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OpenPeppol eDelivery and Post-Award joint session on International Invoicing (PINT)

21.10.2020

Net-meeting, 09:00 – 11:00 CEST

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Agenda

1. Welcome
 - **Martin Mane (eDEC Leader), Paul Simons (PoAC Leader)**
 - **Presenters: Georg Birgisson and Philip Helger**
 2. General overview
 3. eDelivery (eDEC)
 4. Post-Award (PoAC)
 5. Migration
 6. Questions and discussion
- 5 minute break in the middle



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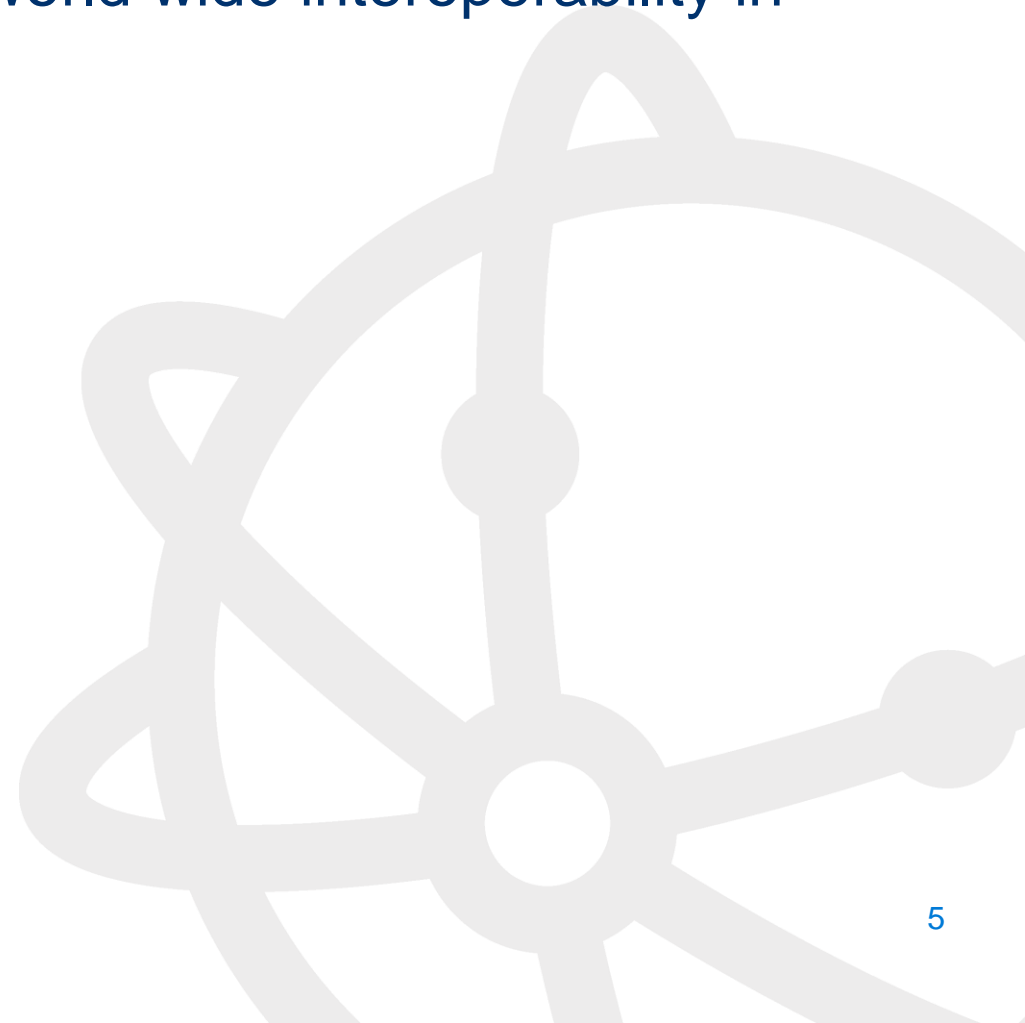
General Overview

Peppol International Invoicing Pre-Study

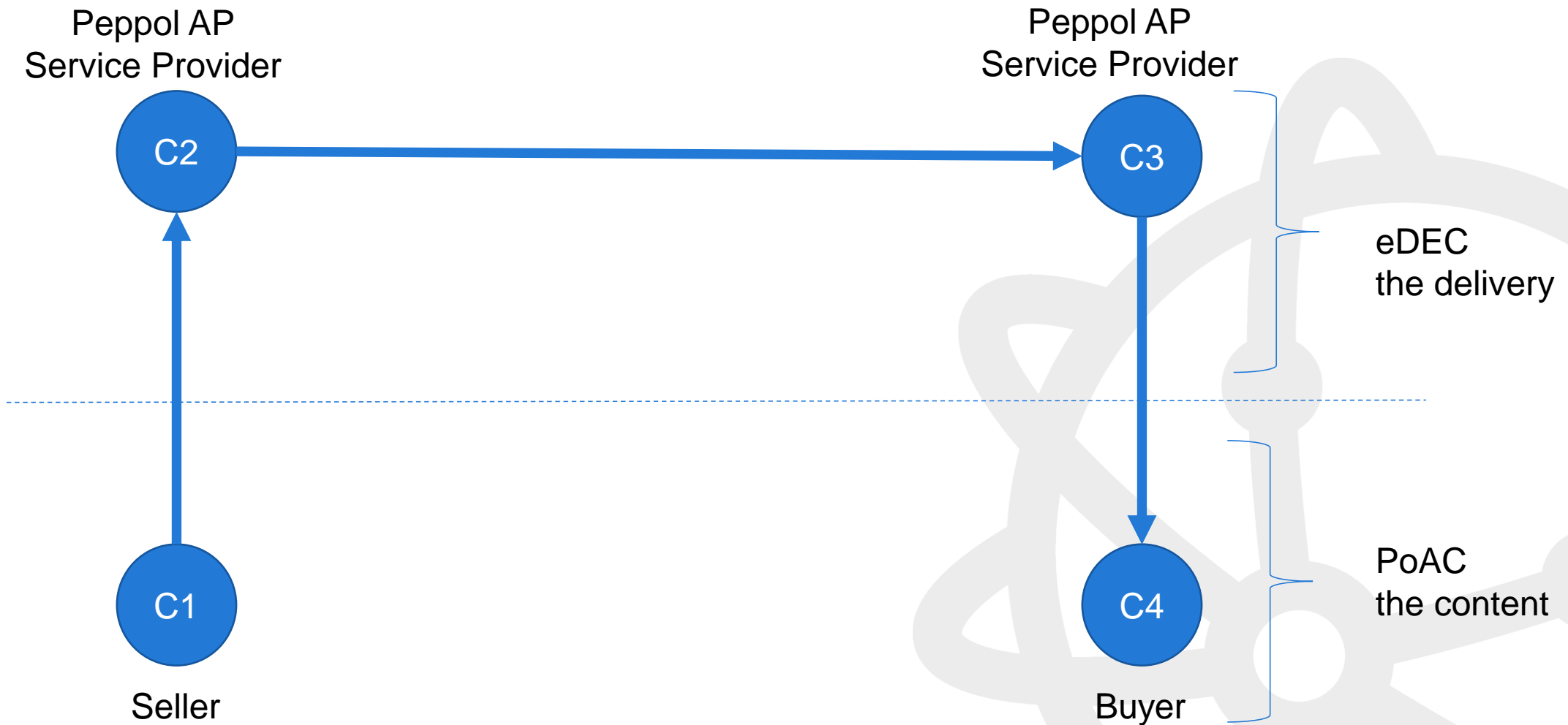
- Recognizing challenges to the current mandatory BIS and the application of the Mandatory Principle
- Mandatory principle
 - Peppol Communities define Peppol BIS to promote global interoperability.
Receivers with a registered receive capability for a business function for which a Peppol BIS is available shall have receive capabilities for the Peppol BIS registered in an SMP, as a minimum.
 - Applied through a single mandatory BIS specification, Peppol BIS Billing 3.0
- Main work
 - Identify gaps in requirements
 - Assess feasibility of international invoicing and propose solutions

Project objective

- Provide an invoice specification that enables world wide interoperability in the Peppol network
- Solution
 - Modified invoice data model
 - Dynamic document lookup in the Peppol network



The Peppol 4 corner model (Invoicing)



Design principles

- PINT is based on the BIS Billing 3.0, which is a compliant restriction (CIUS) of the EN 16931
- Business terms that are used differently in different parts of the world are generalized enough so that invoicing domain specific requirements can be stated as a specialization of that business term (narrowing)
 - Consequently current BIS specifications can be expressed as a compliant restriction of the PINT
- When sending an invoice the sender needs to know:
 - what business terms he **MUST** send and what business terms he **MAY** send
 - how the receiver will understand and process what is sent
- The exchange must not depend on any bilateral alignment between the sender and the receiver

Some key terminology

- **Business term.**
 - A defined piece of information, such as an invoice payable amount
- **Business Interoperability Specification (BIS)**
 - A set of business terms with their definitions and the rules that govern them
- **Business domain**
 - Buyers and sellers who operate with a shared set of requirements. Most commonly legal requirements that depend on where they are incorporated but can also extend to the used of regional services like payment methods.

Status

- Two teams – on schedule 😊
 - PoAC – PINT team, developing data model
 - Plan to deliver in November 2020
 - eDEC – DDTS team, developing new document type scheme
 - Plan to deliver in November 2020
- Consultation will be conducted before a final decision is made to progress with PINT



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eDelivery (eDEC)

eDEC DDTS

- DDTS = Dynamic Document Type Schema
- Mandate was given in May 2020, first workgroup meeting in July 2020
- Primary goal
 - Provide the technical means for PINT to function
- Detailed Goals
 - Provide the technical foundation for PINT to work in the eDelivery network
 - Provide a solution that works not just with PINT but with future similar solutions as well
 - Design it in a way, that the current network is not impacted – i.e. backwards compatible

eDEC DDTS - Outcomes

- Proposed changes to specifications
 - Peppol Policy for use of Identifiers 4.2.0, mainly chapter 5
 - No further Peppol specification needed adoption
- Major new element
 - New Document Type Identifier scheme `peppol-doctype-wildcard`
 - Runs in parallel to `busdox-docid-qns`
 - Supports the usage of a Wildcard
- Other outcomes
 - A joint migration plan of DDTS and PINT

eDEC DDTS - Wildcard

- Enables receivers to register for a certain document type and all narrower specifications
- Narrower means that some or all features of the Parent Document Type are used and all rules of the Parent Document Type are respected
- The format of a Document Type Identifier Value is (POLICY 20):
 - `<syntax specific id>##<customization id>::<version>`
- Changing the Customization ID only
- Customization ID consists of Scheme Parts
- Scheme Parts are separated using `#compliant#`
- The Wildcard is represented as a * (star or asterisk)
- The Wildcard MUST be the last character of the Customization ID



➔ Examples

eDEC DDTS – Wildcard Examples

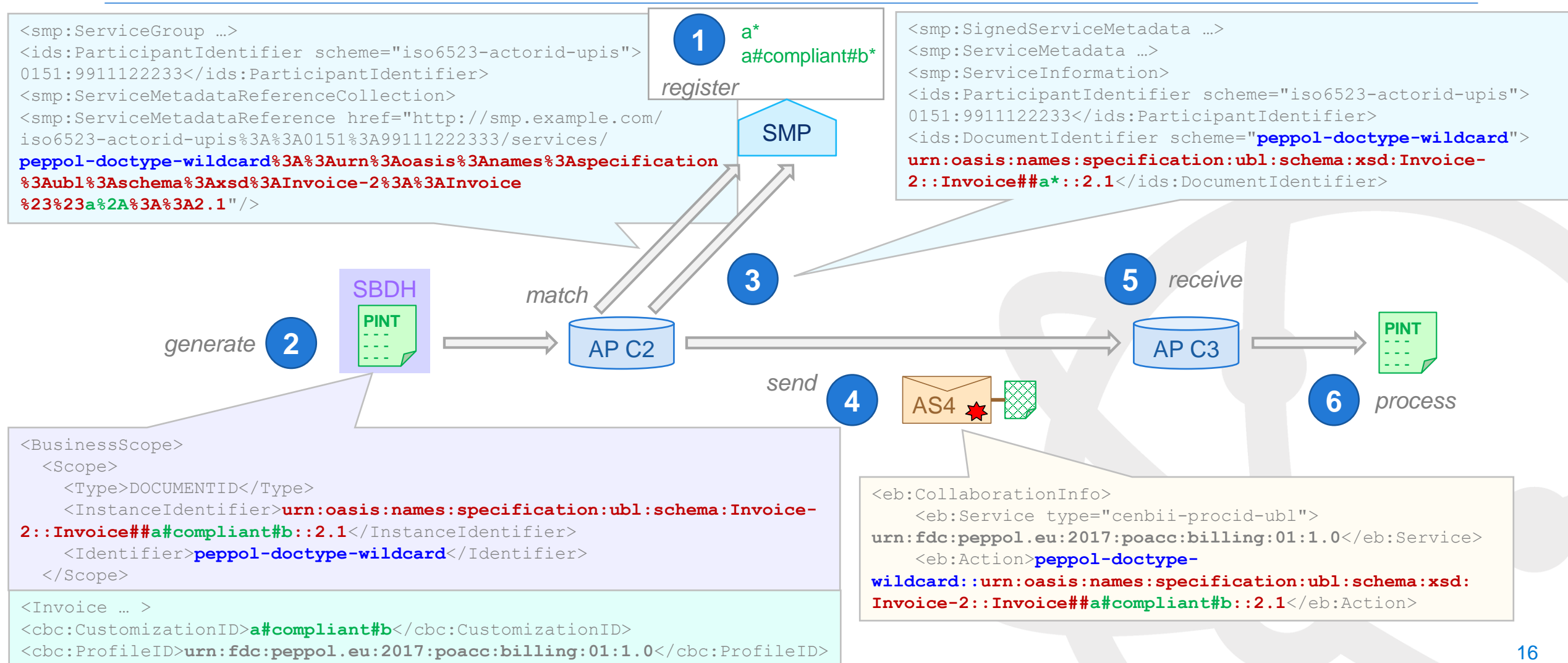
- Valid examples
 - `a*`
 - `a#compliant#b*`
 - `a#compliant#b#compliant#c#compliant#d*`
- Invalid examples
 - `a`
 - `a**`
 - `a#*`
 - `a#compliant#b#compliant#*`
 - `a*#compliant#b`
 - `*`
- Full document type identifier for SMPs
 - `urn:oasis:names:specification:ubl:schema:xsd:Invoice-2::Invoice##a#compliant#b*::2.1`

eDEC DDTS – Wildcard Usage

- Where **to** apply the Wildcard?
 - In the SMP as a receiving capability
- Where **not to** apply the Wildcard?
 - In the AS4 message
 - In the Peppol envelope (SBDH)
 - In the BIS payload document

➔ Examples

eDEC DDTS – Usage examples



eDEC DDTS – Technical Impact

- Impacted building blocks
 - SMP Servers
 - Access Points
- Impacted technical elements
 - Peppol SMP specification (client and server)
 - Peppol AS4 profile
 - Peppol Envelope specification

1.1	2018-08-31	Added the possibility to specify document type identifier scheme and process identifier scheme
		Added the possibility to specify additional attributes

- Customization ID

eDEC DDTS – SMP Matching

- When matching SMP responses, the Wildcard Indicator acts as a generalization for zero, one or more Scheme Parts
- Matching **MUST** be performed from left to right
- SMP registration `a*`
 - matches e.g. `a`, `a#compliant#b` **or** `a#compliant#b#compliant#c#compliant#d`
 - does not match e.g. `b`, `b#compliant#a` **or** `b#compliant#a#compliant#c`
- SMP registration `a#compliant#b*`
 - matches e.g. `a#compliant#b`, `a#compliant#b#compliant#c`
 - does not match e.g. `a`, `a#compliant#c` **or** `b#compliant#a`

eDEC DDTS – SMP Lookup

- Customization ID matching more Scheme Parts has precedence over a Customization ID matching less Scheme Parts
- SMP has a registration for a^* and $a\#compliant\#b^*$
 - Senders wanting to send $a\#compliant\#b\#compliant\#c$ must choose the SMP endpoint offered by $a\#compliant\#b^*$
 - Senders wanting to send $a\#compliant\#c$ must choose the SMP endpoint offered by a^*

eDEC DDTS – Technical Migration Impact

	<i>Area</i>	<i>Tasks</i>	<i>Comment</i>
SMP	SMP registration	Add a* or a#compliant#b*	Maybe just configuration
C1	Generate PINT	Change to SBDH (Scope) Change to UBL (CustomizationID)	Change in one field
C2	AP lookup SMP	Match if SMP prefix* matches prefix of doc	Coding change needed
C2	AP send	Change to AS4 (Action)	Change in one field
C3	AP receive	Receive PINT (AS4)	Configuration change
C4	Process PINT	Handle new CustomizationID	

Relationship to busdox-docid-qns

- No changes to the existing identifiers
 - E.g. Orders stay with busdox-docid-qns
 - Also national Invoice registrations (like German XRechnung) stay with busdox-docid-qns
- Differences to peppol-doctype-wildcard are
 - Matching algorithm on C2 side
 - Representation of the Customization ID on SMP side
- Precedence rules have to be defined per BIS
 - Changed for PINT during the Migration

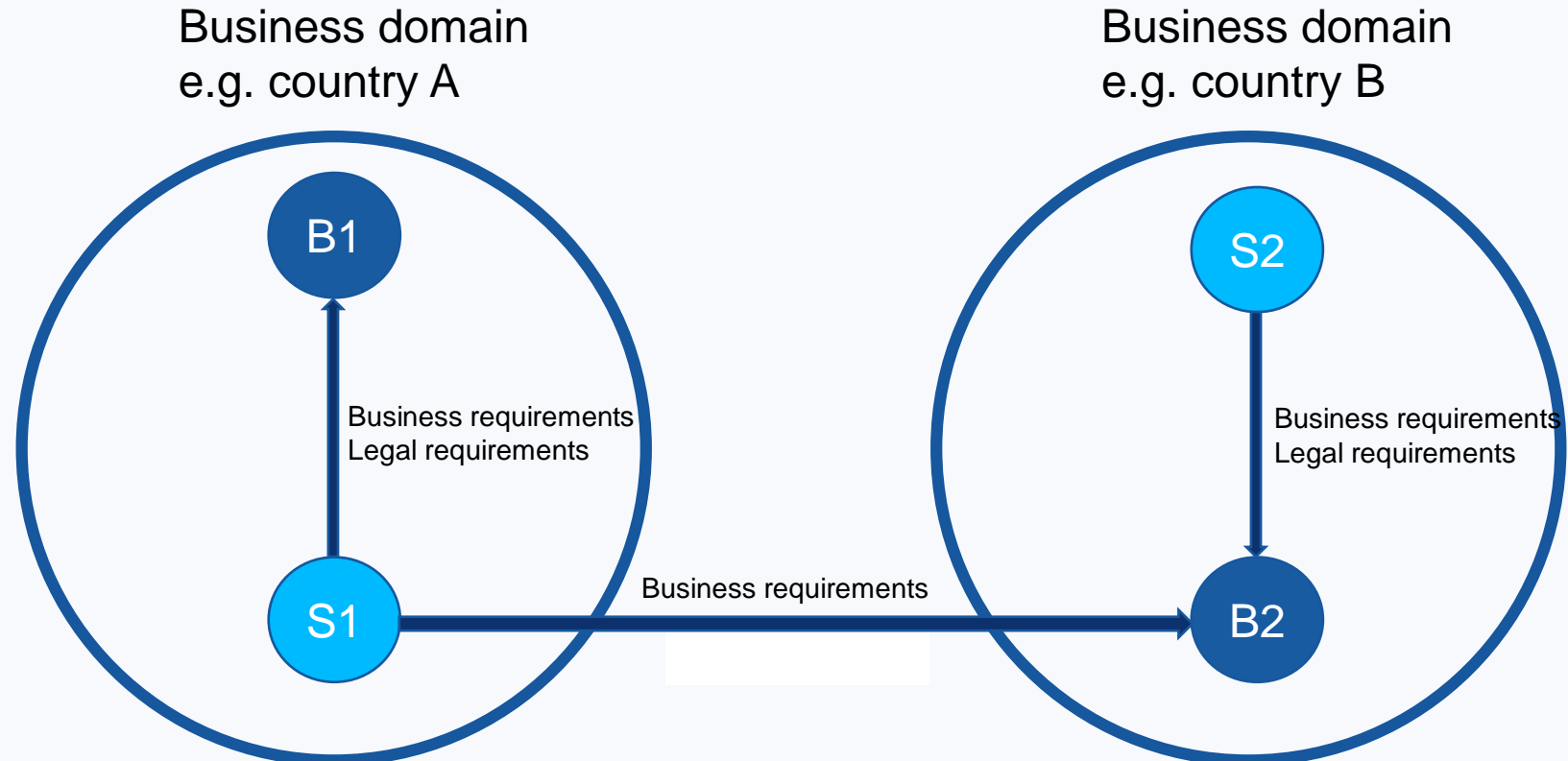


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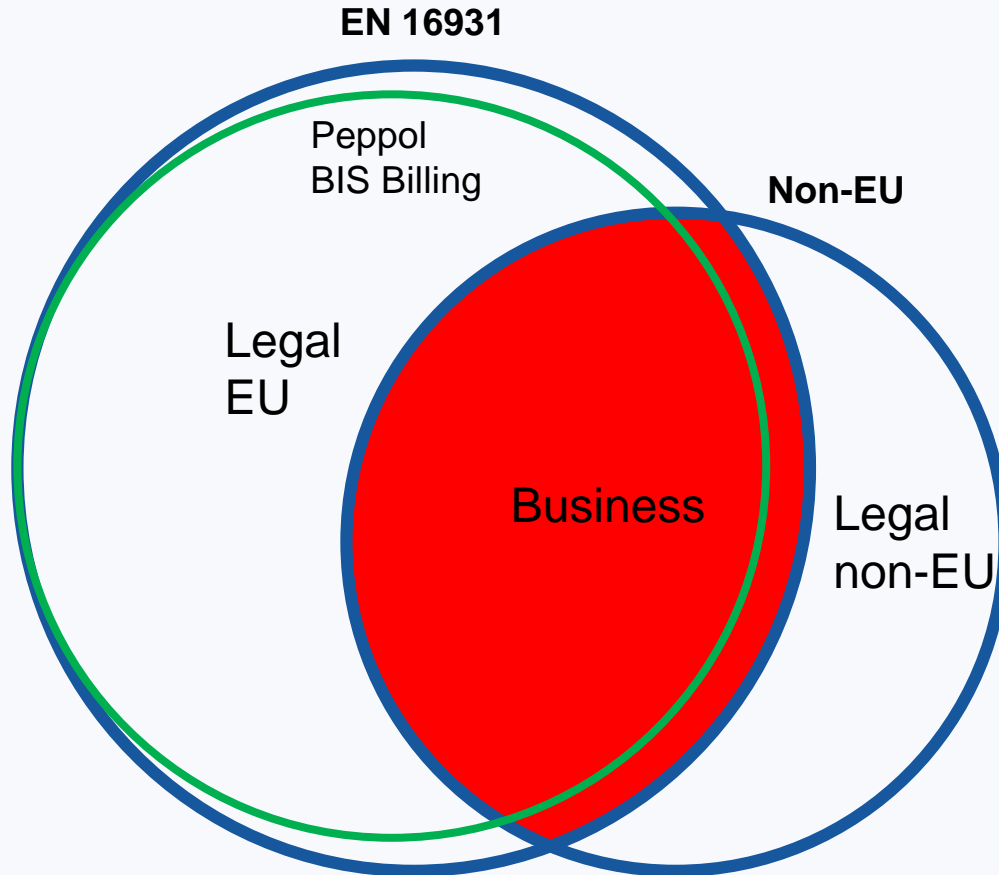
Post-Award (PoAC)

Invoice content drivers



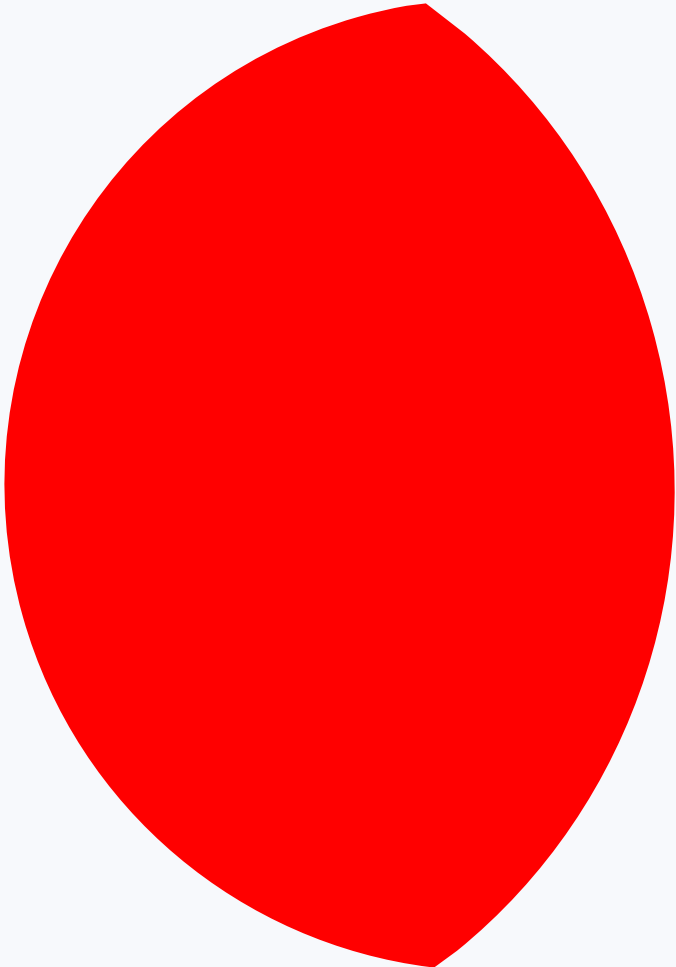
B1: Buyer 1
B2: Buyer 2
S1: Seller 1
S2: Seller 2

EN 16931 and the World



- Legal requirements
 - EU directives do not apply outside of EU.
- Business requirements
 - SG has adopted as-is.
 - AU-NZ adopts mostly as-is.
 - N-America BPC estimates about 90% applies.

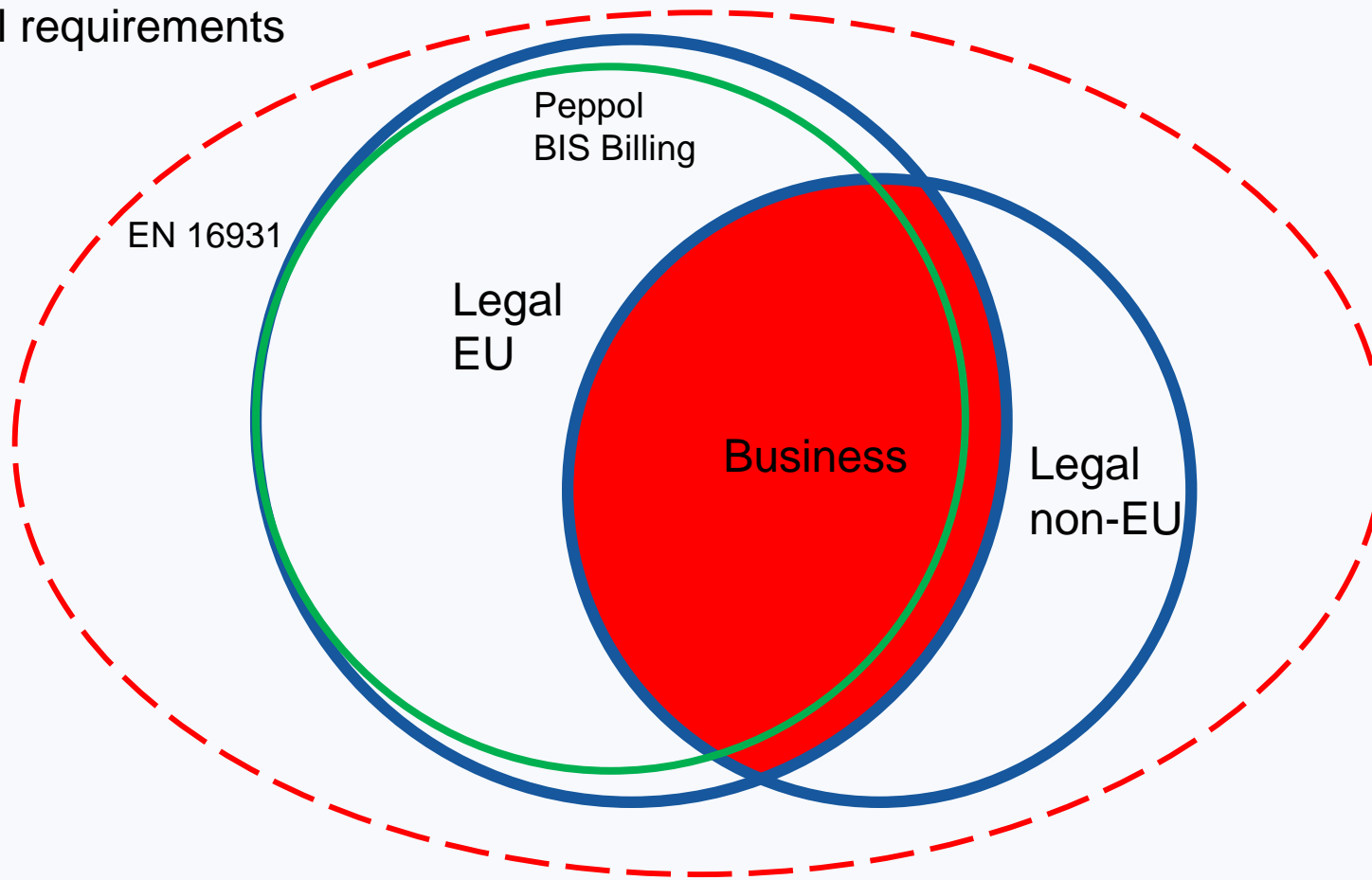
Shared: Fully defined



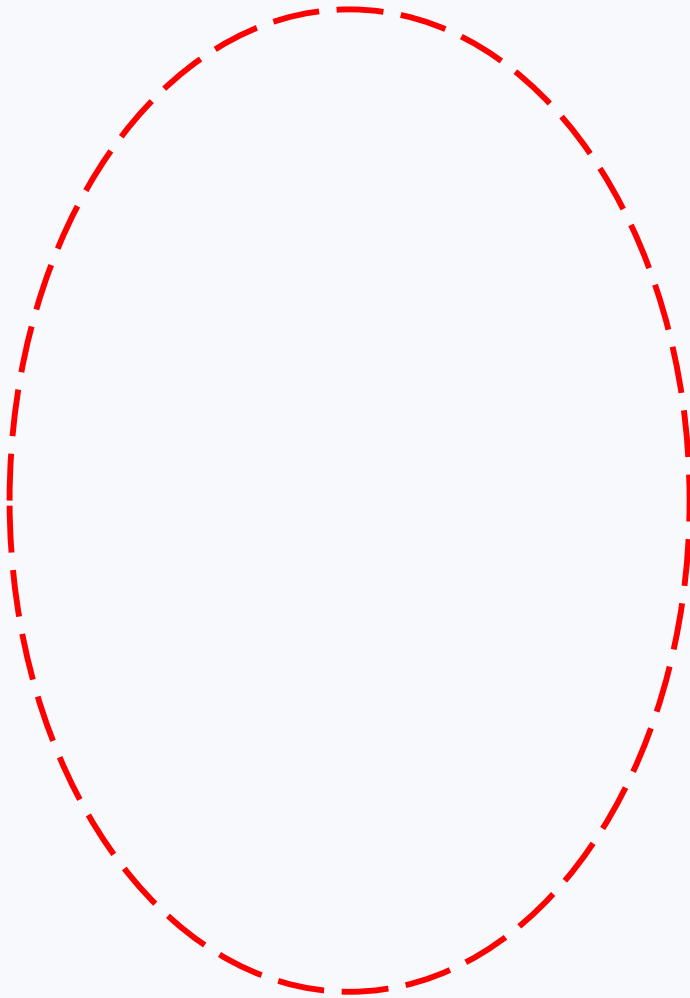
- Common for all domains.
- Minimum rules
- Sufficient for basic automations
 - Reading into ERP system
 - Booking into accounts
 - Order to invoice matching
- Key content
 - Trading parties
 - Total amounts.
 - Items and prices.
 - References

Generalize

Generalizing content aims to address all requirements

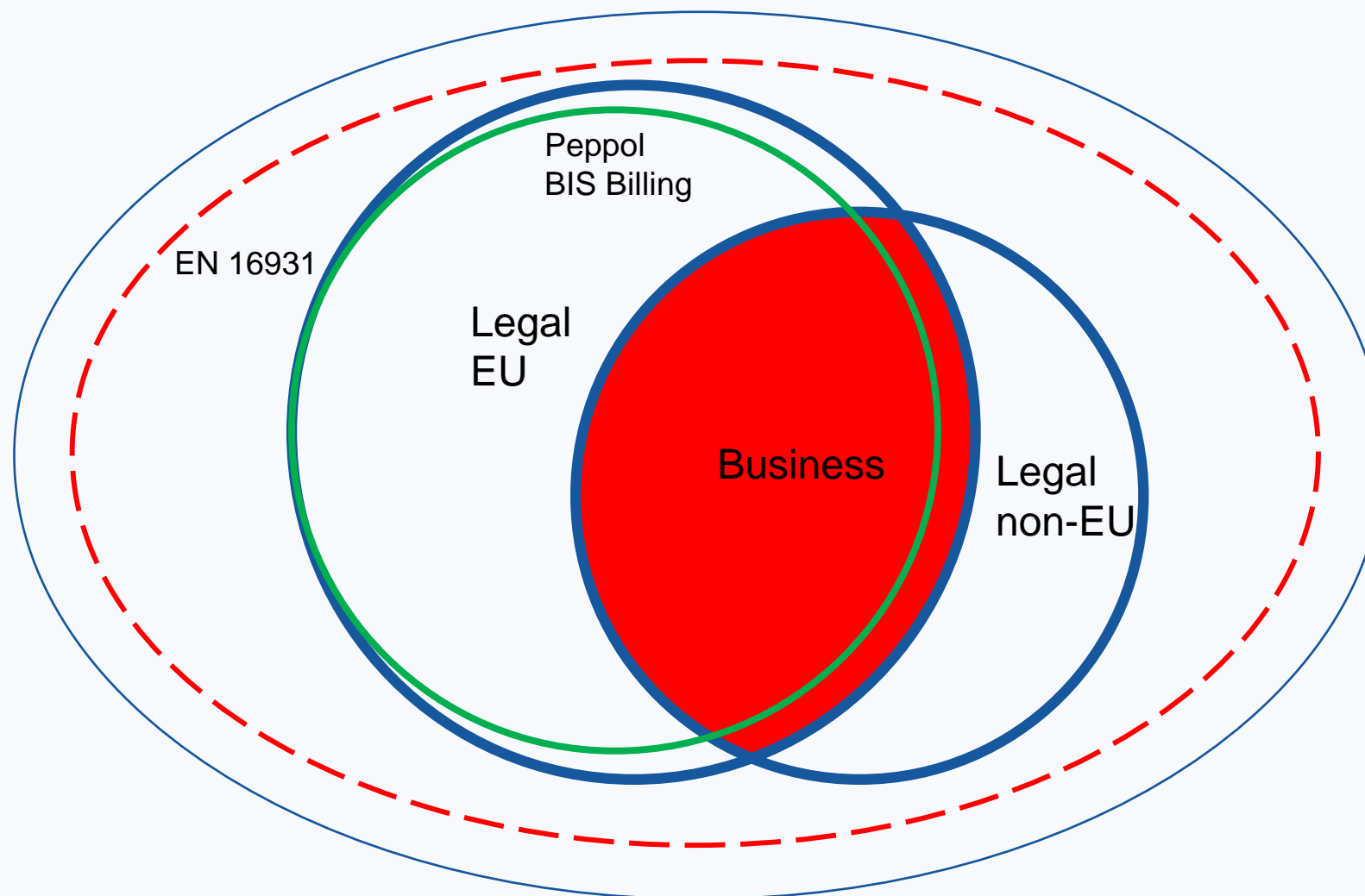


Aligned: Generalized → Specialized

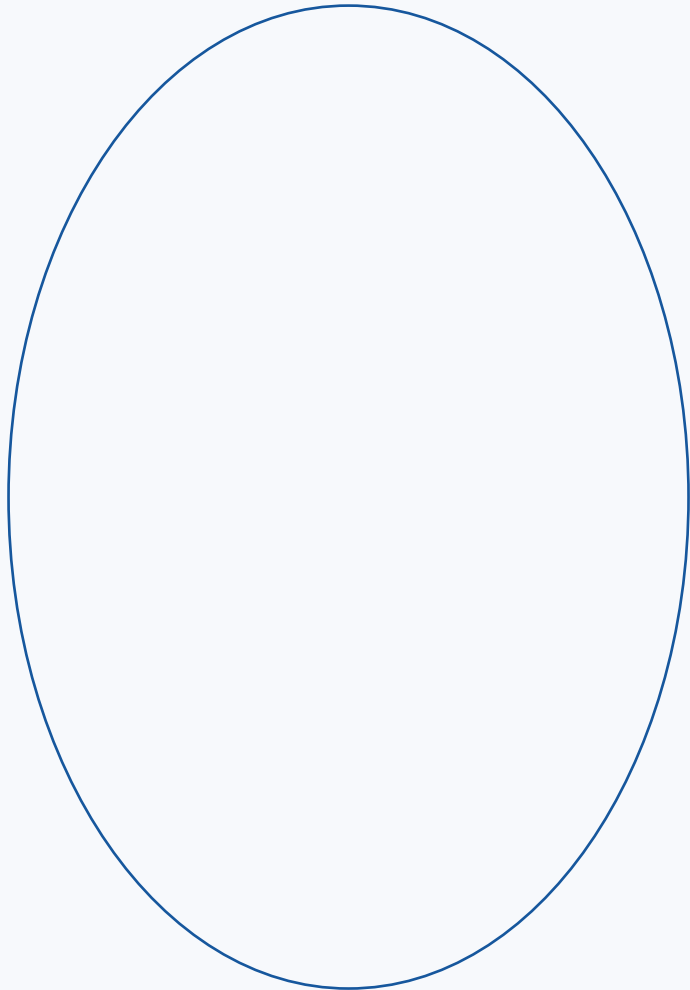


- Generalized
- Understood in general terms by all domains
- No rules
- Not optimized for automation.
- Can be specialized for domain specific automation and compliance.
- Key content.
 - Tax information.

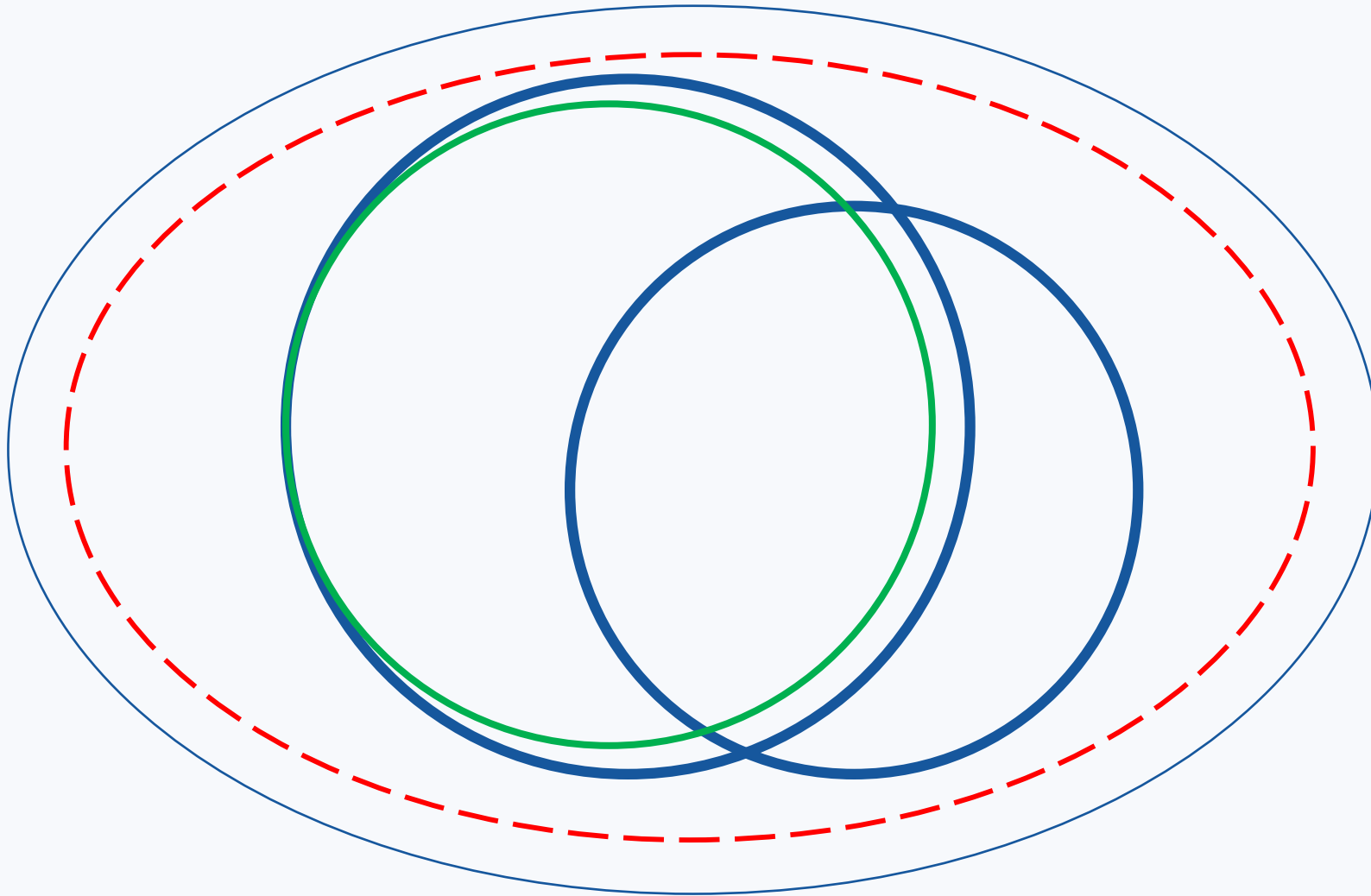
Other requirements



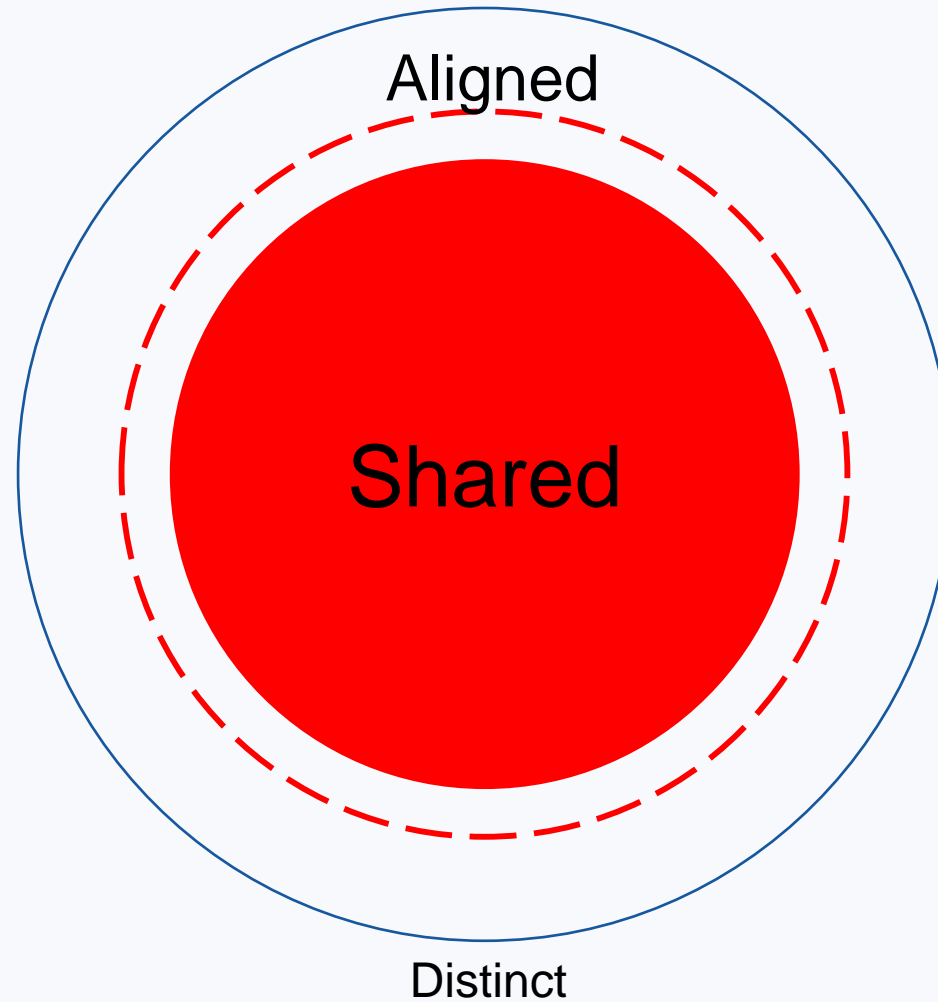
Distinct content



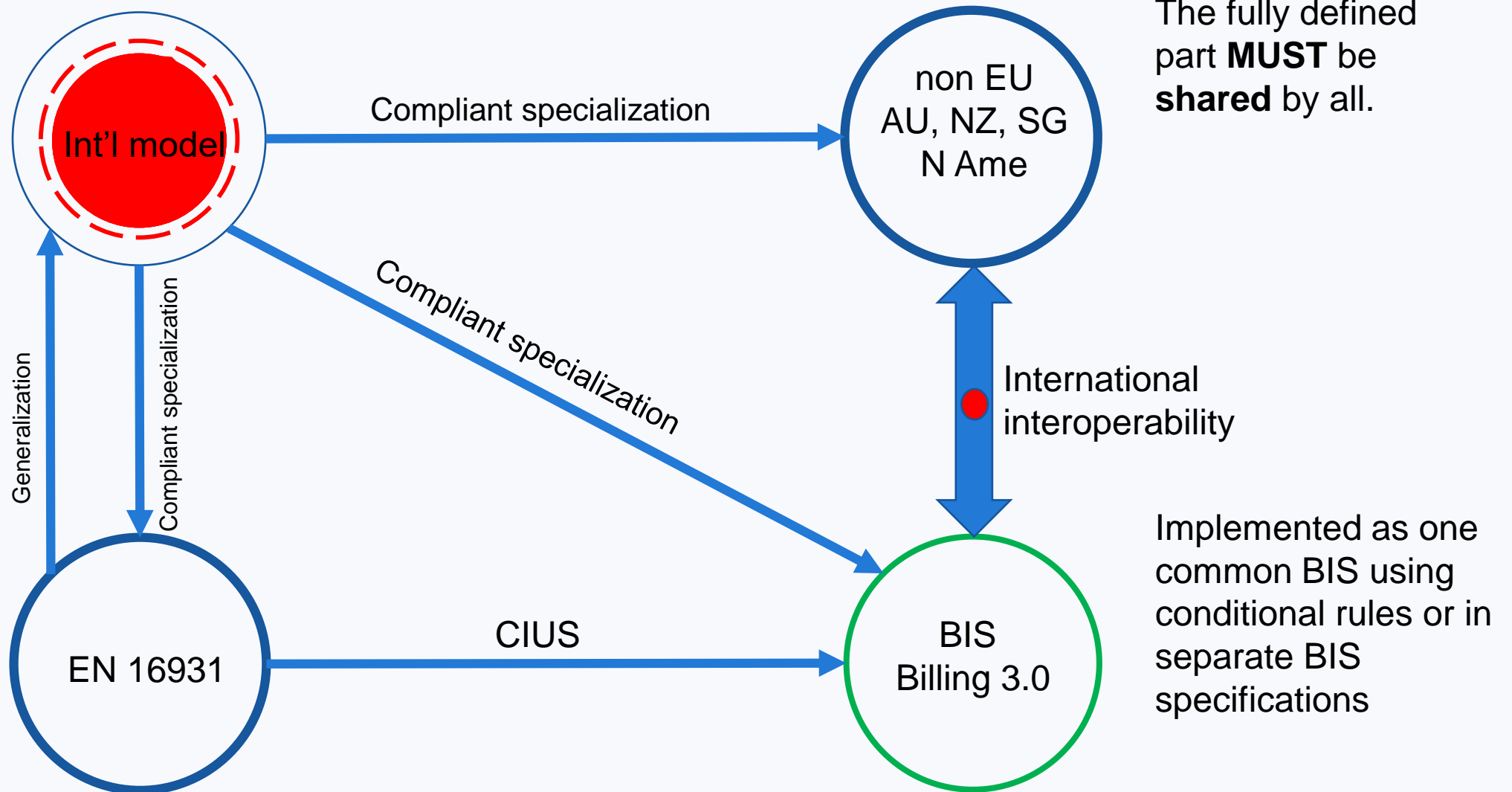
- Not commonly understood in all domains
- Syntax semantics apply
- Type of content
 - Content that is distinct for different domains
 - country
 - sector



Peppol International Invoicing Model



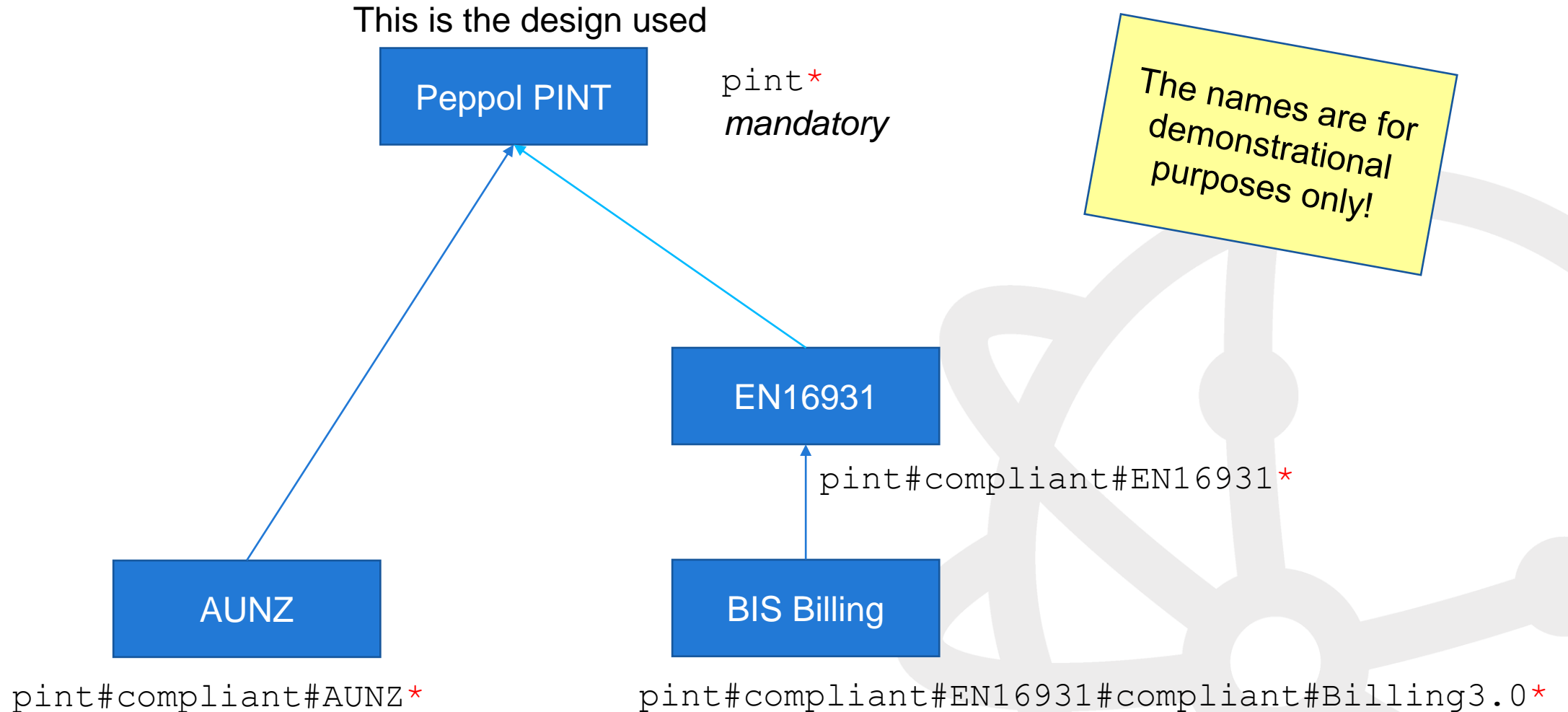
Interoperability



Receiving narrower versions

- It can be assumed that a receiver of a specification will accept and process any document that is based on a narrowed version of that specification.
 - this is in fact the underlying principle behind EN 16931 accepting CIUS as compliant implementation.
 - Using wildcard for registering receiving capacities.
- `pint*`

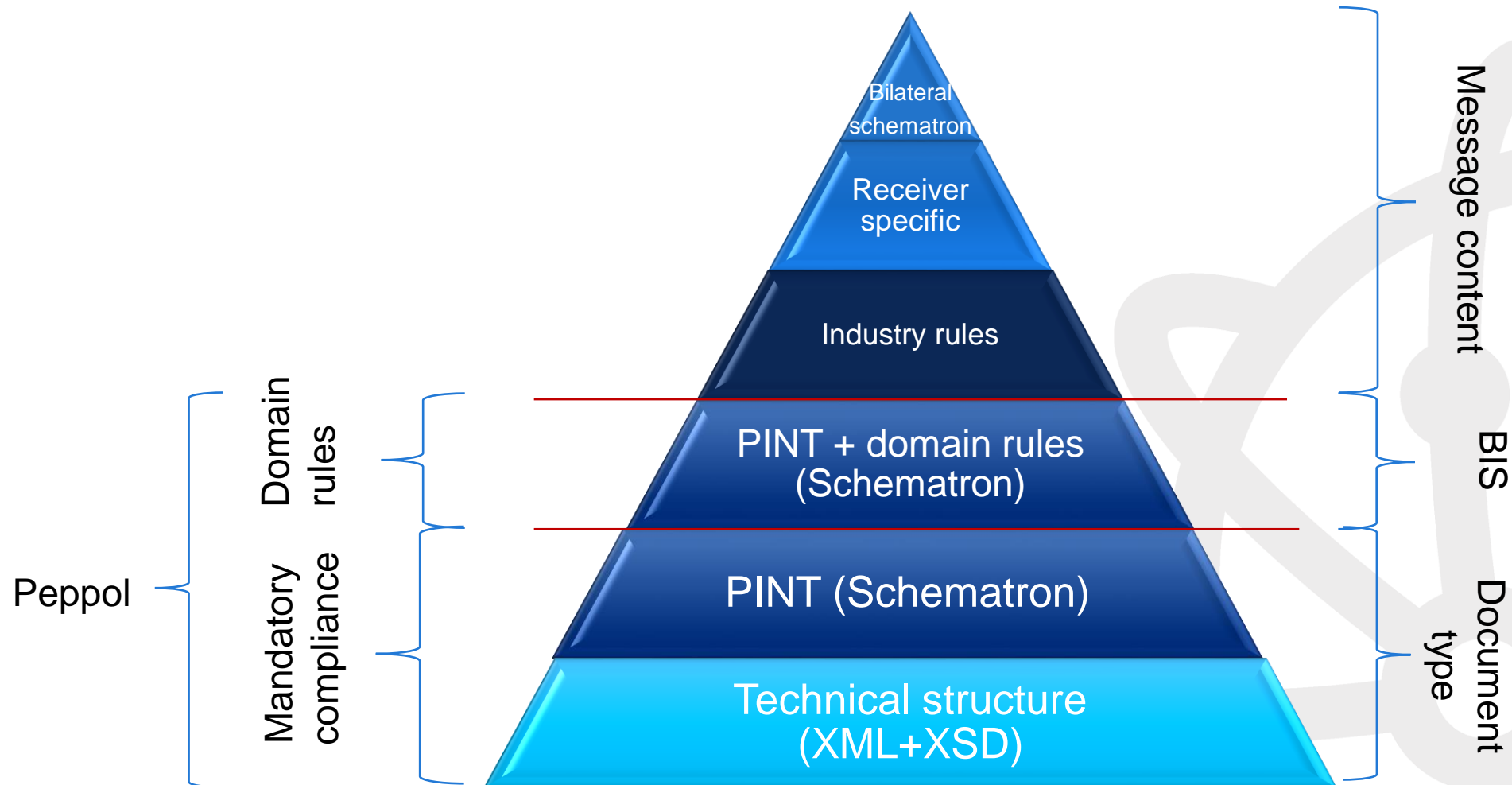
Customization id hierarchy



Validation rules

- Each invoice always identifies exactly what specification it is based on
 - Customization id in the invoice defines what validation rules shall be applied
 - E.g. `pint#compliant#EN16931#compliant#Billing3.0`
- When the seller creates an invoice he uses the BIS specification that is relevant for his business domain
- In PINT buyer and seller don't necessarily validate with same artefacts!

Layered validations



What the sender knows about the receiver

- C4 receiving capability as `pint*` means that receiver will
 - Receive any PINT compliant invoice
 - The sender knows that the receiver will process:
 - the Shared layer exactly as defined
 - the Aligned layer in general terms without considering restrictions
 - sender does not know what the receiver does with the Distinct
- If receiver has also registered e.g. `pint#compliant#aunz*`
 - The sender knows he will process Aligned content as defined in AU-NZ
 - Sender will know how Distinct content is processed as defined in AU-NZ

Credit Note (CN)

- Setup and syntax mapping of CN will follow the BIS Billing 3.0
- CN total amount can not be negative
- Supported processes of crediting are
 - Invoice can be fully or partially corrected with a CN
 - Invoice is fully or partially corrected with a negative invoice by using negative lines
- CN can be stand alone
- It is part of the shared functionality of `pint*` to be able to receive both a negative invoice or a CN
 - Register receiving capability for both syntax document types invoice and credit note

Main changes to the data model

- VAT related business terms are generalized to TAX
- Payment means business terms generalized or added to support most payment means
- Repetition is increased for payment means
- Added business terms supporting split payments
- Calculation rules only applied on invoice totals
- Decimals only restricted for the payable amount



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Migration

PINT Migration

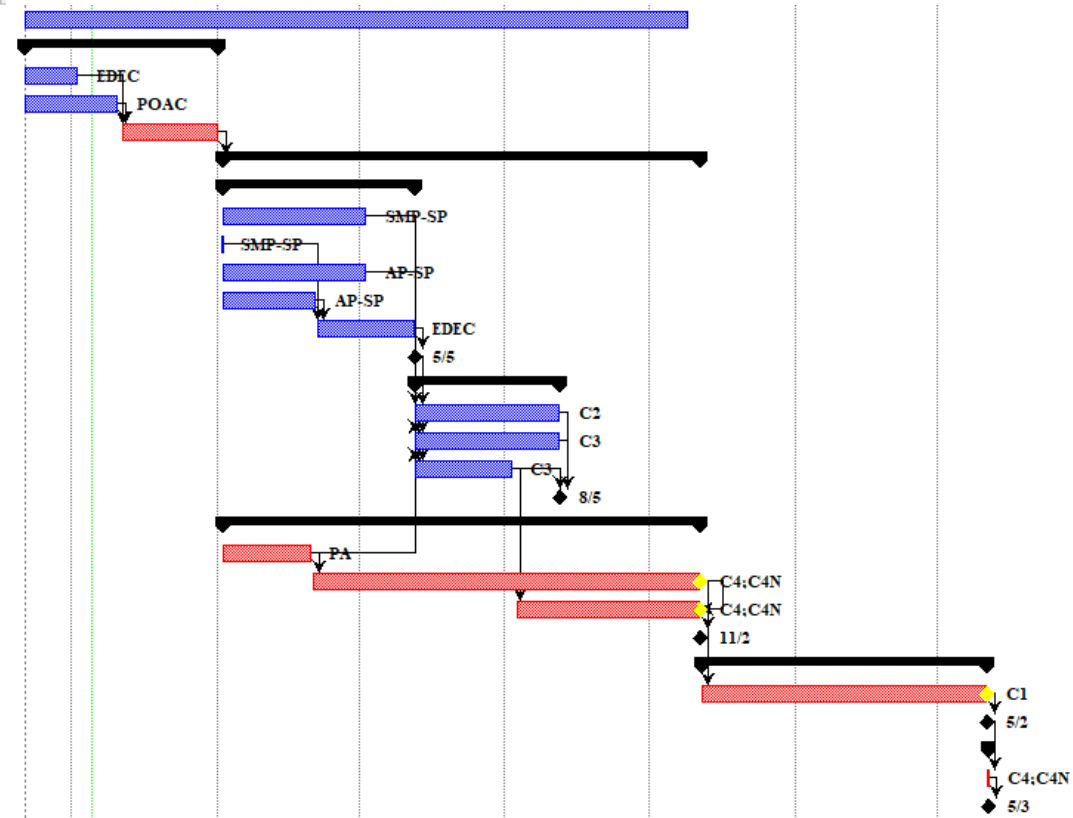
- Migration will be run as a project
- Joint effort of eDEC and PoAC
- Migration is much more detailed than any previous Peppol migration
- We will be providing more supporting materials

Impact Assessment – Extended Version

- Domain specifications need to be modified to be based on PINT - content expected to be unchanged
- SMP modified to allow wildcard receiving capabilities
- Sender (C1) changes Customization ID
- Sending AP (C2) modifies lookup to use closest match
- Receiving AP (C3)
 - When acting as AP – no change
 - When acting as Service Provider
 - add receiving capability
 - may need to modify service contracts with C4 to cover international invoices
- Receiver (C4), accept and process invoices from other domains
 - Automatic processing is ENABLED — NOT REQUIRED

Proposed time plan – draft version

	Ⓜ	Resource N...	Name	Predecessors	Duration
1			Dissemination work		300 days
2			Preparation		89 days
3		EDEC	DDTS specification development (Policy for use of identifiers)		25 days
4		POAC	PINT specification development		44 days
5			MC approval	3;4	45 days
6			Phase in period (A)	5	217 days
7			DDTS		88 days
8		SMP-SP	SMP Software Update		66 days
9		SMP-SP	phoss SMP Software Update		1 day
10		AP-SP	AP Software Update		66 days
11		AP-SP	Oxalis Software Update		44 days
12		EDEC	Update Peppol Testbed	11;9	44 days
13		MILESTONE	A1 — Peppol Testbed supporting PINT [Date A1]	12	0 days
14			DDTS and PINT		66 days
15		C2	C2 Upgrade AP Software (Implement capability for SMP wildcard matching)	10;13;20	66 days
16		C3	C3 Upgrade AP Software (Implement capability to support for receiving PINT docs)	10;13;20	66 days
17		C3	C3 Upgrade SMP Software (Add support for PINT* and PINT#x in SMP)	8;13	44 days
18		MILESTONE	A2 — C2 and C3 are ready	17;16;15	0 days
19			PINT		217 days
20		PA	Peppol Authority specifications		41 days
21		C4;C4N	C4 and C4N add capability to process PINT.	20	176 days
22		C4;C4N	C4 and C4N register capability to receive and process PINT.	21FF;17	83 days
23		MILESTONE	A3 — C4 PINT receive capability at 100%, PINT becomes mandatory.	22;21	0 days
24			Transition period (B)		129 days
25		C1	Send PINT instead of BIS3	22	129 days
26		MILESTONE	B — All invoices are exchanged as PINT	25	0 days
27			Phase out period (C-UNDEFINED)		1 day
28		C4;C4N	Remove BIS3 registrations (PLACEHOLDER)	26	1 day
29		MILESTONE	C — End of migration project	28	0 days



Migration activities (1/4)

- Dissemination work - Continuous support of migrating actors
- DDTS specification development (Policy for use of identifiers) - eDEC
- PINT specification development – PoAC
- Managing Committee approval
- SMP Software Update – Information to the market
- phoss SMP Software Update – Required for Peppol Testbed
- AP Software Update – Information to the marker
- Oxalis Software Update – Required for Peppol Testbed
- Update Peppol Testbed – Support member test efforts

➔ Milestone A1 — Peppol Testbed supporting PINT

Migration activities (2/4)

- C2 Upgrade AP Software - Implement capability for SMP wildcard matching
- C3 Upgrade AP Software - Implement capability to support receiving PINT docs
- C3 Upgrade SMP Software - Add support for `pint*` in SMP

➔ Milestone A2 — C2 and C3 are ready

Migration activities (3/4)

- Peppol Authority specifications – provide more narrow Invoice specifications based on PINT
 - C4 and C4N add capability to process PINT
 - C4 and C4N register capability to receive and process PINT
- ➔ Milestone A3 — C4 PINT receive capability at 100%, PINT becomes mandatory

C4N: new C4s that joined the Peppol network after the PINT migration started

Migration activities (4/4)

- Send PINT instead of BIS 3.0



➔ Milestone B — All invoices are exchanged as PINT

- Remove BIS 3.0 registrations (PLACEHOLDER) – undefined

➔ Milestone C — End of migration project

Lead times

- Next step is for OpenPeppol Managing Committee to approve implementation
- 18 month implementation project following approval
 - 2 months for PA's to adapt domain specific specifications
 - 7 months for SMP's and AP's to implement necessary changes
 - 6 to 8 months for C4 to implement ability to receive international invoices
 - Followed by change of Mandatory Principle
 - 6 months for C1 to change sending to PINT
 - No position on deprecation of current specs



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Questions?



THANK YOU!

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