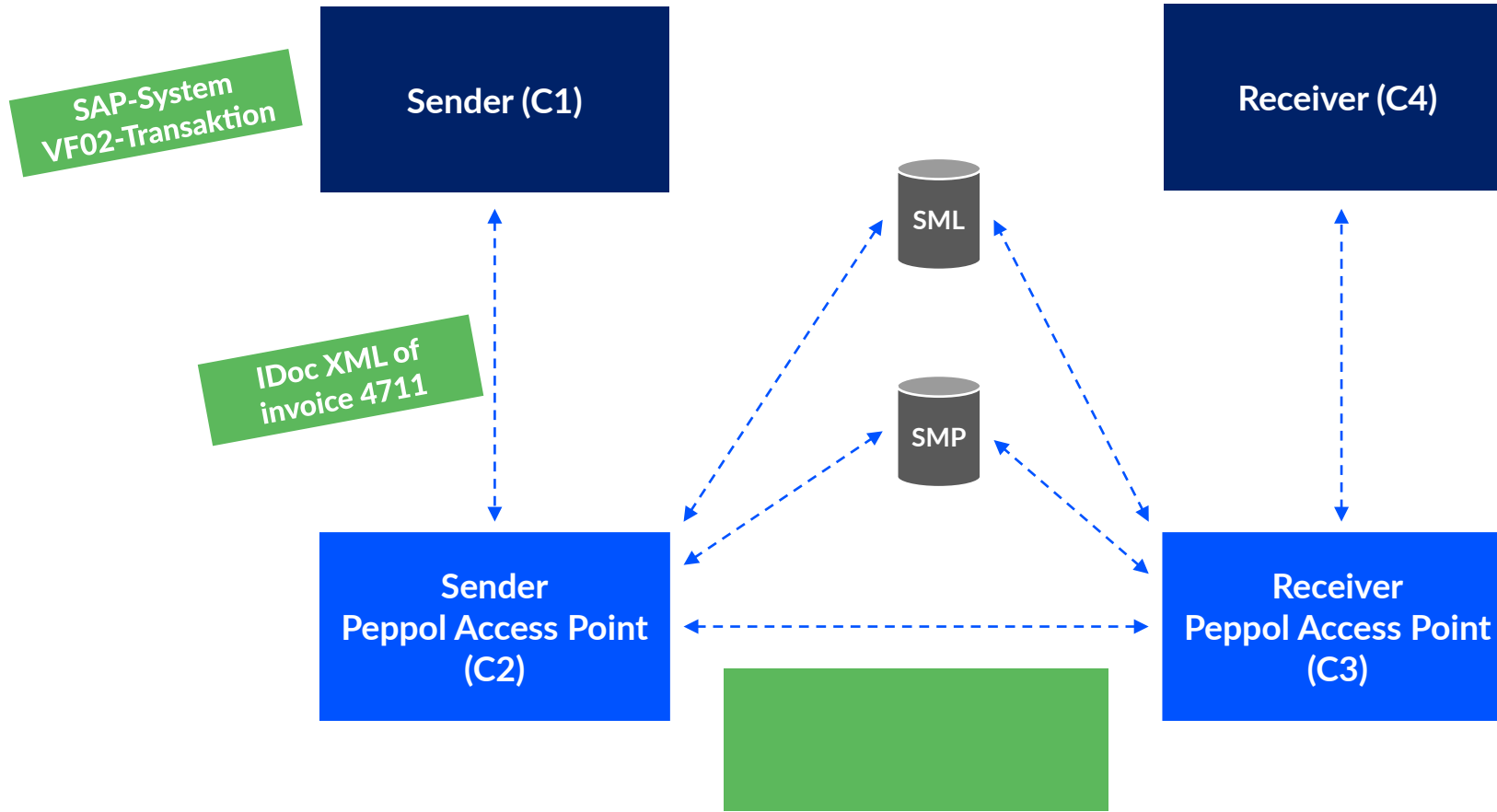
# Peppol: overview

Example: XRechnung sent from SAP



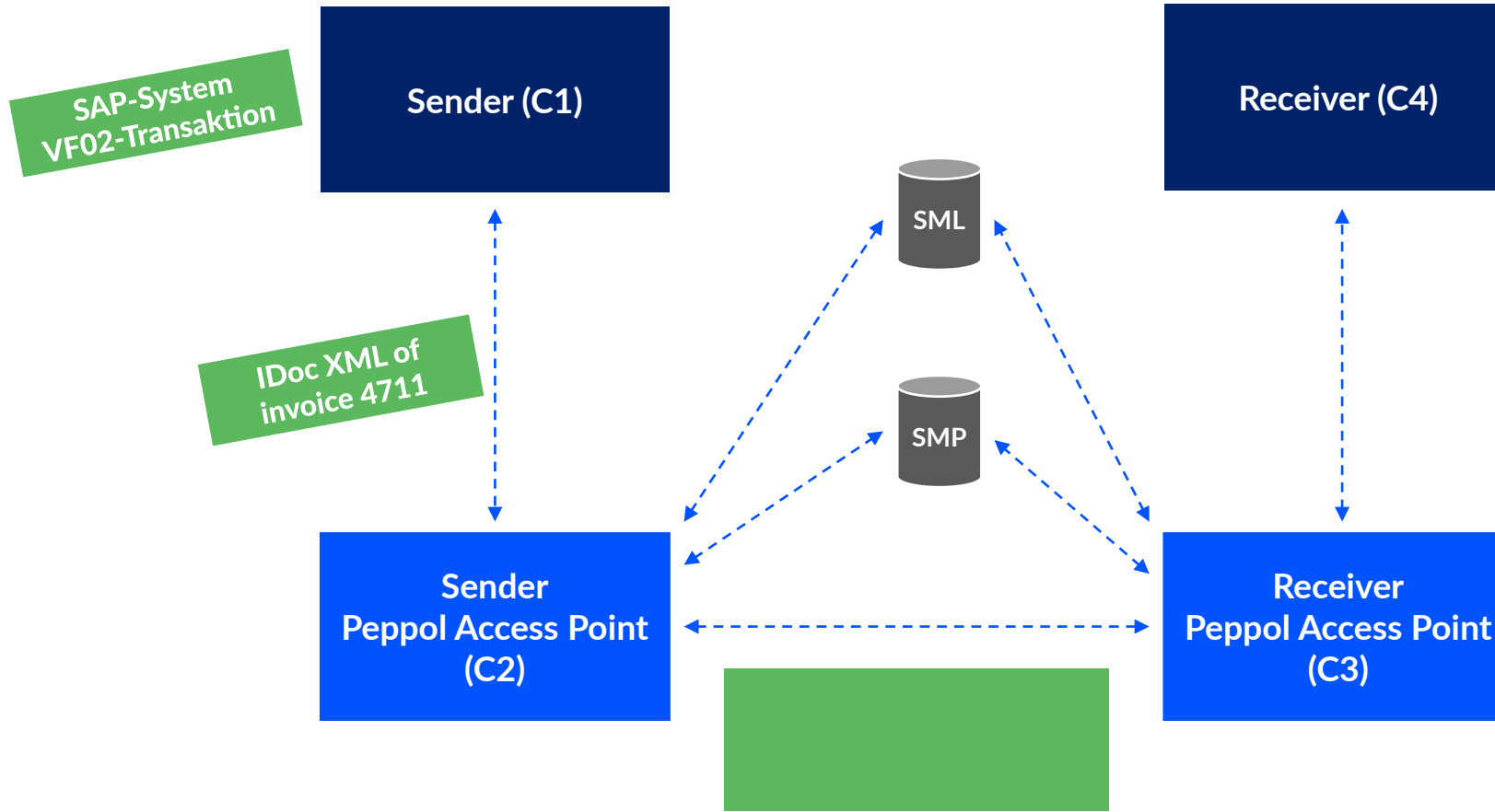
# Peppol: overview

Example: XRechnung sent from SAP



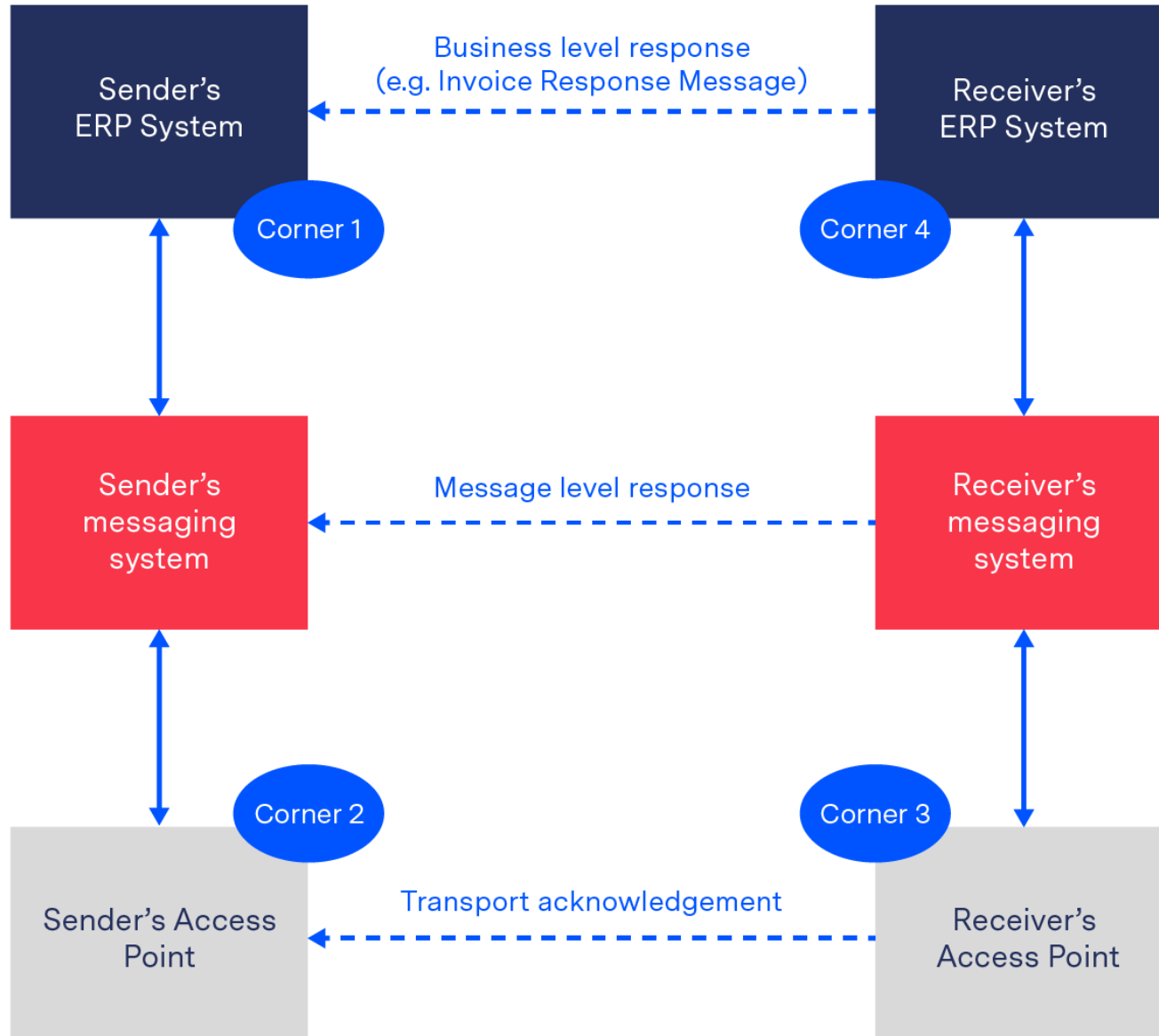
# Peppol: overview

Example: XRechnung sent from SAP





# Further developments at Peppol



The message could be **processed in the target system** of the recipient (e.g. the ERP system)

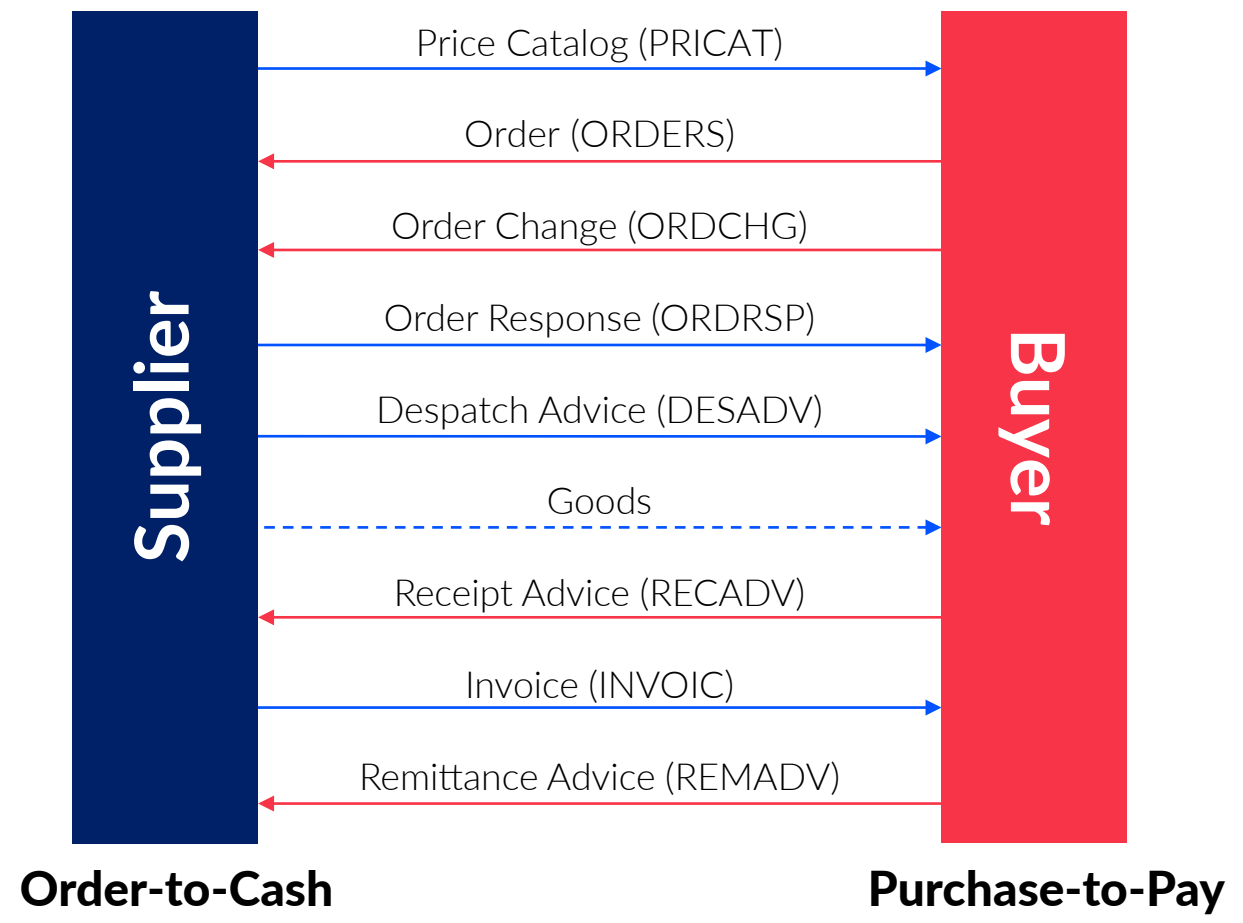
The message **could be validated and processed** in the messaging system of the recipient

The message has been **received and acknowledged** by the recipient (Non-repudiation of receipt)

**Outlook**



# Demand for deeper process integration



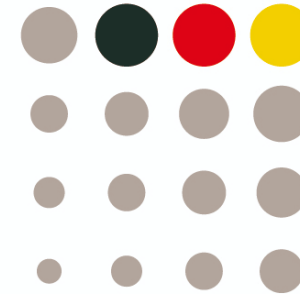


# Further Peppol Business Interoperability Specifications

- Peppol BIS **Order only** 3.3
- Peppol BIS Ordering 3.3
- Peppol BIS Catalogue with response 3.1
- Peppol BIS Catalogue without response 3.1
- Peppol BIS Despatch Advice 3.1
- Peppol BIS Punch Out 3.1
- Peppol BIS Order Agreement 3.0
- Peppol BIS Message Level Response 3.0
- Peppol BIS Invoice Response 3.2
- Peppol BIS Advanced Ordering 3.0

## Example Germany:

XBestellung (based on Peppol BIS Order only 3.1)



**Koordinierungsstelle  
für IT-Standards**



# CONNECTIONS THAT WORK

Close to our customers



## GERMANY

Leoprechtingstraße 32  
81739 München



## AUSTRIA

Lange Gasse 30  
1080 Wien



## UNITED KINGDOM

38 Chancery Lane  
London WC2A 1EN

Email: [edi@ecosio.com](mailto:edi@ecosio.com)

