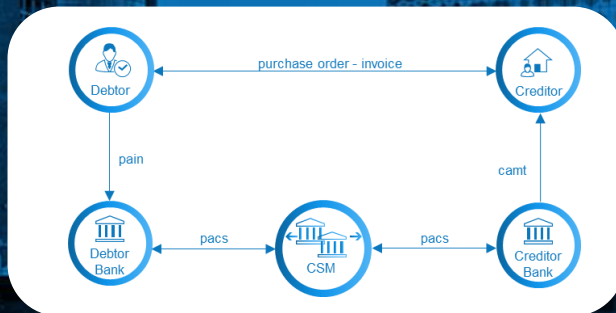


The Beauty of ISO 20022

“All you need to know*” – from the history of this standard to the future challenges in crypto currencies towards a digital assets payments leg using ISO 20022



Anja Kamping and Dr. Mario Reichel, March 24th, 2021

* all that fits into a 30 minutes overview

-
1. Introduction PPI AG
 2. Basic overview - ISO20022
 3. Basic overview - Digital Currencies



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1. Introduction PPI AG
 2. Basic overview - ISO20022
 3. Basic overview - Digital Currencies



A low-angle, black and white photograph of a ship's mast and rigging against a cloudy sky. A horizontal blue band is overlaid across the center of the image, containing the main title text in white.

Consulting and software development for financial institutions and insurance companies

PPI AG has been working successfully as a consulting and software company for financial institutions, insurance companies and financial service providers for over 30 years. As a family-owned stock company with stable growth, we combine business expertise and technological know-how to implement projects in a competent and uncomplicated manner. With our standard product portfolio, we occupy a leading market position in the European payments sector. More than 700 employees are entirely focussed on our customers' success.



Consulting and software development for financial institutions, insurance companies and financial service providers

"Inspired by Simplicity"



**Consulting
FINANCIAL INSTITUTIONS**

"Trusted advisor & innovation driver for financial institutions of the future"



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"Think digitisation. Master transformations."

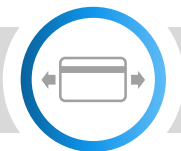


**Products & Consulting
PAYMENTS**

"Excellence in payments"

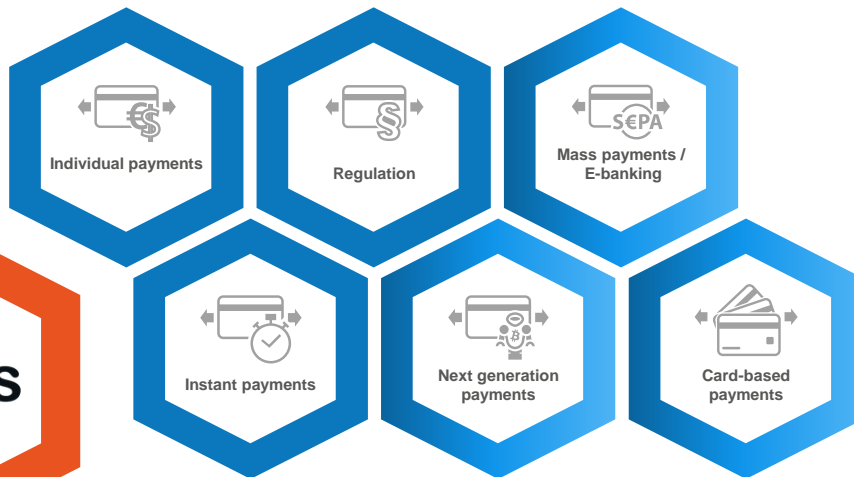


The **Collaboration Lab** of PPI AG for cross-sector/technology-driven services



Payments excellence

Products

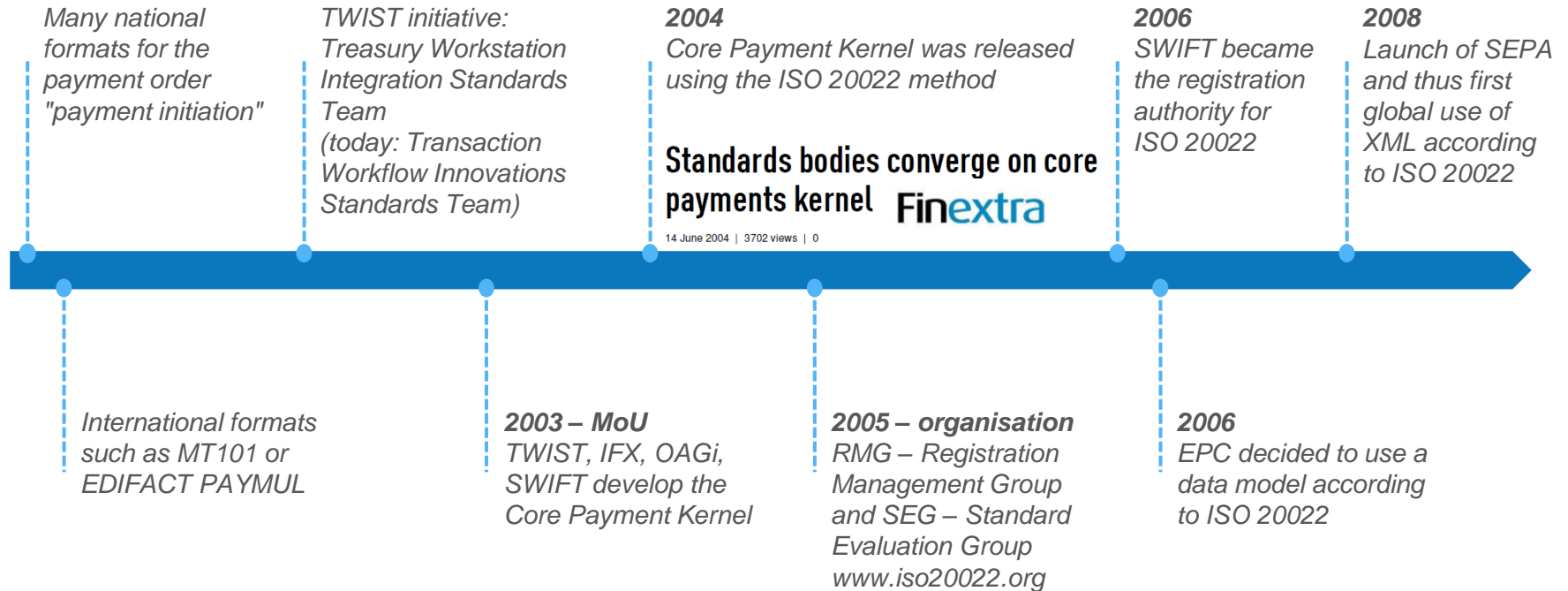


Consulting Payments

-
1. Introduction PPI AG
 2. **Basic overview - ISO20022**
 3. Basic overview - Digital Currencies

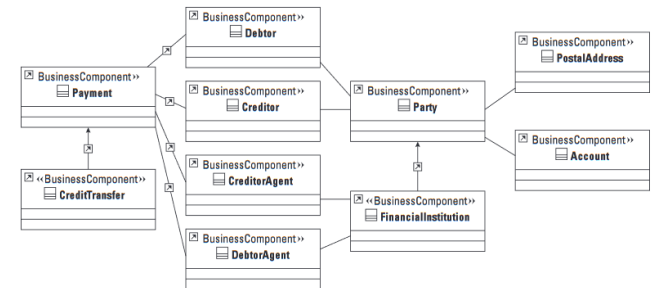


History of data formats



What is ISO 2022?

- ISO 2022 implements the **idea of a globally uniform standard** for all types of financial transactions between financial institutions, market infrastructures and end customers as well as regulatory authorities that enable seamless communication and interoperability (STP)
 - Business areas: payments, securities, trade services, cards and FX
- ISO 2022 does not define the message standard itself but specifies **rules and a methodology for how messages are to be developed** – a standard for standards
 - Provision of a **central repository (at iso2022.org) with all defined messages** (Business Process Catalogue and Data Dictionary)
 - Common language for applications and people
 - The approval and/or release is performed by appropriate ISO committees – RMG, SEG, TSG
 - **One display type** is based on **XML** (Extensible Markup Language), others are possible



The role of SWIFT

ISO 20022 is

Supported by SWIFT

- SWIFT assumes the role of the registration authority (RA) – as a service provider for the community

A concept for the development of standards

- A single standardisation approach (methodology, strict procedure) to be used by all financial standards initiatives
- A central financial repository

Freely and openly available – task of the RA

- More than 650 messages are available free of charge on www.ISO20022.org
 - Not just payments
- 20+ organisations are involved alongside SWIFT

Not mandatory

- SWIFT is not mandating a migration
- Communities decide if and when they want to migrate
 - This also applies esp. to new releases

Not just XML

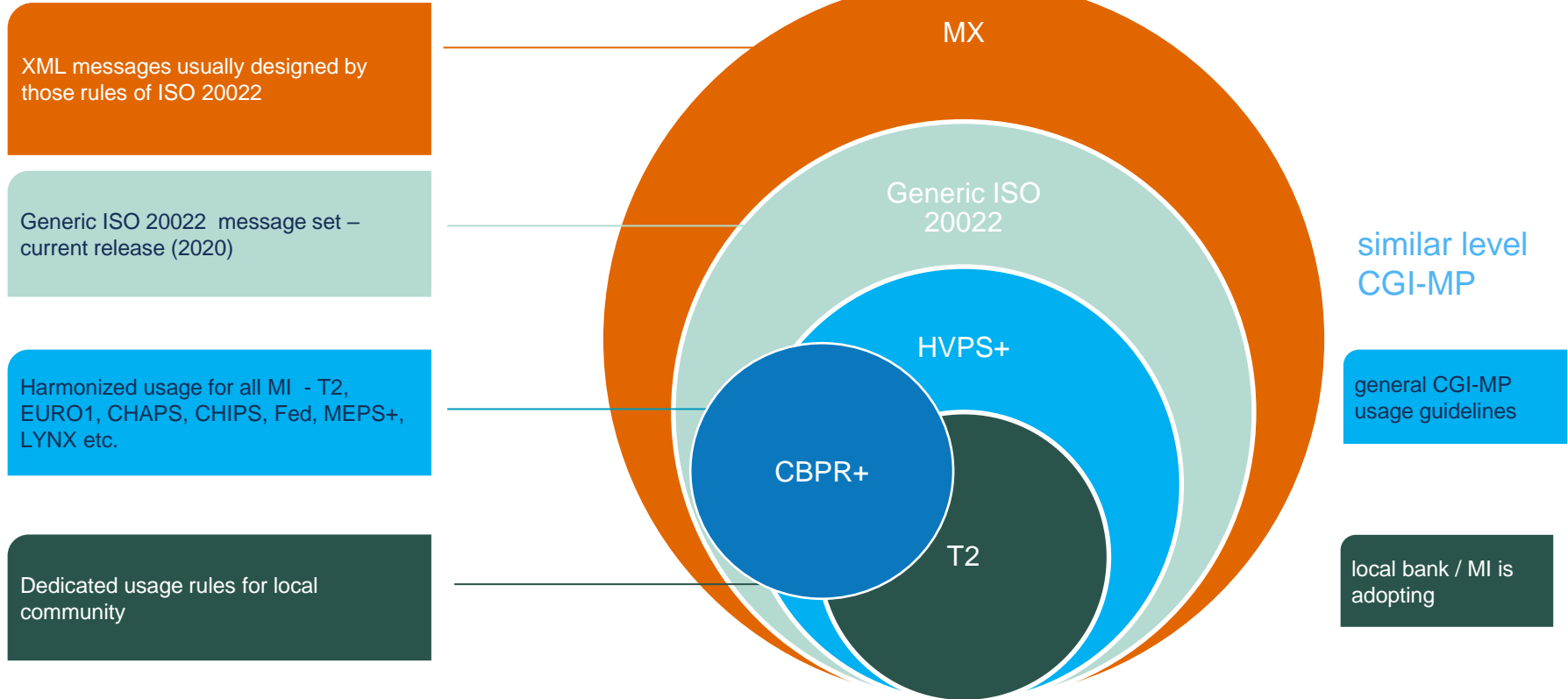
- ISO 20022 is independent of network and syntax
- ASN.1 is another available syntax

Also a basis for API

- in order to support non file-based communication consistently to the ISO 20022 data model
- representation via JSON next to XML

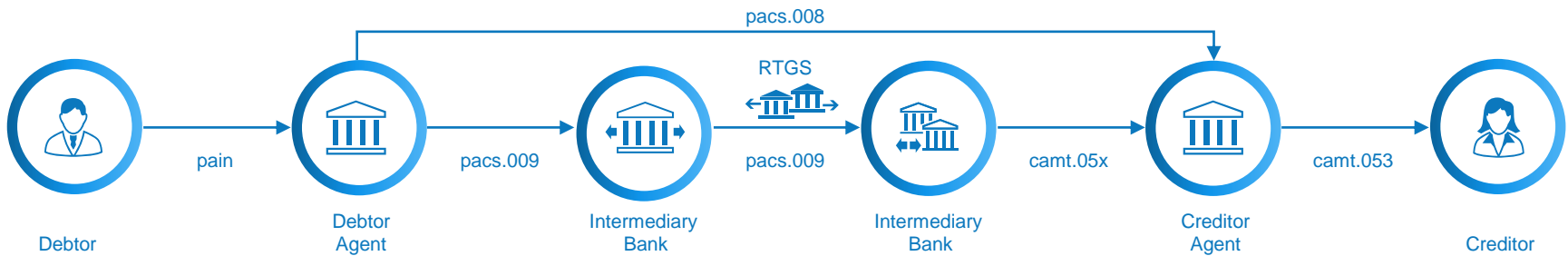
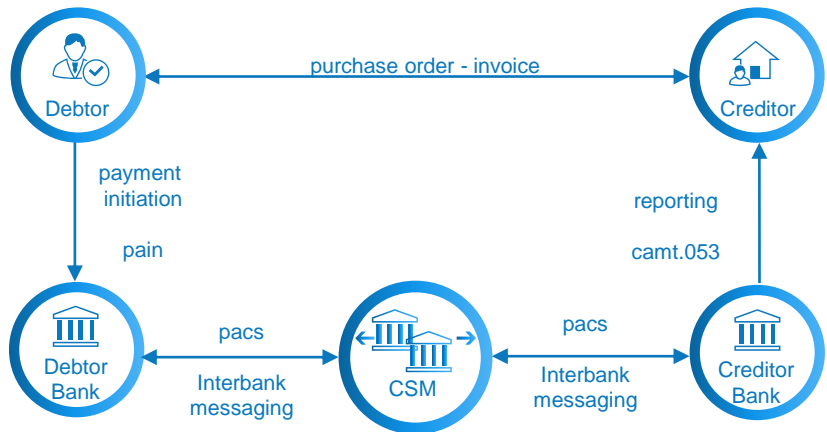
Standards are created globally and used locally

ISO 2022 –many harmonizing initiatives HVPS+, CBPR+ - new: IP+ - first: CGI-MP



* based on SWIFT

ISO 20022 and the 4-Corner-Model



Messages in XML according ISO 20022

pain.001.002.03 (German community definition 2010)

Version of 2009

Variant Die Deutsche Kreditwirtschaft (DK) 2010

Business purpose

pain.001 = Customer Credit Transfer Initiation
 pain.008 = Customer Direct Debit Initiation
 pain.002 = Payment Status Report (PSR)

Business Domain

acmt = account management	head = headers	seca = securities management
admi = administration	pacs = payments clearing & settlement	sesa = securities settlement
camt = cash management	pain = payments initiation	setr = securities trade
colr = collateral	reda = reference data	tsin = Trade Services Initiation
trck = gpi tracker – neu für ISO 20022 Release 2021		

SEPA: pain, pacs, camt
TARGET2: many camt in A2A
T2S: acmt, admi, camt, colr, reda, seca, sese
SCL: rocs

The Beauty of ISO 2002 – pain

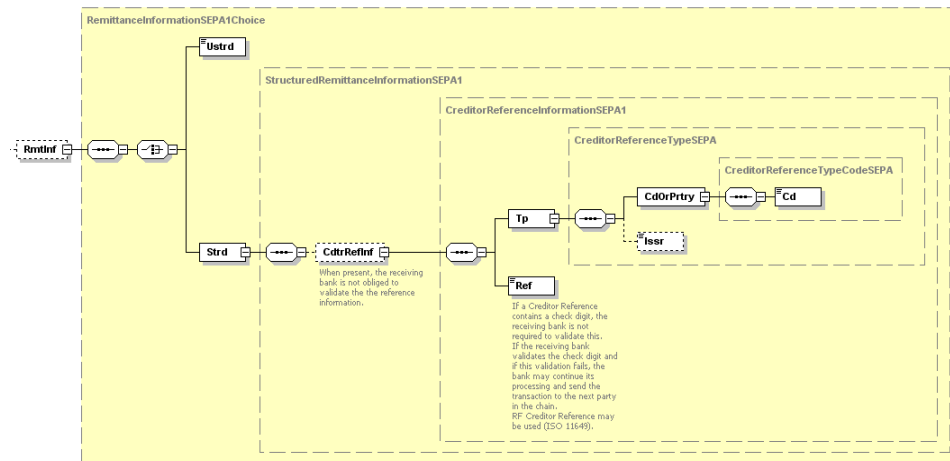


Identification \ OrganisationIdentification \ BIC
Other \ Identification \ SchemeName

```
<InstrId>494931/DEV</InstrId>
<TxId>ABCD-XYZ</TxId>
<EndToEndId>NOTPROVIDED</EndToEndId>
```

```
<UETR>360f1e65-90e0-44d5-a49-
a92b55eb3025f</UETR>
```

```
<Nm>Cuba Sports Bar & Grille</Nm>
<PstlAdr>
  <StrtNm>Ocean Drive</StrtNm>
  <BldgNb>1234</BldgNb>
  <PstCd>90099</PstCd>
  <CtrySubDvsn>CA</CtrySubDvsn>
  <Ctry>US</Ctry>
</PstlAdr>
```



The Beauty of ISO 20022 – pain – a practical use case



A single credit transfer shall settle invoices, credit note and a discount

```

<Purp>
  <Prtry>P1002</Prtry>
</Purp>
<RmtInf>
  <Strd>
    <RfrdDocInf>
      <Tp>
        <CdOrPrtry>
          <Cd>CINV</Cd>
        </CdOrPrtry>
      </Tp>
      <Nb>20200130-1072-01</Nb>
    </RfrdDocInf>
    <CdtrRefInf>
      <Tp>
        <CdOrPrtry>
          <Cd>SCOR</Cd>
        </CdOrPrtry>
      </Tp>
      <Ref>PAY1245ABC</Ref>
    </CdtrRefInf>
  </Strd>
  <Strd>...
  
```

Dedicated field for Payment Purpose Code, required by Indonesian Regulator

Code to show payment is against a "Commercial Invoice"

Buyer's unique reference to the invoice in their ERP

Supplier's unique Structured Communication Reference of the invoice

```

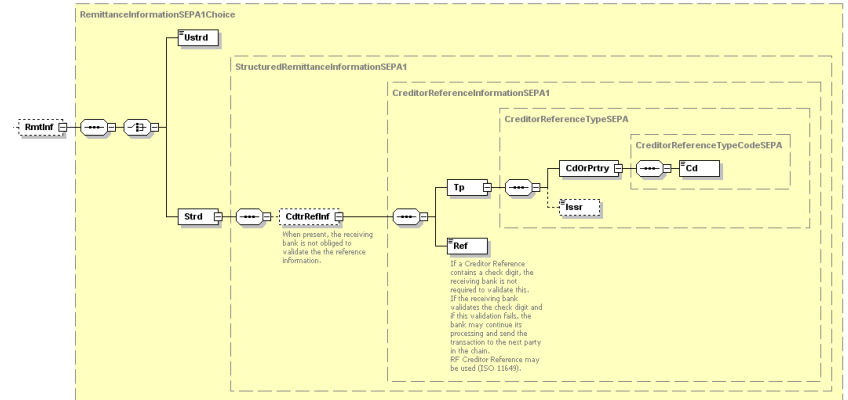
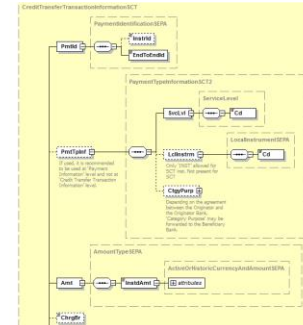
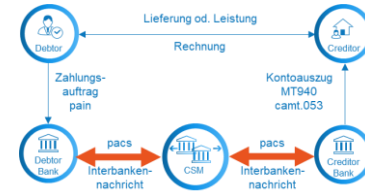
...
<Strd>
  <RfrdDocInf>
    <Tp>
      <CdOrPrtry>
        <Cd>CINV</Cd>
      </CdOrPrtry>
    </Tp>
    <Nb>20200417-4214-01</Nb>
  <LineDtls>
    <Id>
      <Nb>002</Nb>
    </Id>
    <Desc>Robusta Grade 3, January 2020 shipment</Desc>
    <Amt>
      <AdjstmntAmtAndRsn>
        <Amt>USD1200</Amt>
        <CdtDbtInd>DBIT</CdtDbtInd>
        <Rsn>SVNR</Rsn>
      </AdjstmntAmtAndRsn>
    </Amt>
  </LineDtls>
  ...
  
```

Second Line Item from invoice

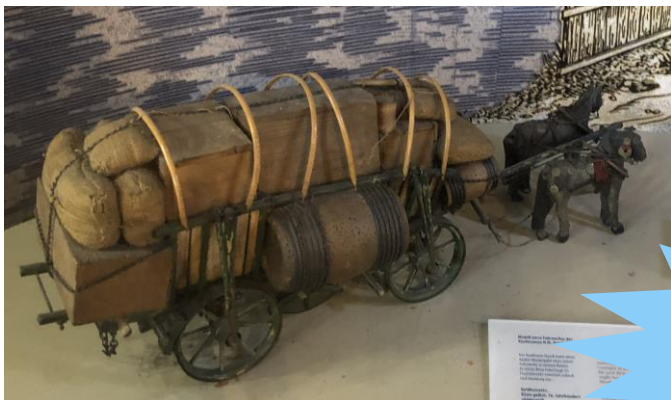
Adjusted amount

Reason for adjustment

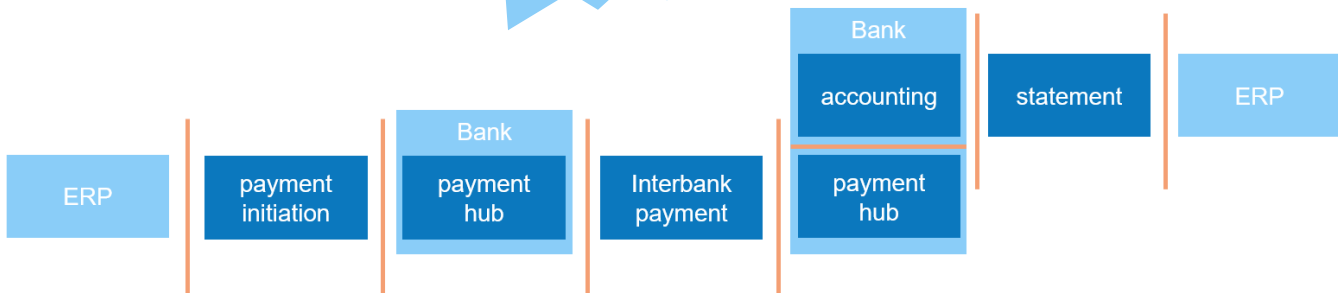
The Beauty of ISO 20022 – pacs



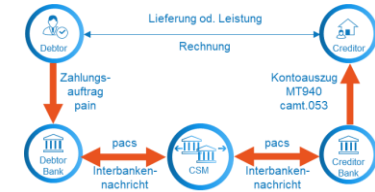
The Beauty of ISO 20022 – camt



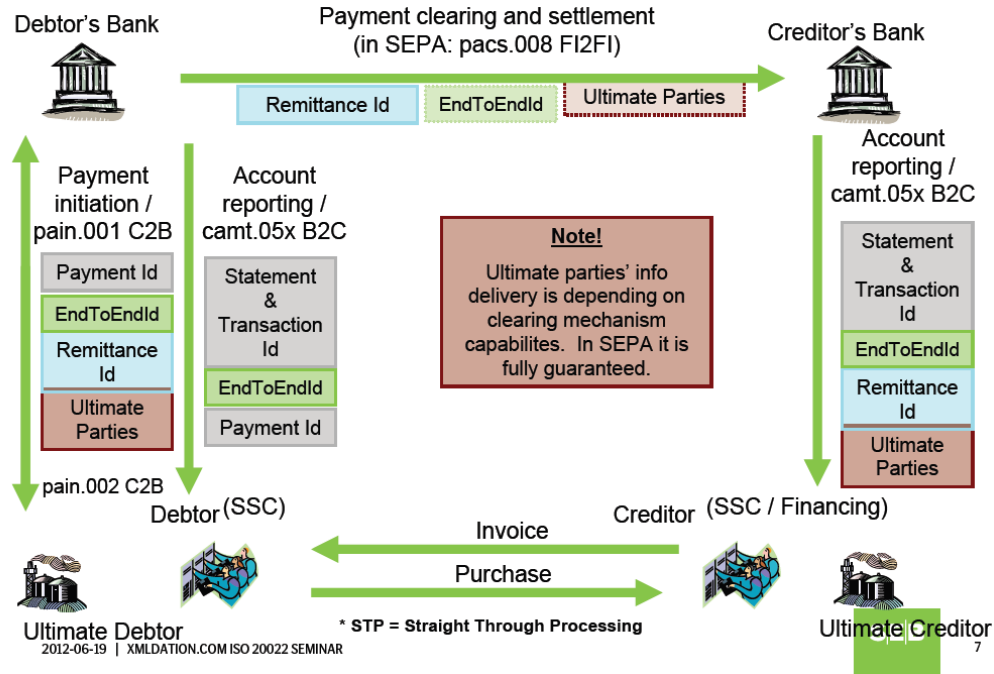
too many translations



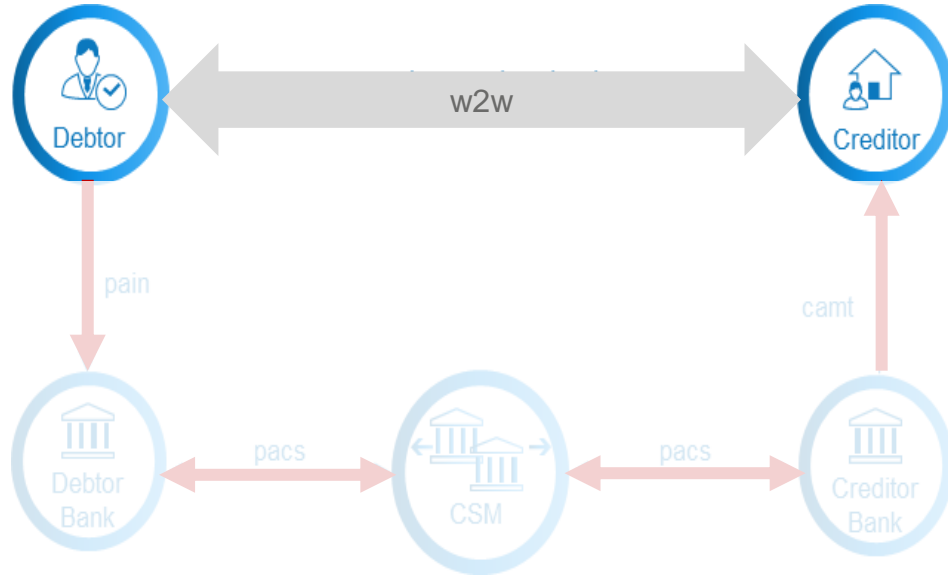
The Beauty of ISO 2002 – pain - pacs – camt



Vision of EDI-Loop becomes reality with „rich data“ and seamless STP



How to pay by Crypto Currencies in a b2b environment?

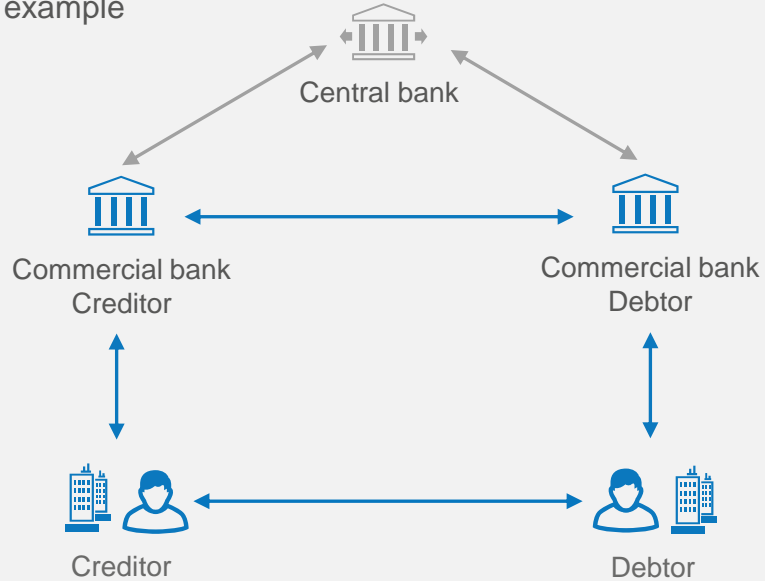


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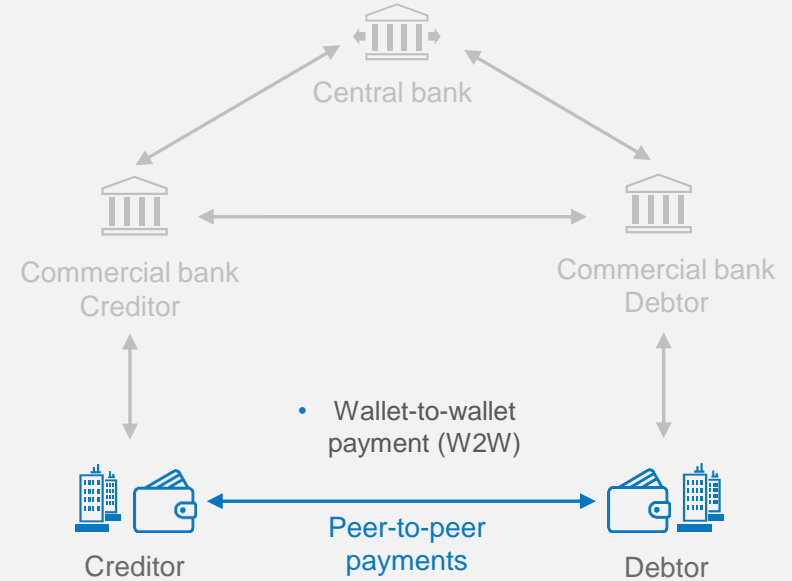


Cryptocurrencies enable peer-to-peer payments without intermediaries.

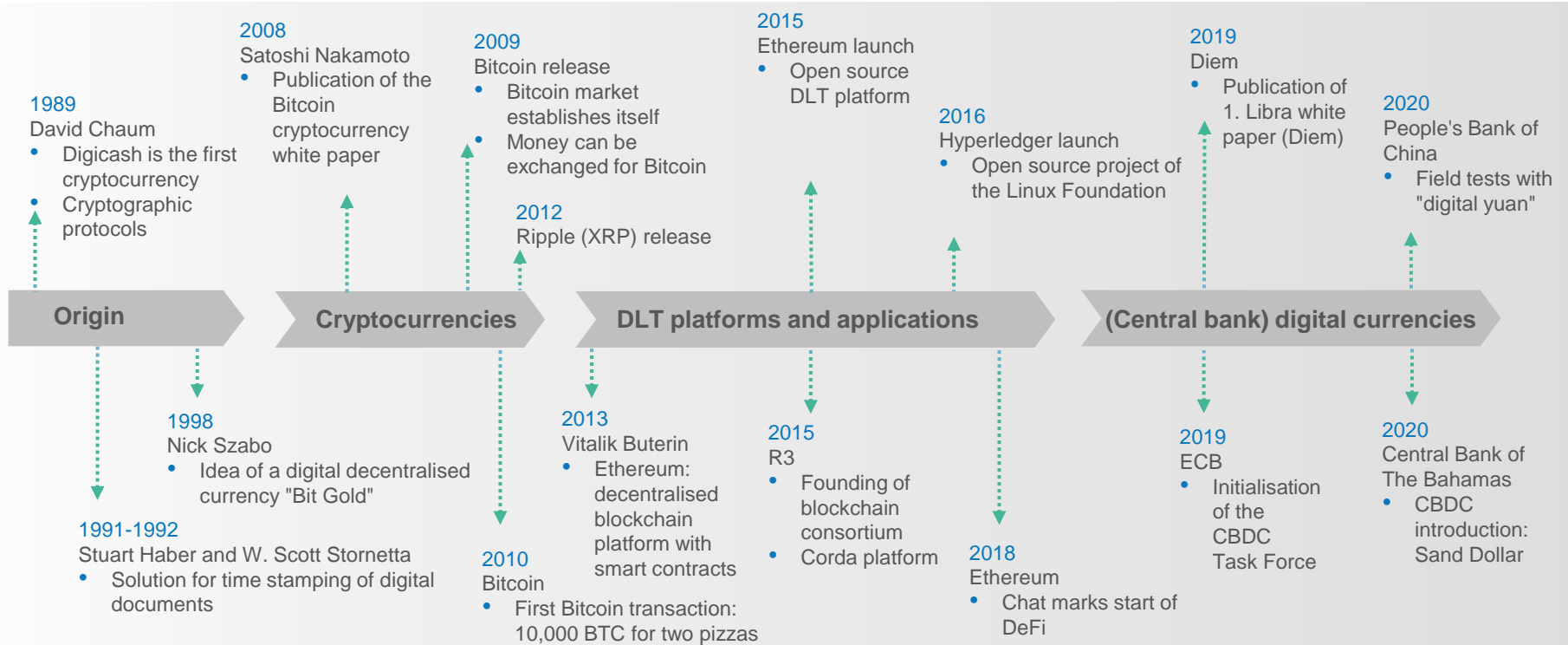
Conventional payments in the four corner model: an example



Cryptocurrency payments: an example



It all began with Bitcoin? A historical overview as introduction.



*Decentralised Finance (DeFi)

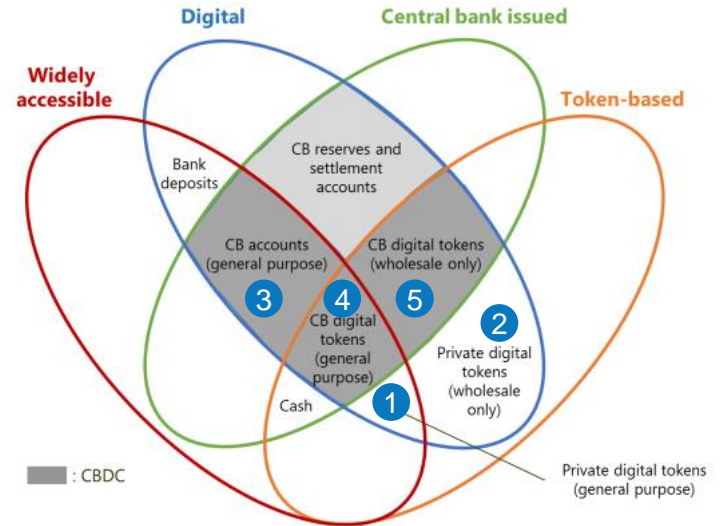
**Central Bank Digital Currencies (CBDC)

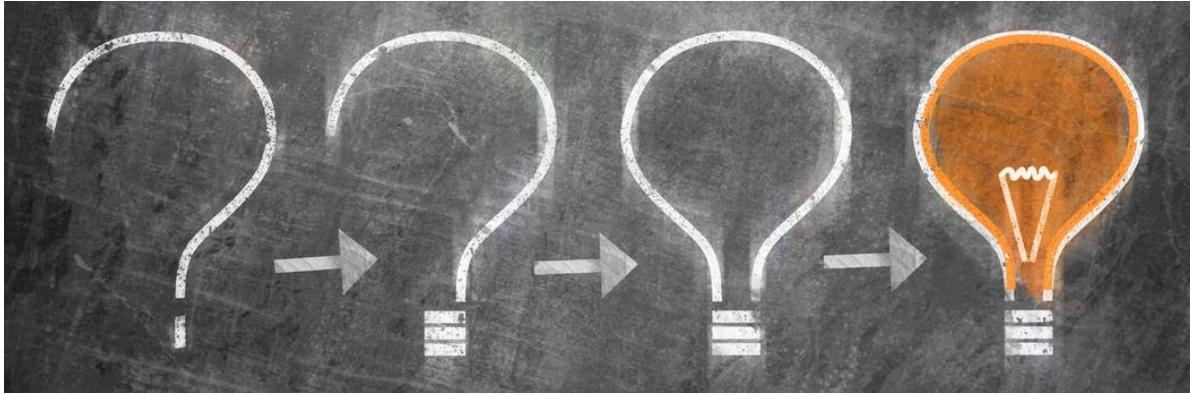
Central bank digital currencies are NOT cryptocurrencies

Difference between CBDCs and cryptocurrencies

- 1 **Public cryptocurrencies**
 - Issued by private sector
 - Example: Bitcoin
- 2 **Permissioned cryptocurrencies/stablecoins**
 - Issued by private sector
 - Example: JP Morgan Coin, Diem
- Digital central bank money (CBDC)**
 - Issued by central bank
- 3 **Account-based and retail/general purpose (access for private households and companies also)**
- 4 **Token-based and retail/general purpose (access for private households and companies also)**
- 5 **Token-based and wholesale (access only for financial institutions)**

Digital money flower







Dr. Mario Reichel
Managing Consultant

T +49 69 2222 942 - 4263
M +49 151 1400 9351
mario.reichel@ppi.de
www.ppi.de

PPI AG
Wilhelm Leuschner Str. 79
60329 Frankfurt am Main



Anja Kristina Kamping
Senior Consultant

T +49 40 227433 - 1748
M +49 160 9798 3948
anja.kamping@ppi.de
www.ppi.de

PPI AG
Moorfuhrweg 13
22301 Hamburg