

# e-Invoicing

[Process optimisation through advanced and qualified electronic signatures]

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BU Transaction Security



# Why e-Invoicing ?

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- Reinforced competition through globalization
- Considerable expenses-pressure
- most business-processes are optimized
- Considerable investments necessary to improve the automation-degree in the production about few percentage points
- Saving-potentials for example in
  - → Finance
  - → Marketing
  - → Human Ressources
  - → Purchase
  - → Logistics
  - → Sales

# Facts

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- 80 - 90% Invoices based on paper
- average delay of the entrance up to the decontrol of a bill amounts to 6,5 days
- Up to 20 co-workers are employed for the data capture of bills
- 71% don't scan the Invoices at the beginning
- Only 36% companies use a workflow system
- approximately 5% mistake-quota with the manual data capture

reference: Study "Automatisierte Rechnungseingangsbearbeitung" by interim 2000

# facts

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- Average costs for paper based invoices
  - The cost of an invoice seems the greatest incentive for the biller. A paper invoice actually costs between € 1.13 and € 1.65. EBPP reduces this amount considerably to a figure between € 0.28 and € 0.47

reference:

[http://europa.eu.int/comm/taxation\\_customs/publications/reports\\_studies/taxation/final\\_report\\_pwc.pdf](http://europa.eu.int/comm/taxation_customs/publications/reports_studies/taxation/final_report_pwc.pdf)

- in Germany the top 1000 companies annually can save up to a half billion Euro
  - if the companies changes to e-Billing / e-Invoicing

reference: E-Finance Lab, Frankfurt/M. 2003

-  Savings possible by e-Invoices

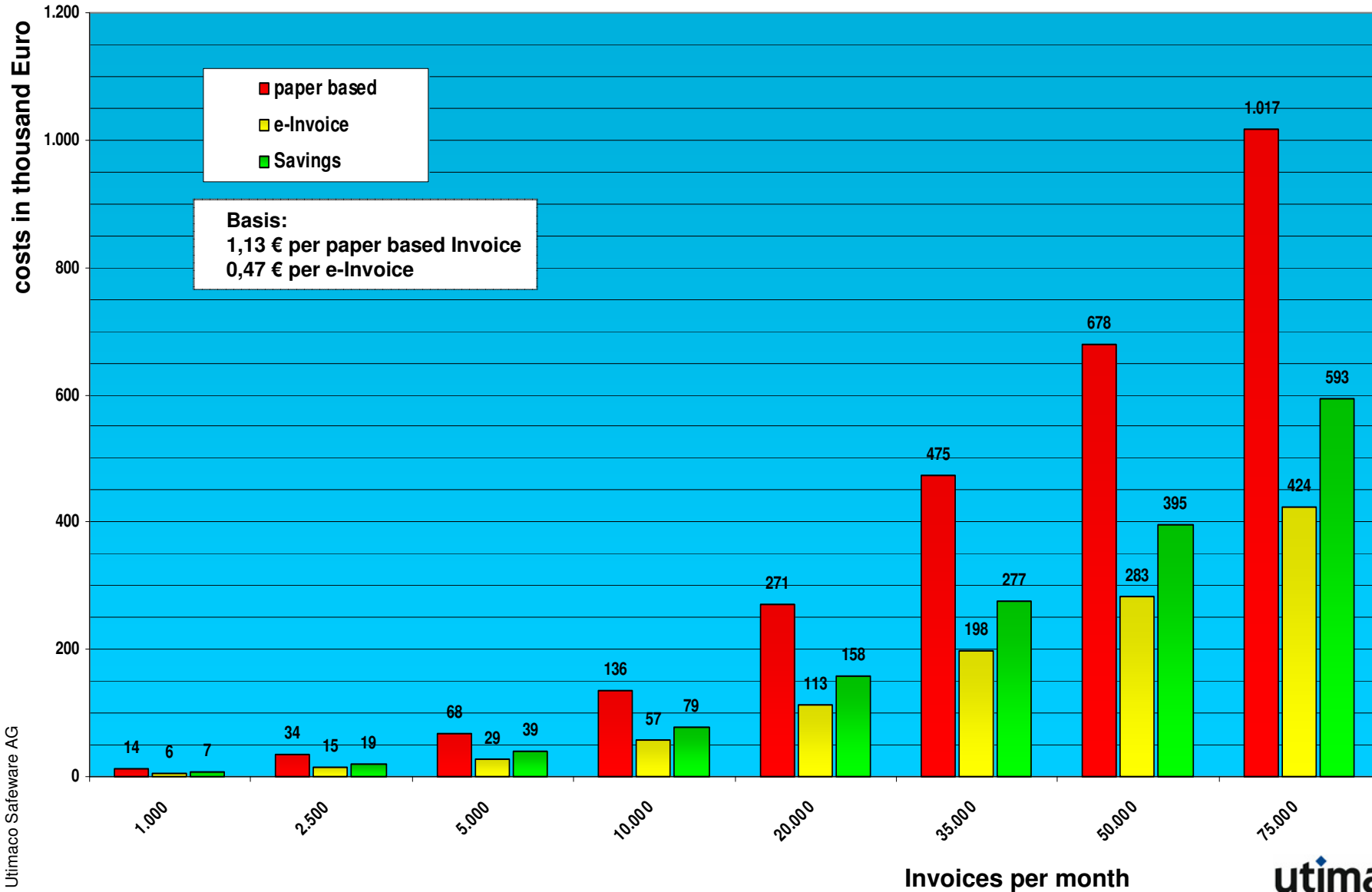
# Examples of Invoices

Paper based Invoice 1,13 – 1,65 €

e-Invoice 0,28 – 0,47 €

	Invoices per day	Invoices per month	Invoices per year	Costs (min.) per year	Costs (max.) per year
Paper	250	5000	60.000	67.800,00 €	99.000,00 €
e-Invoice	250	5000	60.000	16.800,00 €	28.200,00 €
			<b>Savings</b>	<b>51.000,00 €</b>	<b>70.800,00 €</b>
Paper	500	10000	120.000	135.600,00 €	198.000,00 €
e-Invoice	500	10000	120.000	33.600,00 €	56.400,00 €
			<b>Savings</b>	<b>102.000,00 €</b>	<b>141.600,00 €</b>
Paper	1.000	20000	240.000	271.200,00 €	396.000,00 €
e-Invoice	1.000	20000	240.000	67.200,00 €	112.800,00 €
			<b>Savings</b>	<b>204.000,00 €</b>	<b>283.200,00 €</b>

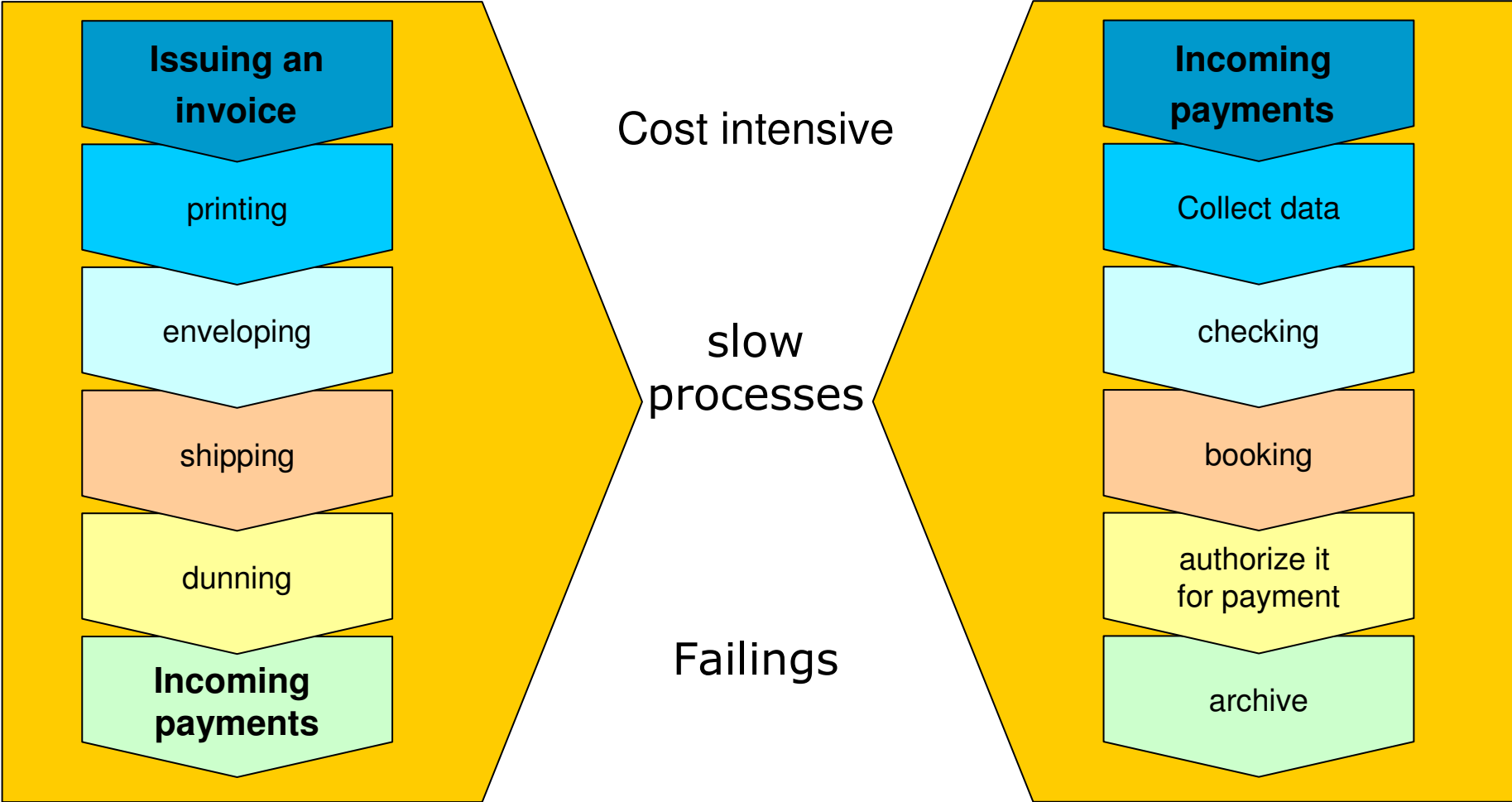
# Costs/Savings per year: Invoice based on paper vs. e-Invoice



# Workflow paper based Invoice

Invoicing party

Invoicing recipient



# Record paper based Invoices

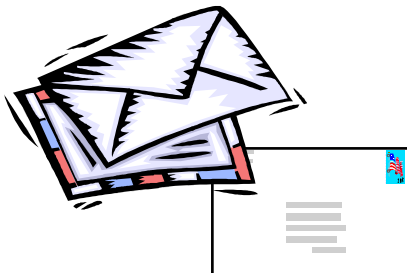
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## Manual Data Input

- Collection of data
- Faulty-inputs
- missing statements
- Frequent queries
- Media breaks
- Long terms
- Time-consuming process

## Automatic Data Input

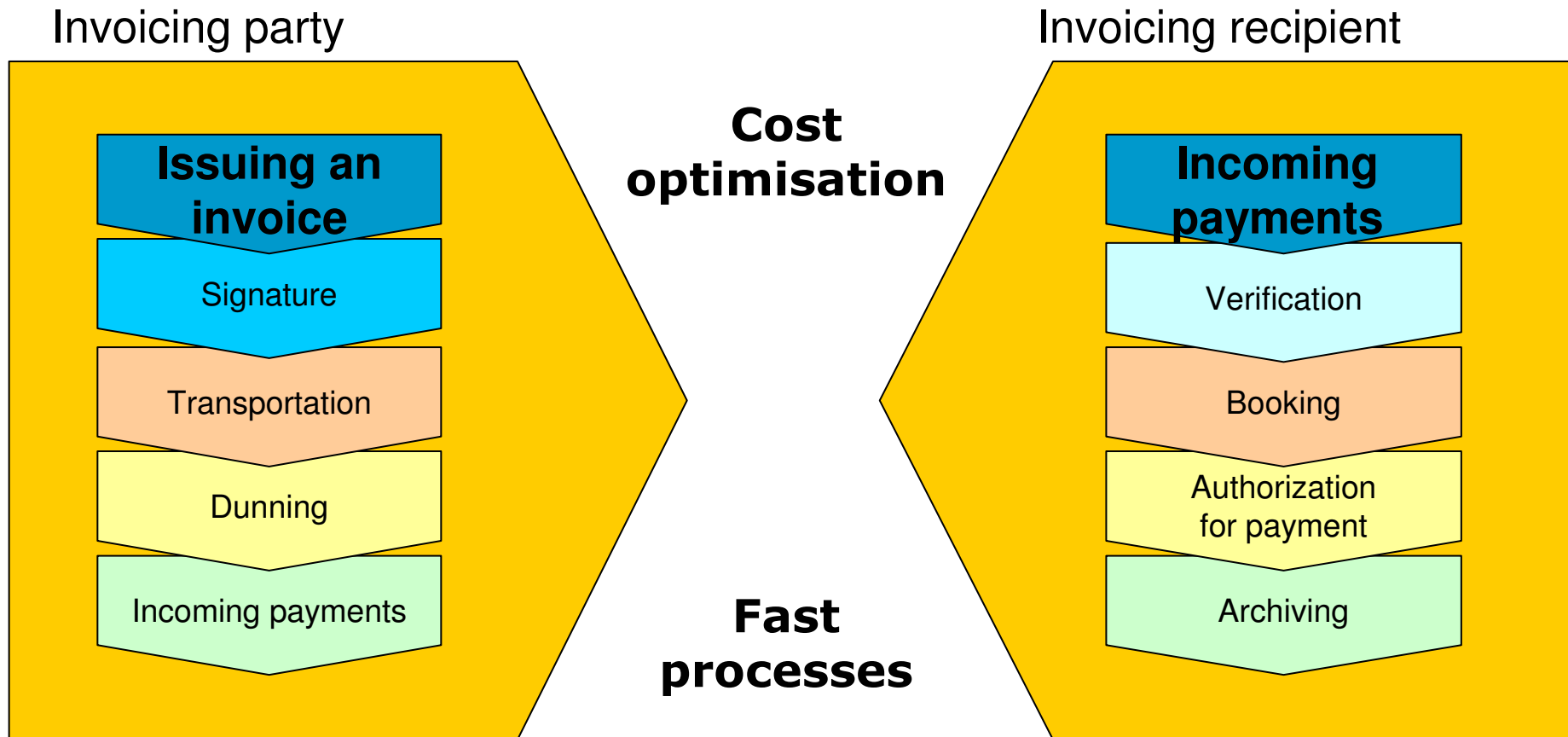
- Automatic scanning
- OCR errors
- Different document types
- Bad quality of the documents
- Different meanings
- More than one page of an invoice



**Documents are a great safety hazard**



# Workflow e-Invoicing (B2B)



- without media break
- no double data entry
- direct delivery

- no faulty-input
- standardization of billing data
- automated examination

# Advantage Invoice recipient

- **Process simplification**

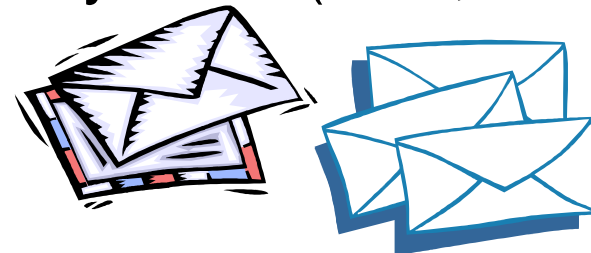
- automatic check and verification of the invoices, archiving
- No manual data capture, no scanning, no OCR



- **Fast input dax deduction** (Germany: Vorsteuerabzug)

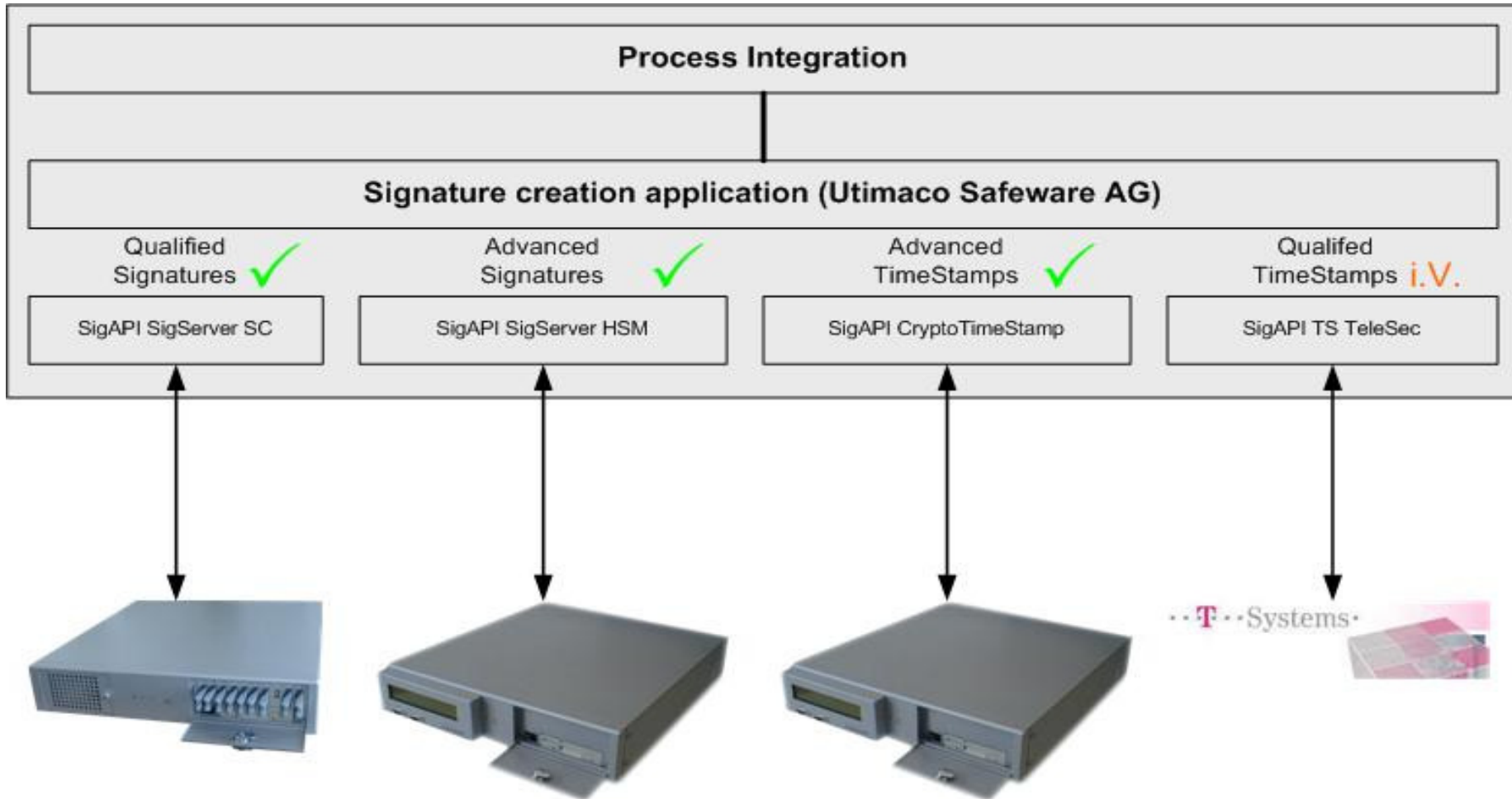


- No time delay for transportation
- Higher security for cash discount
- Automatic data transfer to ERP Systems (SAP, Baan, etc.)



- **without media break**

# Solution Portfolio: Signature / TimeStamping



# Solution Portfolio: Details

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- **SignatureServer HSM / CryptoTimeStamp**
  - Advanced signatures or time stamps through Hardware Security Module (CryptoServer 2000)
  - CryptoServer 2000 in certification: FIPS 140-2 level 3
  - CommonCriteria EAL4+ in preparation: Development of Protection Profile
- **SignatureServer SmartCard**
  - Qualified and advanced signatures through Smartcards
  - Up to 10 Smartcards can be used in parallel
  - Signature creation library in certification: ITSEC E2 High
- **SafeGuard Sign&Crypt Family**
  - Advanced signatures at the desktop

# SAP: e-Invoice from the user perspective

- Invoice mask is not changed
- Signature creation centralized

Faktura Bearbeiten Springen Einstellungen System Hilfe

IST PUBLIC/Faktura anlegen

Bearb. Fakturavorrat Übersicht Fakt. Selection date Positionsauswahl

Vorgabedaten

Fakturaart ZV01 Rechnung SW-... LeistErstDat  
Fakturadatum 31.01.2002 Preisdatum

Zu verarbeitende Belege

Beleg	Pos.	Vertriebsbelegtyp	Bearbeitungsstatus	Fa...
10179476				

Faktura Bearbeiten Springen Umfeld System Hilfe

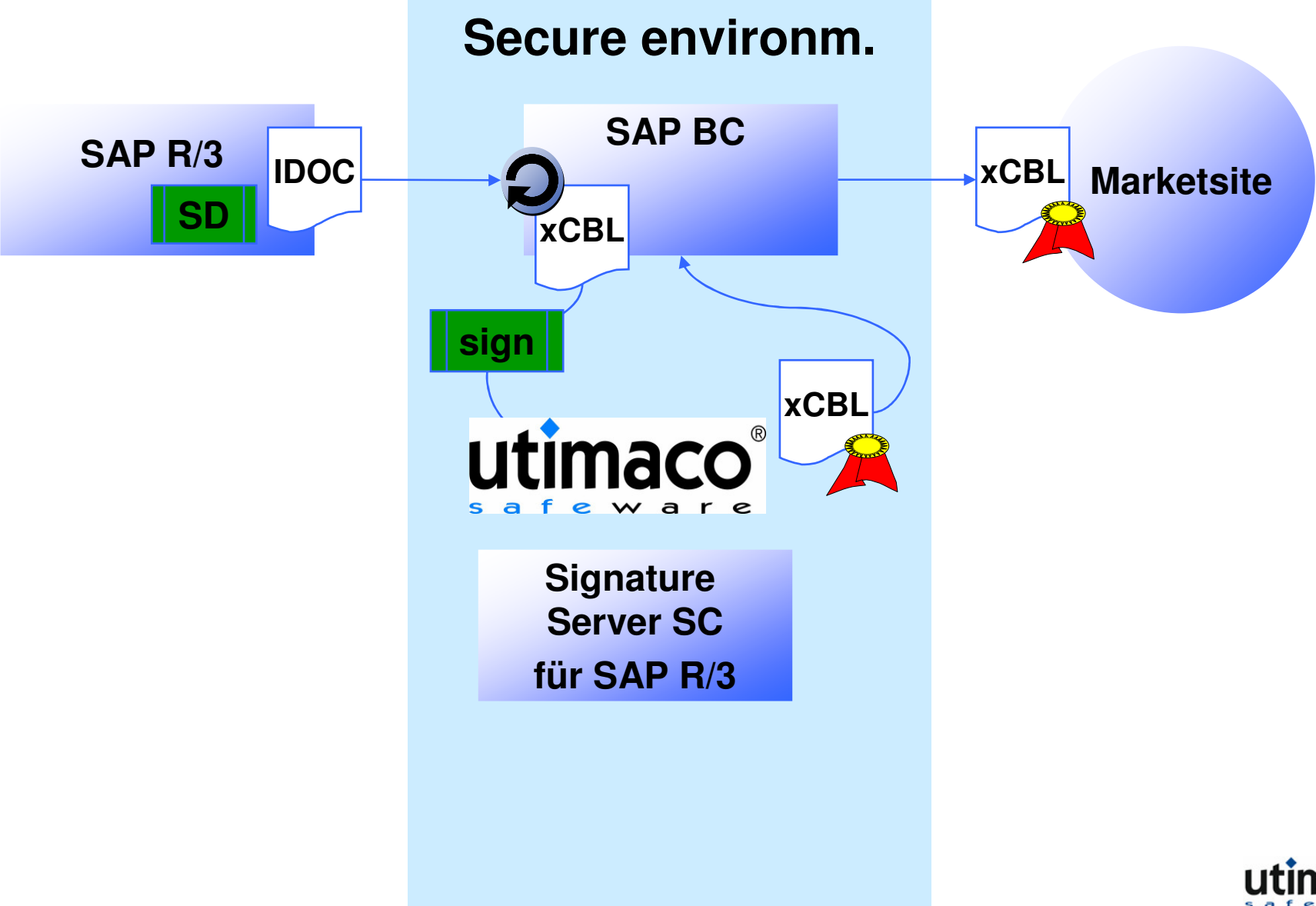
IST PUBLIC/Rechnung SW-Kauf 6001085597 (ZV01) anzeigen: Ut

Rechnungswesen Fakturen

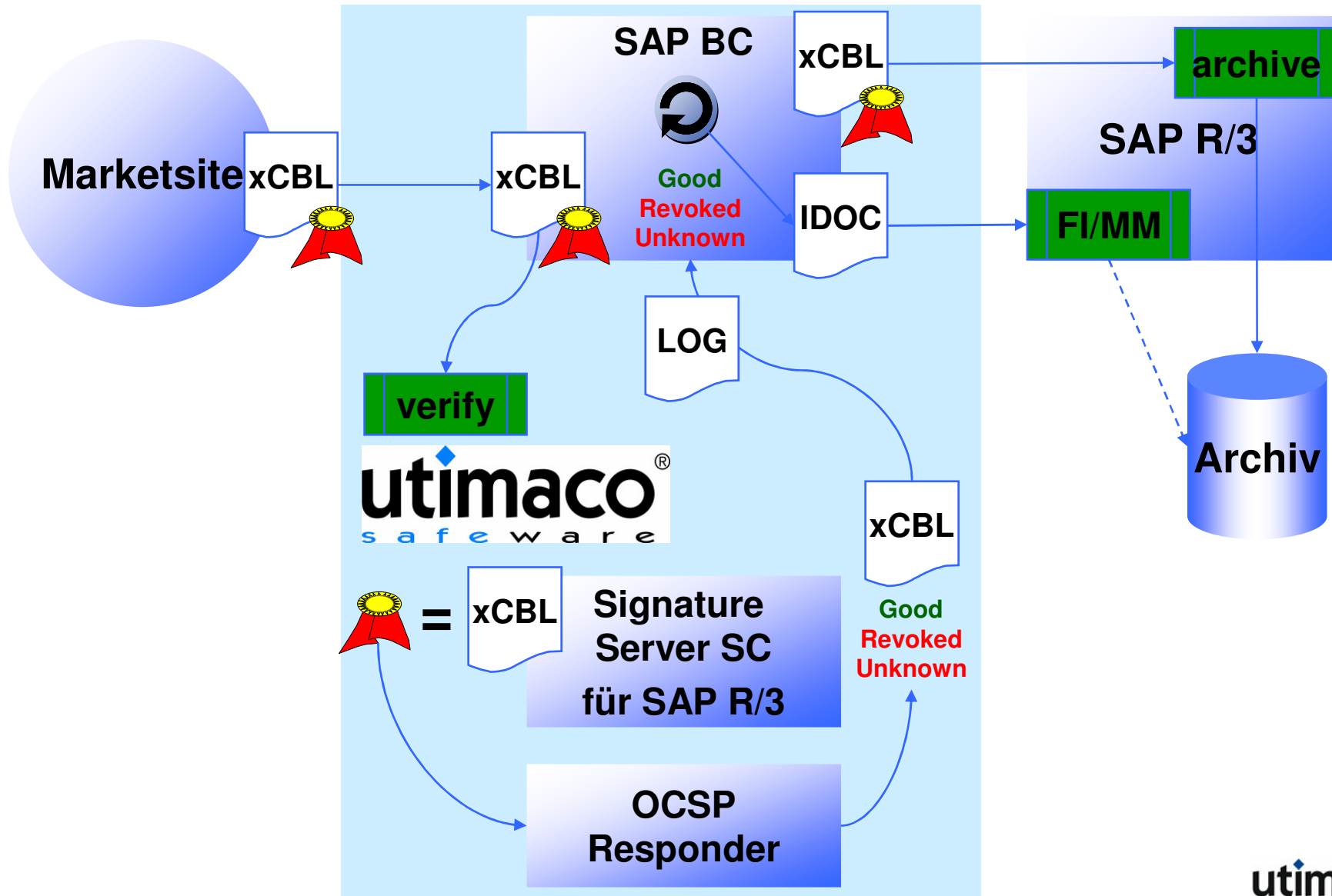
ZV01 Rechnung SW-Kauf 6001085597 Nettowert 53.450,00 EUR  
Regulierer 13130 Adolf Würth GmbH & Co. KG / Reinhold-Würth-Straße ...  
Fakturadatum 31.01.2002

Pos	Bezeichnung	Fakturierte Menge	ME	Nettowert	Material
20	Basis User		20 USR	5.307,09	7000000
30	ABAP Workbench User		10 USR	31.463,48	7000040
40	Operational User		10 USR	16.679,43	7000036

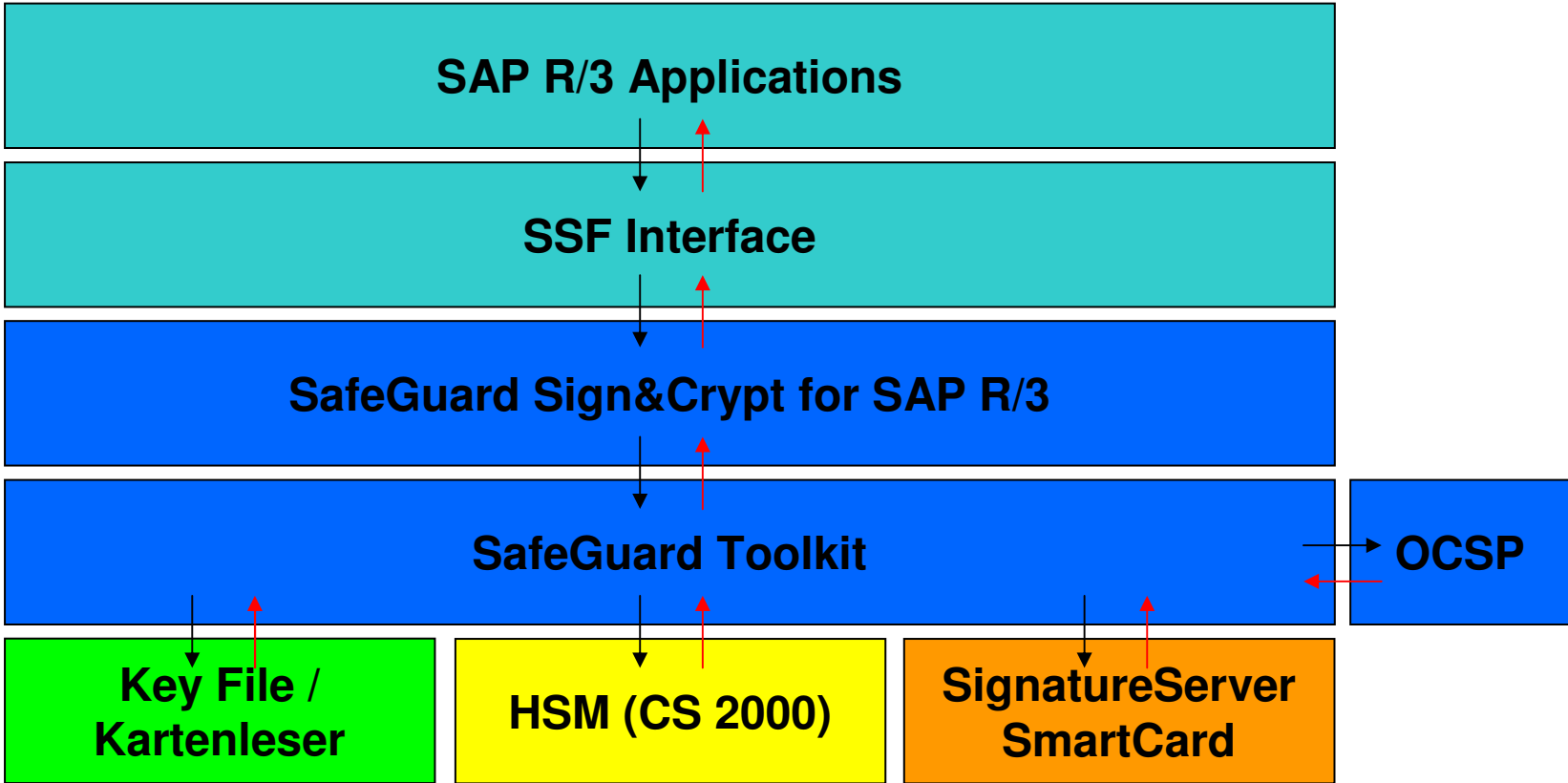
# SAP: Seller sending e-Invoice



# SAP: Buyer receiving e-Invoice



# SAP: Integration through BC-SSF interface





# SAP - Certification

## ■ Certified by SAP



### CERTIFICATE

Interface Software for **mySAP.com**<sup>®</sup>

**BC-SSF 4.5**  
Secure Store & Forward and Digital Signature  
**SafeGuard® Sign&Crypt 3.0**  
for the SAP R/3 System

**SAP AG**  
hereby confirms that the product  
**SafeGuard® Sign&Crypt 3.0**  
Release Partner Product: 3.0  
of the company

**Utimaco Safeware AG**  
has been certified as interface software for the SAP R/3 4.5 System.

This certificate confirms the existence of product functionality in accordance with SAP's Certification procedure. It does not guarantee that the product is error-free.

The certification test is documented in report: 1126/3/wdf from December 14, 2000. The test has been performed using a SAP R/3 System.

Partner hardware: **PC-Pentium**  
Operating system: **Windows NT**

This configuration meets the requirements for connecting **SafeGuard® Sign&Crypt 3.0** to the SAP R/3 System.

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**Certified functions**

General SSF Prerequisites (PKCS #7)  
Public Key Algorithms: RSA  
Hash Algorithms  
Symmetric Encryption Algorithms  
Optional functionality: SsfDigest  
SsfVerify

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Waldorf, December 22, 2000

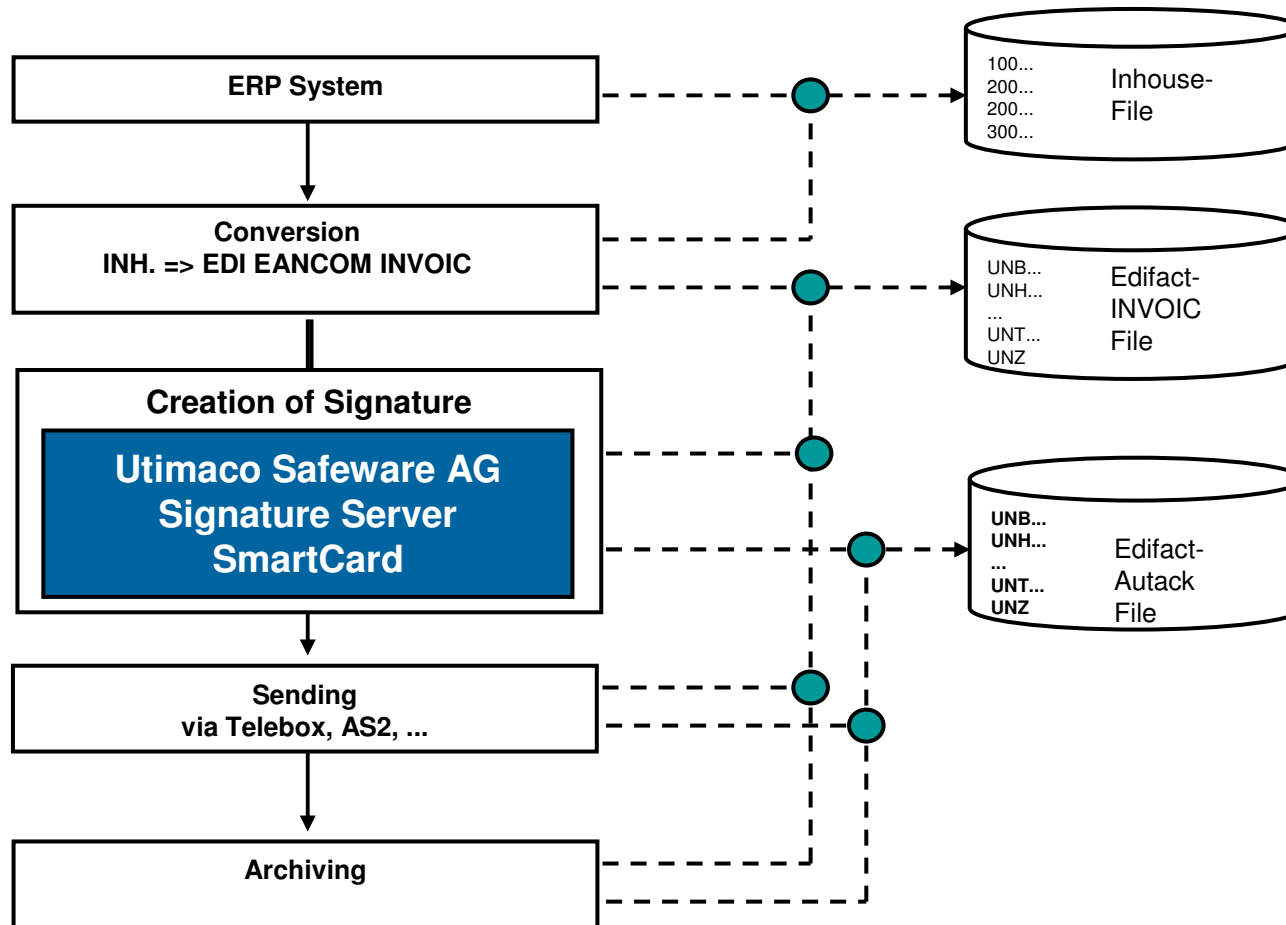
*Jochen Höfner*

Dr. Jochen Höfner  
Integration & Certification Manager



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# EDI: e-Invoice creation process

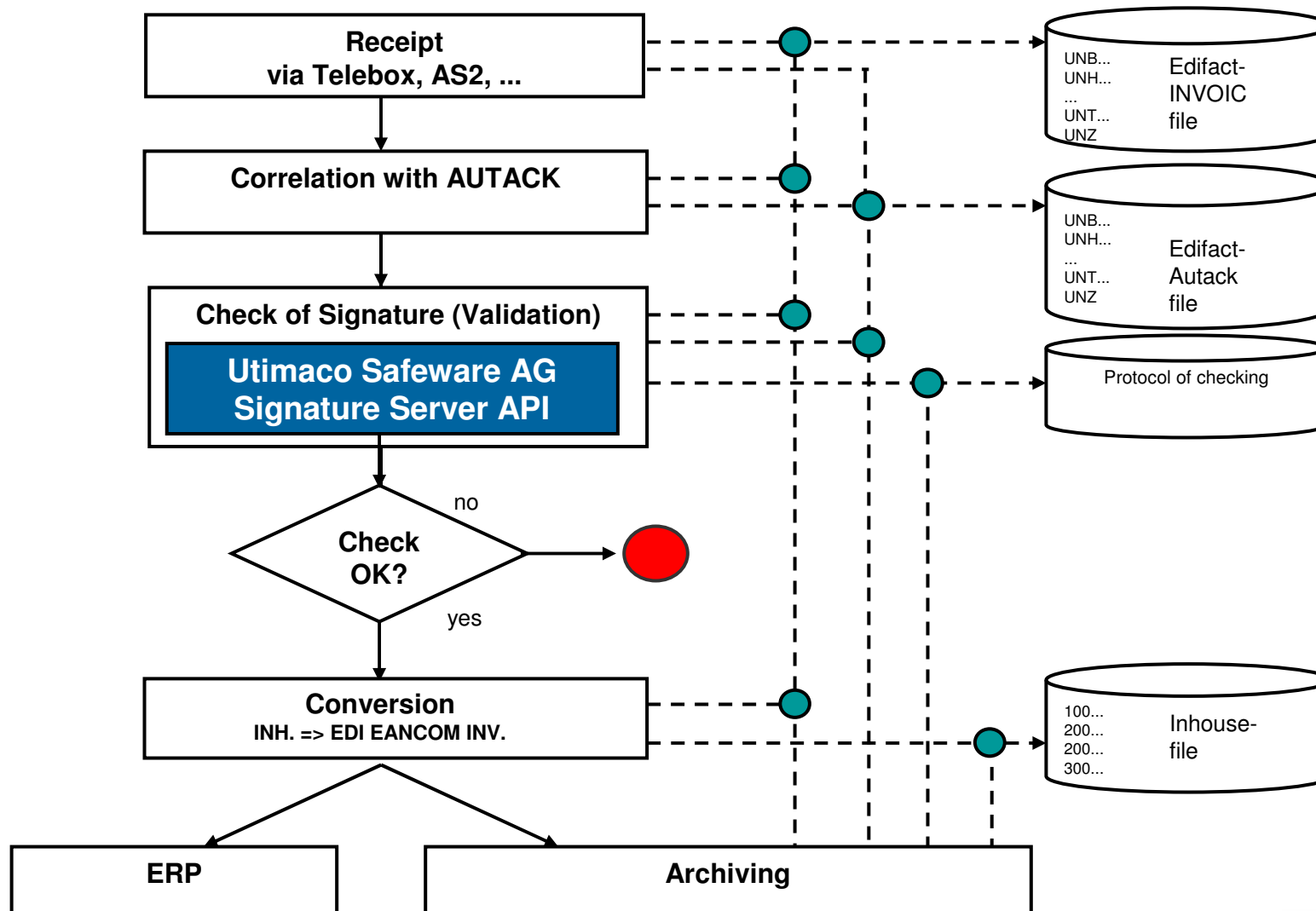


# EDI: e-Invoice creation process

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- Additional steps one has to perform:
  - Utimaco Signature Server SmartCard
  - Integration of signing process into existing EDI component
  - Archiving of all relevant data
  - 2 Smartcards (minimum) carrying qualified certificates
    - TeleSec
  - EDI Agreement between both parties related to the exchange of EDI based e-Invoices using signatures
  - Exchange of the Public-Key-Certificates to be used

# EDI: Process at the e-Invoice recipient



# EDI: Process at the e-Invoice recipient

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- Additional steps one has to perform:
  - Utimaco Signature Server API for verification of the signatures and validation of the certificates
  - Integration of verification process into existing EDI component
  - Archiving of all relevant data
  - EDI Agreement between both parties related to the exchange of EDI based e-Invoices using signatures
  - Exchange of the Public-Key-Certificates to be used