



Running AS2 on IBM i - Information & Cost Savings


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Introduction: [menten](#)




menten
IBM i SOFTWARE SOLUTIONS

AS2 - What is AS2?



Technical Overview




AS2 – Cost for Procurement and Operations




How much do I have to pay?




AS2 – Moving to on-premise on IBM i




Why should I?



Development of EDI - E-Invoicing



The future of electronic data interchange



AS2 – Running on IBM i



Example for an IBM i native EDI solution



Introduction: [menten](#)



Introducing: The Speaker

- **Name**
Ralph Menten
- **Function**
Founder, Owner and CEO
- **Education**
Graduation from private highschool
Studied Physics/Maths
Educated Programmer/Analyst on
IBM 36/38/400
- **Facts**
Married
Two children (29, 30)
Born in Cologne, Germany



Introducing: The Company

- Software & Service for IBM Power Systems users (IBM i)
- IBM Business Partner & Independent Software Vendor (ISV)
- Headquarter in Germany
- Branch office in the U.S.
- 20+ employees
- Family owned

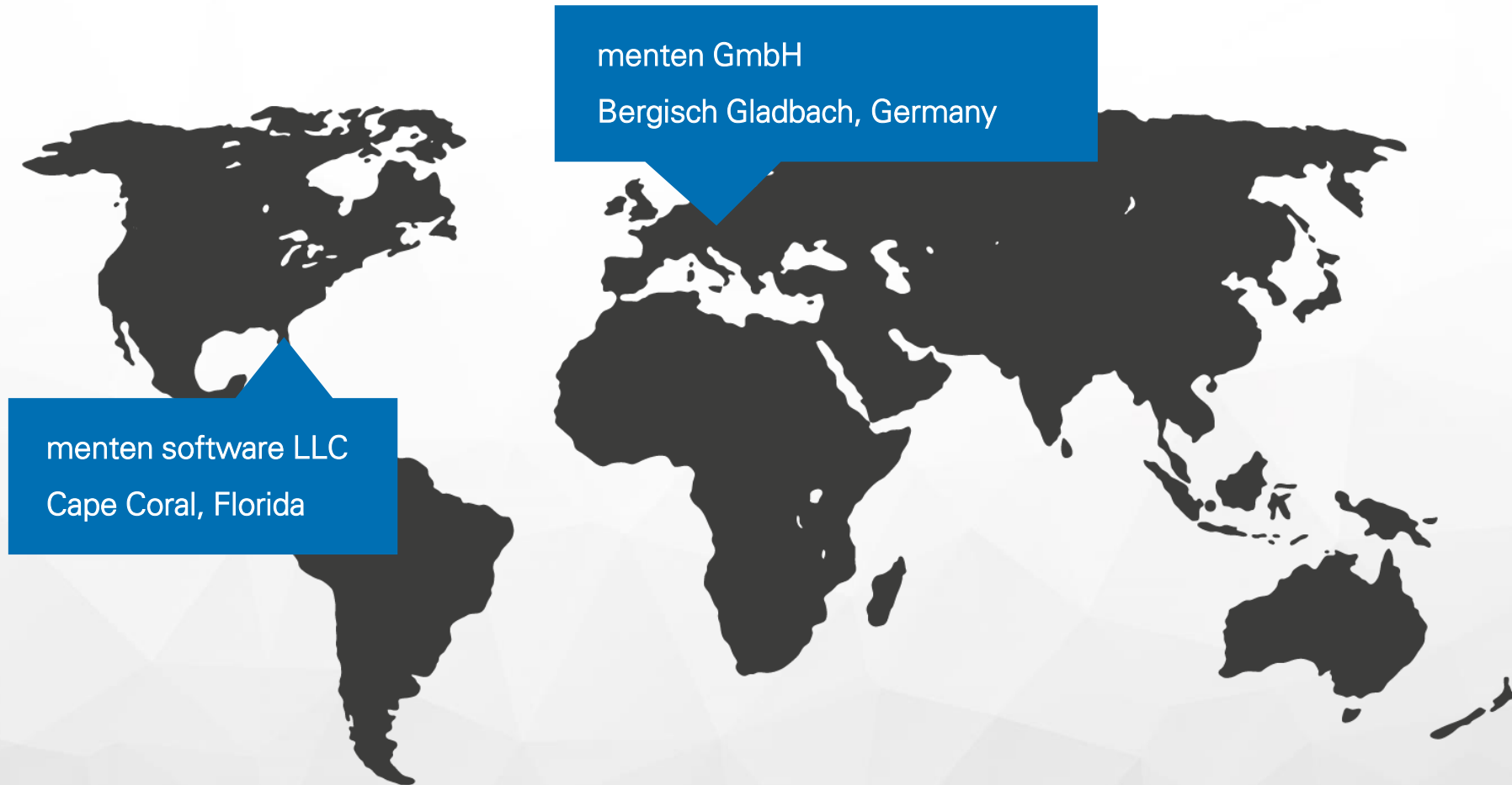


Introducing: The Profile

- EDI Specialist since 1989
- Supplier of a standard EDI solution
- 350+ customers in 32+ industries
- Supplied solutions for 580 IBM Power Systems worldwide



Introducing: Branch Offices



menten software LLC
Cape Coral, Florida

menten GmbH
Bergisch Gladbach, Germany

AS2 - What is AS2?



Technical Overview

AS2 - What is AS2?

EDIINT AS2 = EDI over the Internet Applicability Statement 2

- Standardized communication protocol by the IETF
- Direct internet based connection
- Defined in RFC 4130

Exchange structured business data

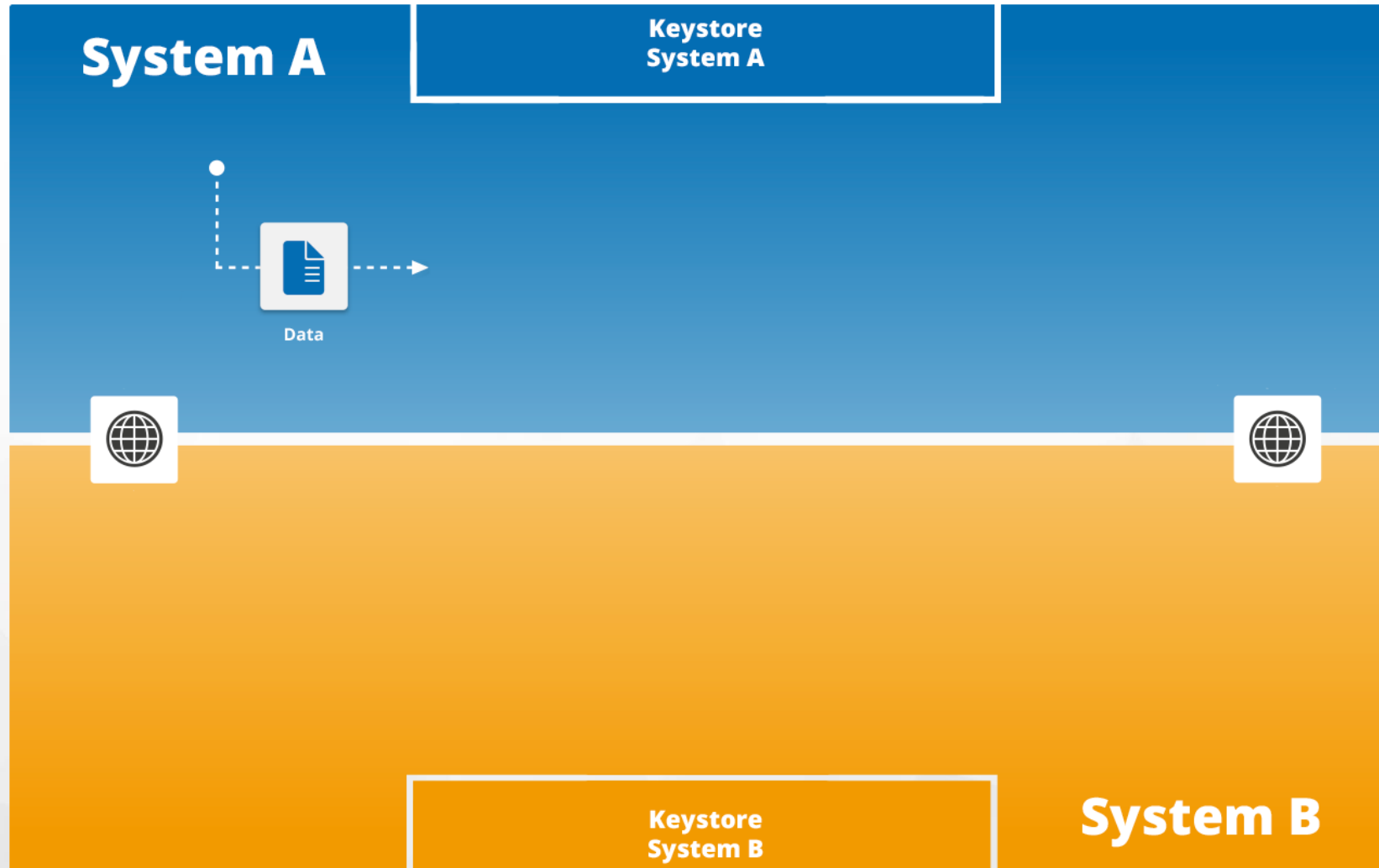
- Based on internet standard HTTP/HTTPS
- Standard MIME structures
- Added security
 - + Public Key Encryption
 - + Digital Signature
- Added reliability
 - + MDN (Message disposition notification)



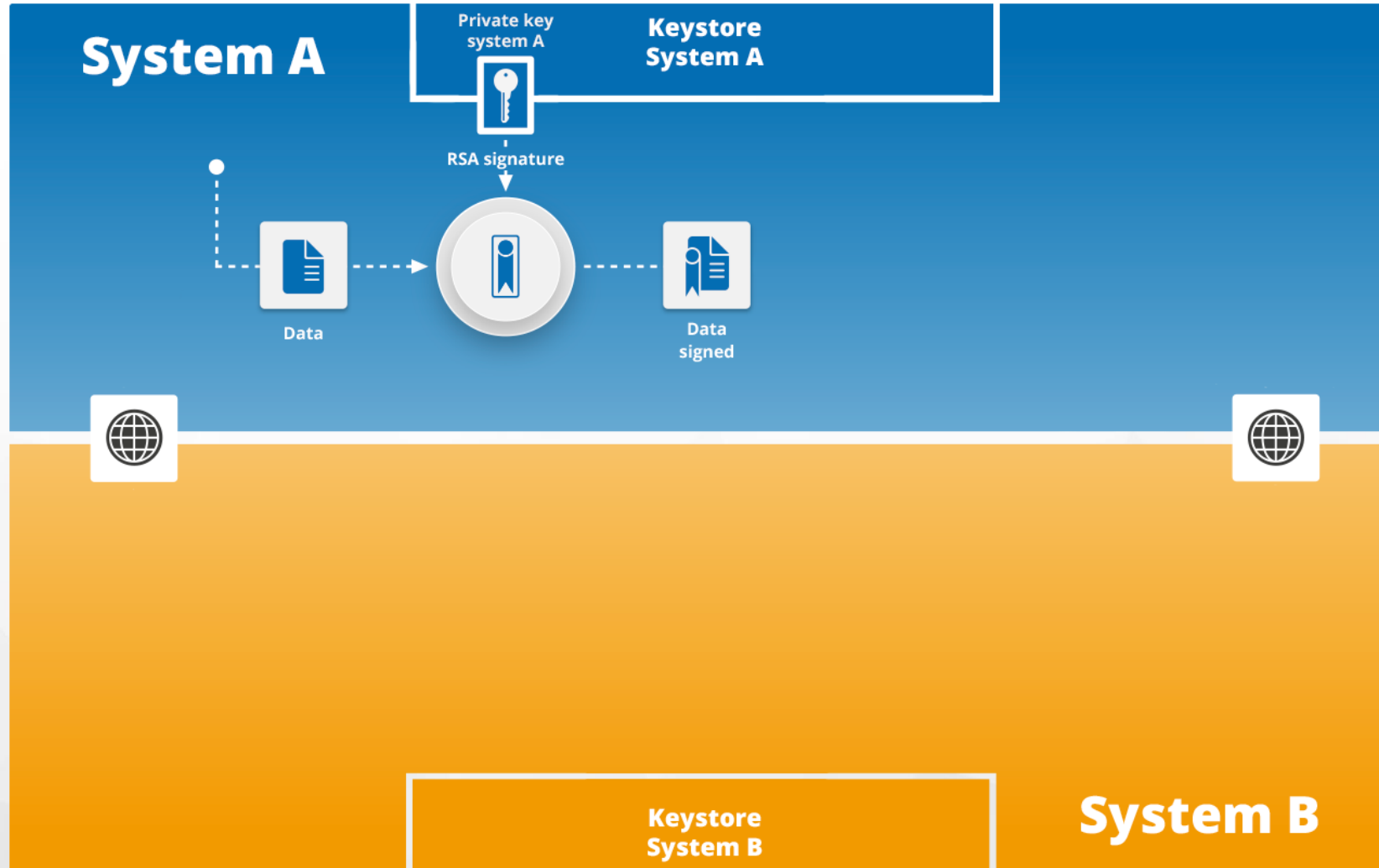
RFC 4130

MIME-Based Secure Peer-to-Peer
Business Data Interchange Using HTTP,
Applicability Statement 2 (AS2)

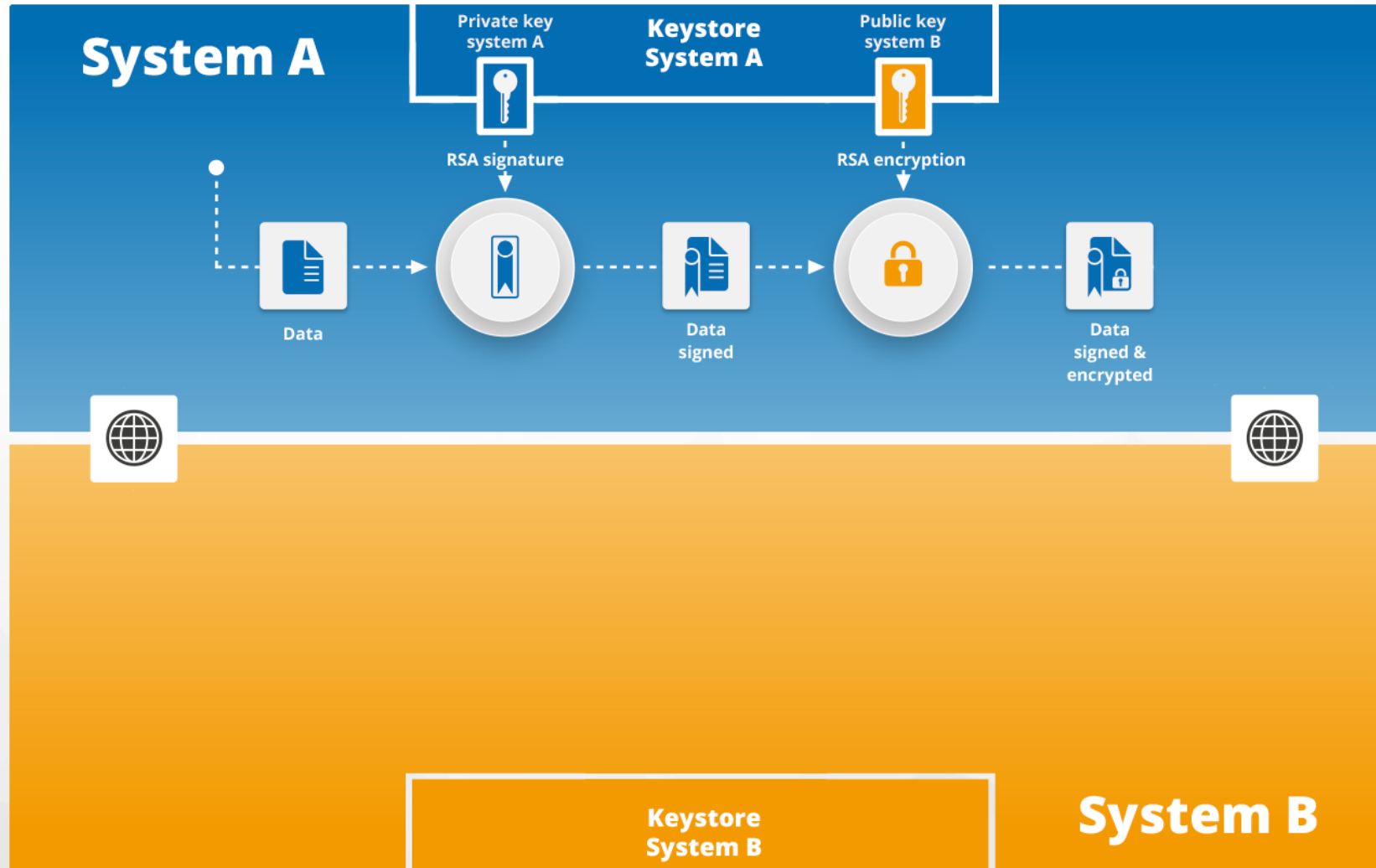
AS2 – Technical Functionality



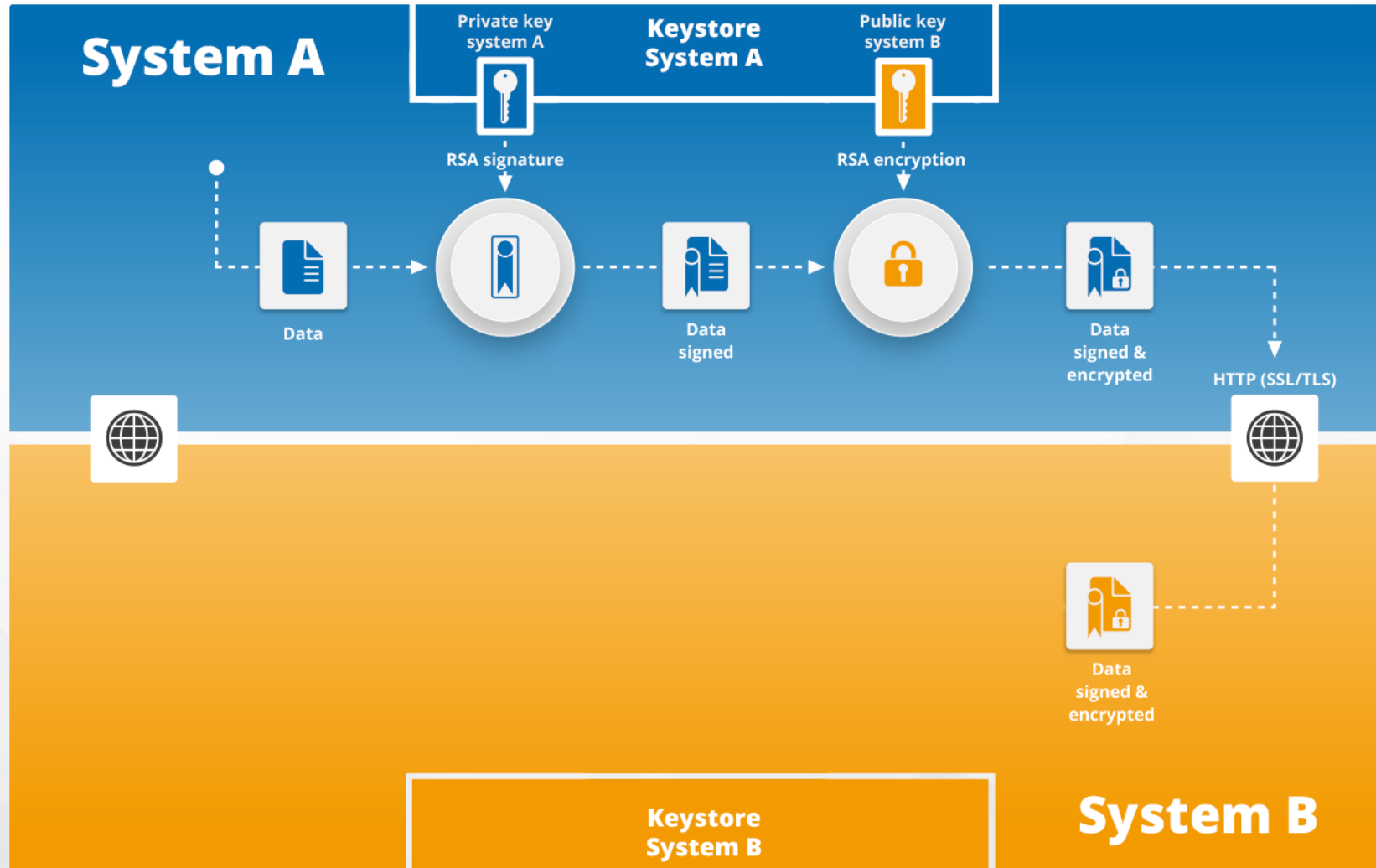
AS2 – Technical Functionality



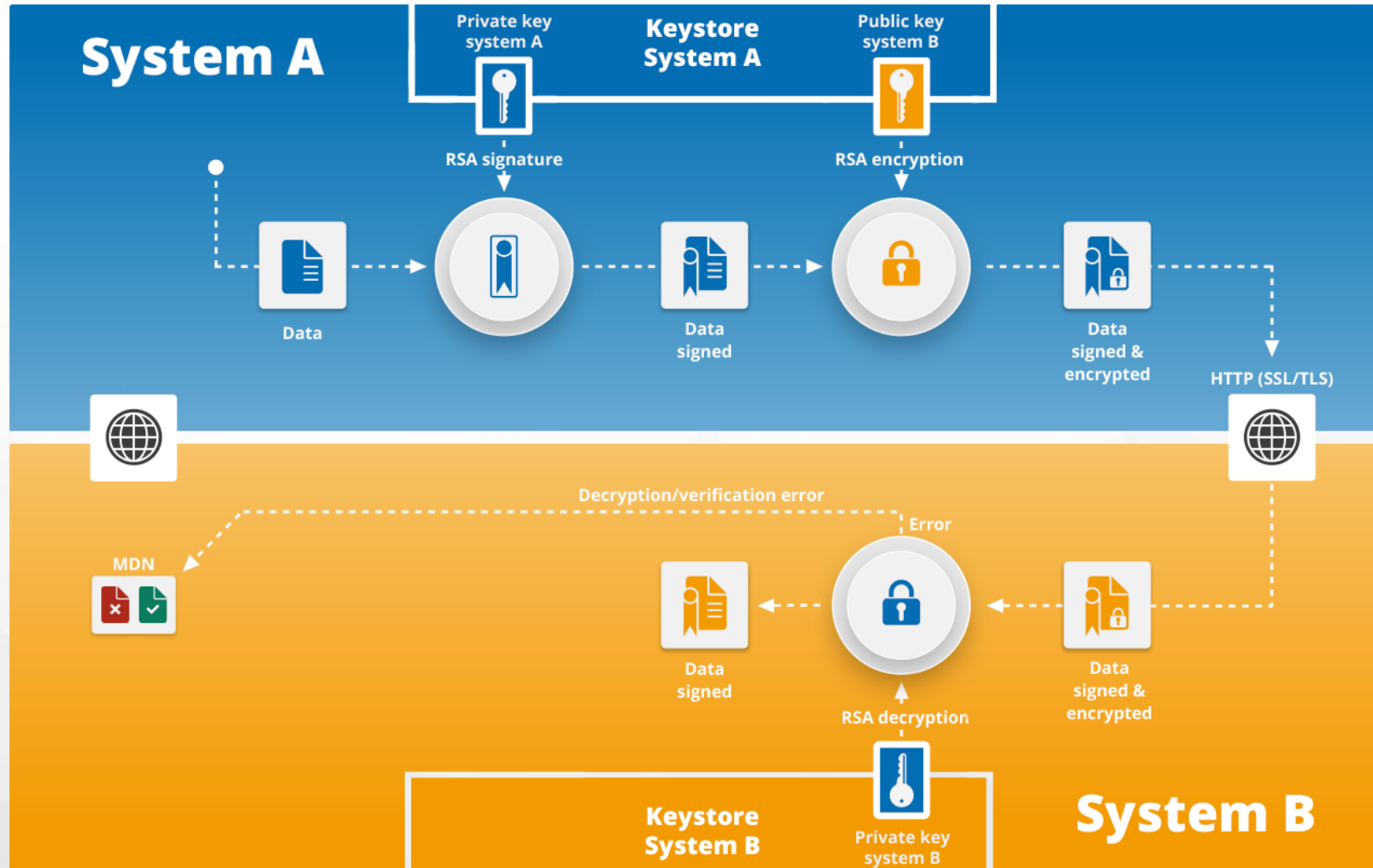
AS2 – Technical Functionality



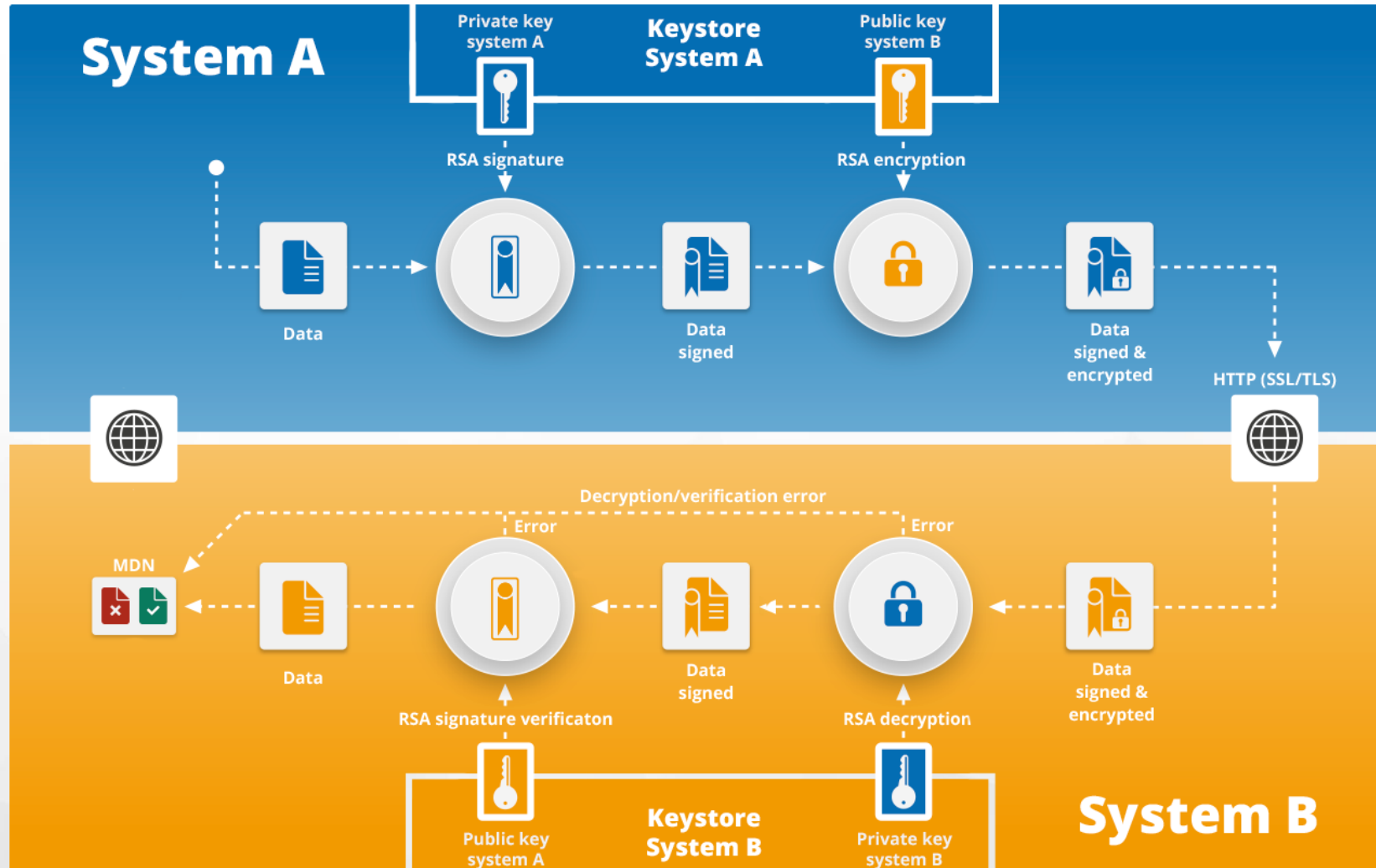
AS2 – Technical Functionality



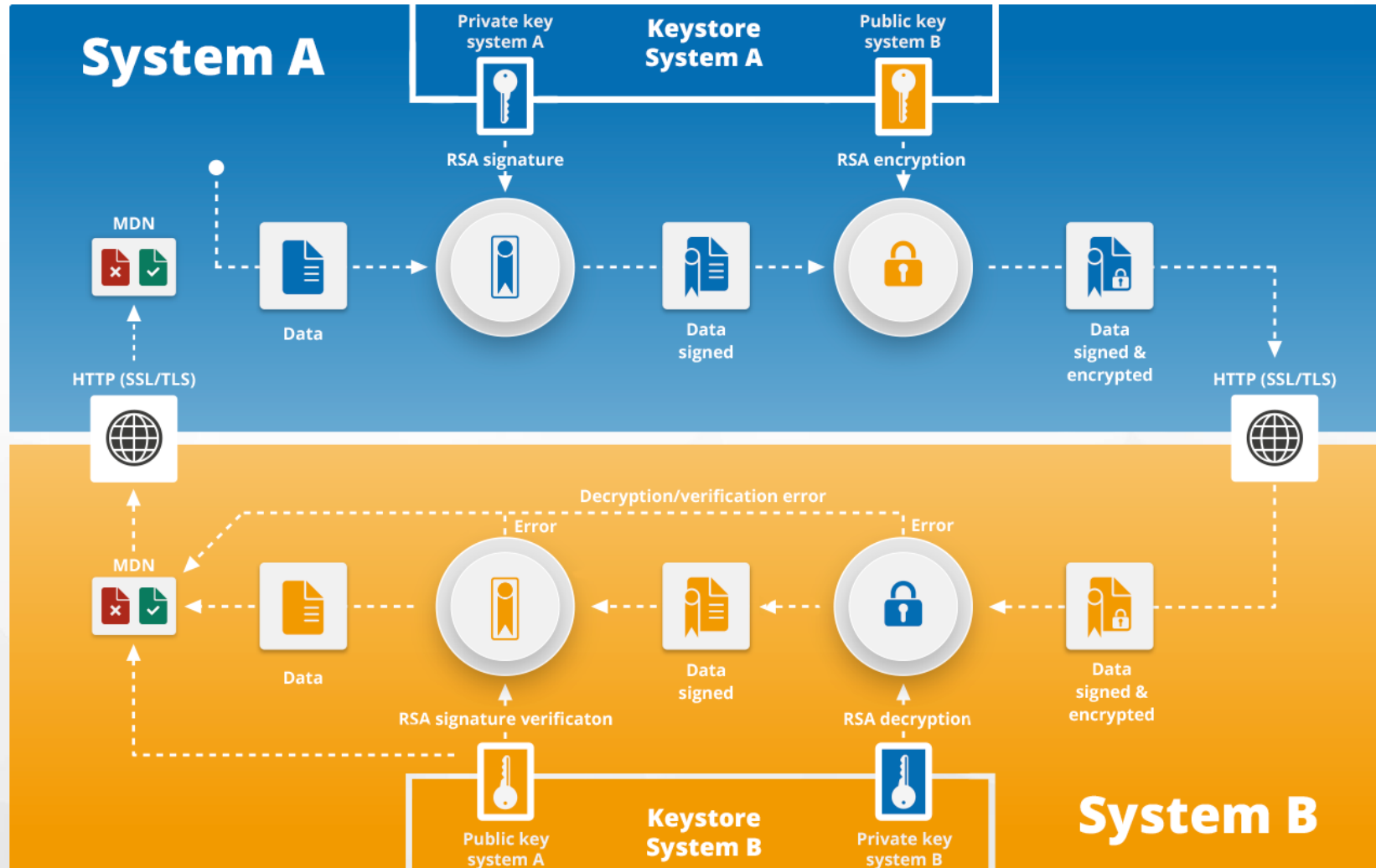
AS2 – Technical Functionality



AS2 – Technical Functionality



AS2 – Technical Functionality



AS2 – Industry Standard



Why is it so secure and reliable?

AS2 - Why is it so secure and reliable?

Transport security

- SSL enabled HTTP connection

Content security

- Digital signatures & high 2048bit encryption
- Industry standard X.509 v3 PKI

Transaction security

- Asynchronous & synchronous acknowledgement of receipt (MDN)

Reliability

- AS2 specific implementation, no additional software needed
- Transaction safe
- Can run on a reliable IBM Power Systems with IBM i



AS2 – Cost for Procurement and Operations



How much do I have to pay?

AS2 – How much do I have to pay?

Using a service provider/VAN

- Charges depend on numerous factors and can easily reach \$30K / year

Using third party software

- License cost
 - 2K – 250K depending on platform, # of processor kernels, # of trading partners, # of connections
- Yearly maintenance
 - Up to 20%
- Additional cost
 - When adding trading partners (typically \$600 – \$2000)
 - When adding receive ports
 - When upgrading server / processor

AS2 – Moving to on-premise on IBM i



Why should I?

AS2 – Why to Consider Changing?

Currently using a VAN provider

- Charges for additional trading partner setup
- Charges volume dependent (# of messages, transferred data)
- Charges dependent on time of day

Currently running a solution on IBM i

- Upgrading to a new processor group could incur additional license cost
- Limited number of trading partners supported
- Additional gateway software necessary on a PC
- No modern user interface available
- Performance limits in number of parallel transactions possible

AS2 – Cost Savings Potential

Cost savings by switching from VAN to on-premise

- A leading US customer based in Maryland is saving > \$30,000 per year using a solution now that is unlimited in the number of trading partners and connections

Cost savings by replacing the current solution with an IBM i solution

- Save up to \$2,000 per new trading partner if the current solution is limited in the number of partners/hosts
- Save on licensing and maintenance if the current solution needs additional hardware and/or software
- Save on additional software license if upgrading your system (processor group change)

Development of EDI - E-Invoicing

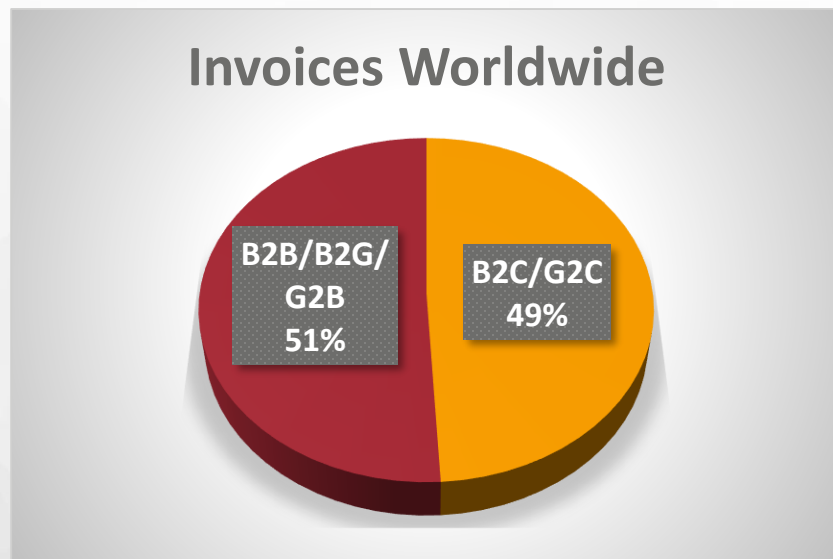


The future of electronic data interchange

E-Invoicing – Current

Worldwide volume of invoices in 2019

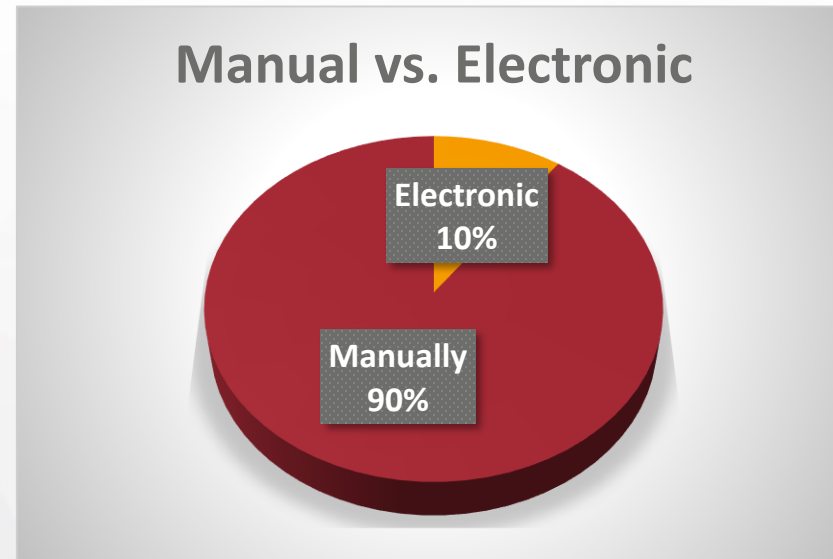
- Total 550 billion
 - B2C/G2C = 270 billion
 - B2B/B2G/G2B = 280 billion



Source Billentis, 2019

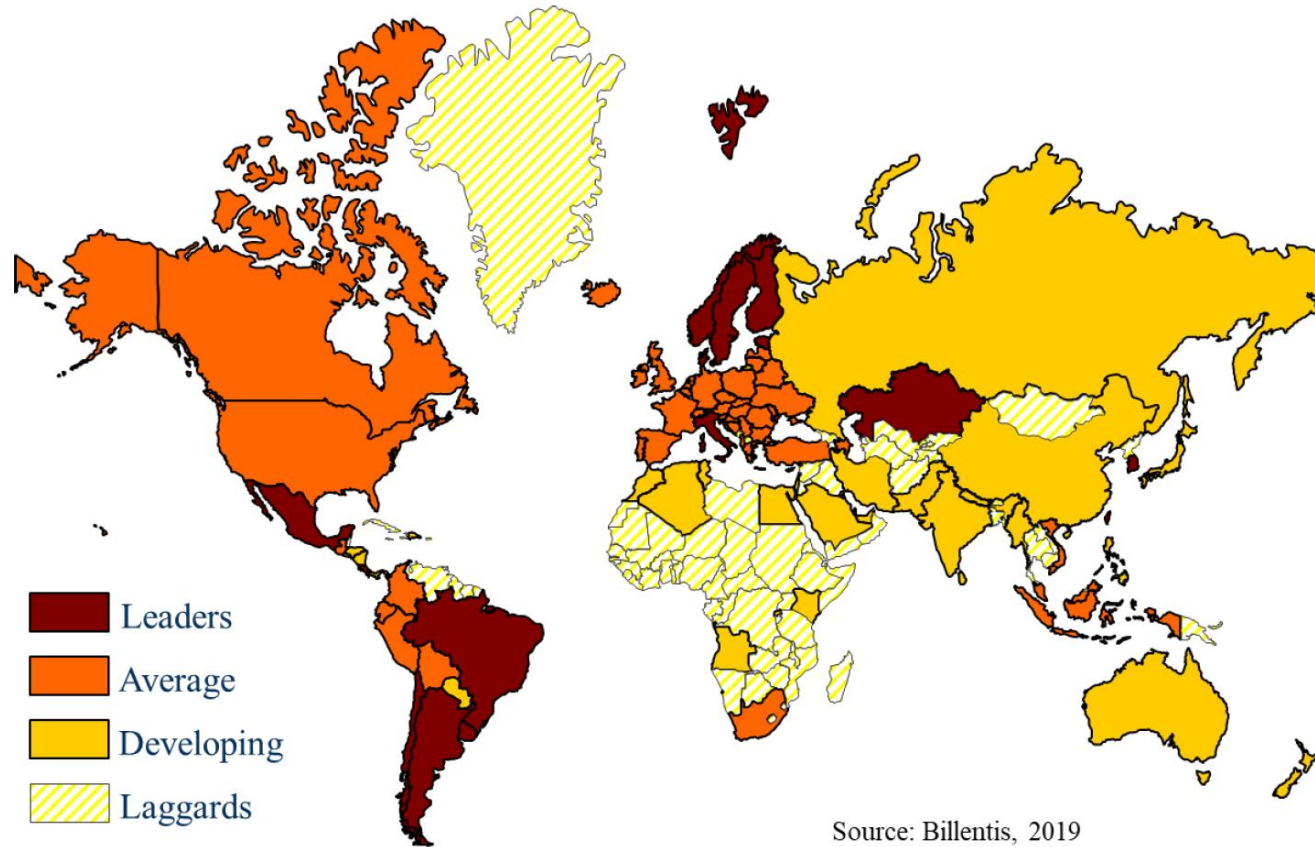
Worldwide type of processing in 2019

- 495 billion manually
- 55 billion electronically



Source Billentis, 2019

E-Invoicing – Leading Countries



North America

New initiative by Federal Reserve to increase e-invoice adaption by all types and sizes of U.S. businesses based on EU e-Invoice Standard

Europe

The public sector must be able to communicate electronically with the economy for invoices and procurements based on an EU directive in 2020.

E-Invoicing – Expected growth mid-term

Strong growth rates of 10-20% in mid-term

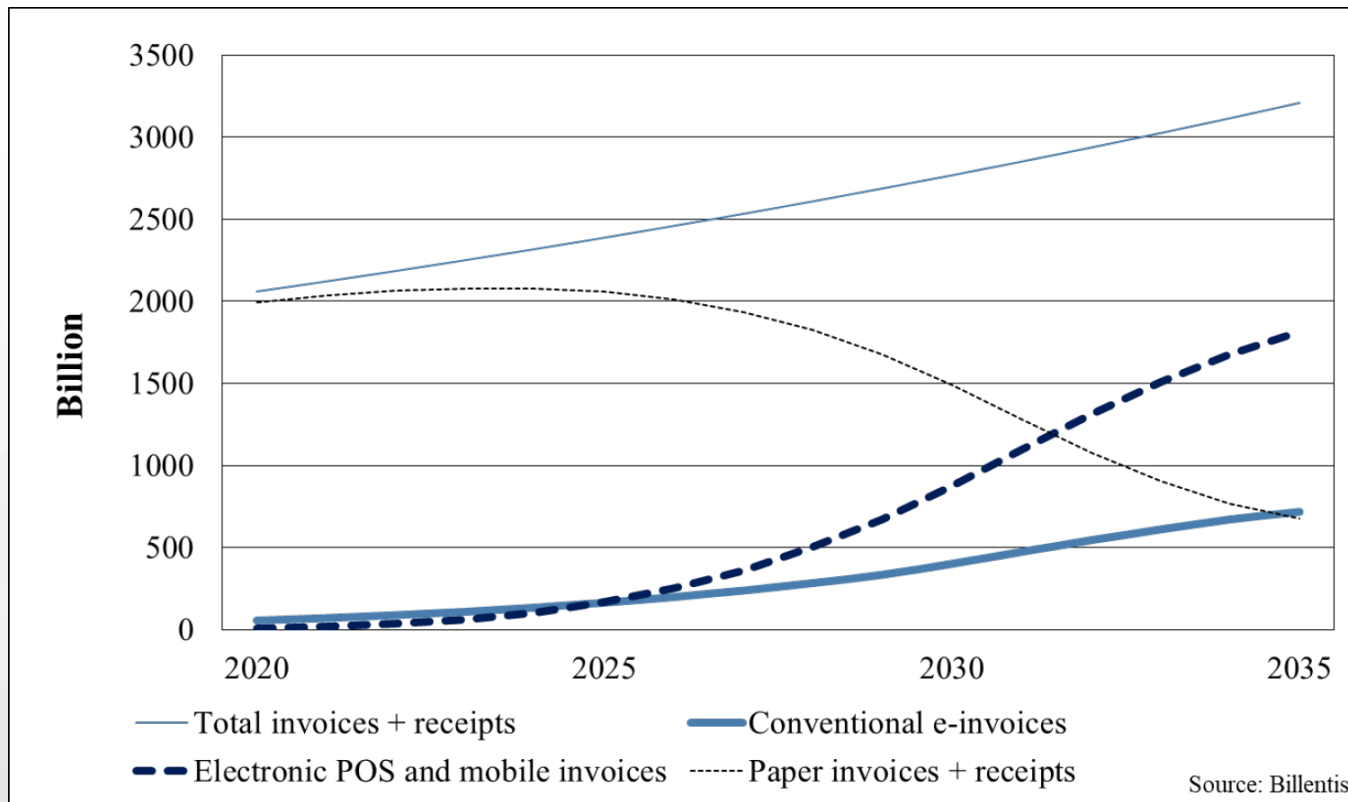
Recipient segment	Europe		LATAM		North America		APAC		Rest of World	
Consumer	5	↗	8	↗	5	↗	4	↗	0.5	↗
Business & Government	8	↗	13	↗	5	↗	6	↗	0.5	↗

Estimated electronic invoices/bills 2019 (billions, strongly rounded), Source Billentis, 2019

Relative growth rates ↗

E-Invoicing – Expected growth long-term

Volume of invoices in the narrow legal sense will quadruple by 2035



Source: Billentis

Source Billentis, 2019

Conclusion

Increased demand for EDI in the future

- Your EDI solution must be able to handle increasing demand
- Additional documents and trading partners should not lead to increased cost of operations

Secure solution needed

- Exchanging sensitive business documents requires a secure communication solution on a secure application platform
 - IBM Power Systems with IBM i

Reliable platform needed

- Handling business documents in a just in time environment requires a reliable 24/7 environment
 - IBM Power Systems with IBM i

AS2 – Running on IBM i



Example for an IBM i native EDI solution

AS2 - Setup and Run on IBM i

Verify pre-condition

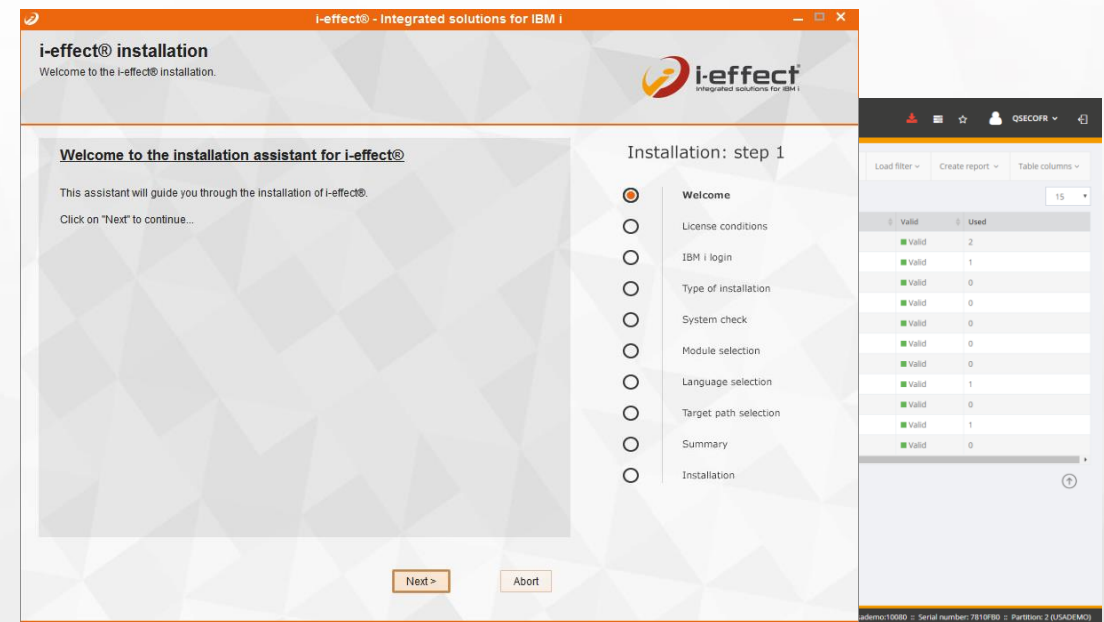
- IBM i 7.1 or higher
- Check PTF groups by using system checker at <https://www.i-effect.com/en/systemrequirements/>

Download and install

- <https://www.i-effect.com/en/downloads-i-effect/>
- Run automatic installer

Setup AS2

- Use the build-in web-interface *WebControl* to:
 - Import or create private and public keys
 - Create AS2 Server and Client profiles
- Adjust firewall (port forwarding)



AS2 – Integration with existing EDI Solutions

Command interface

- Command SNDAS2
- Use interactive, in batch or other CL programs

Automation

- Use IFS/DB2 file monitoring
- Create scheduled jobs
- Immediately process incoming files
- Integrate command calls to other applications

```
Send AS2 data (SNDAS2)

Type choices, press Enter.

Recipient partner-ID . . . . . > menten

Originator ID . . . . . > usadem0

Filesystem input . . . . . *IFS *IFS, *DB2
Input path . . . . . > '/tmp/orders.edi'
```

Job number	Type of source files	Processing type	Description	Status	Last processing	Modified by	Modification date	Modification time	Modification pro
10	*IFS	*MONITOR	Process incoming files	Stopped	*PENDING	RM	2019/03/18	18:44:27	ADDEFFSRVE
3300	*NONE	*SINGLE	DEMO: Receive eMail	Released	*PENDING	RM	2018/09/20	10:11:36	CHGEFFSRVE
3700	*NONE	*SINGLE	DEMO: Receive FTP data	Released	*PENDING	RM	2018/09/20	10:24:04	CHGEFFSRVE
3710	*IFS	*SINGLE	DEMO: Send FTP data	Released	*PENDING	RM	2018/09/20	10:30:12	CHGEFFSRVE
3720	*IFS	*SINGLE	DEMO: Send AS2 data	Released	*PENDING	RM	2018/09/20	10:13:14	CHGEFFSRVE
4000	*IFS	*SINGLE	DEMO: X12 850 inbound	Released	*PENDING	RM	2018/09/19	11:29:48	CHGEFFSRVE
4010	*NONE	*SINGLE	DEMO: X12 855 outbound	Released	*PENDING	RM	2018/09/19	11:27:16	CHGEFFSRVE
5000	*IFS	*SINGLE	DEMO: EDIFACT ORDERS inbound	Released	*PENDING	RM	2018/09/20	10:47:10	CHGEFFSRVE
5010	*NONE	*SINGLE	DEMO: EDIFACT INVOIC outbound	Released	*PENDING	RM	2018/09/19	19:18:59	CHGEFFSRVE
5020	*NONE	*SINGLE	DEMO: FatturaPA	Released	*PENDING	RM	2019/09/27	10:37:32	ADDEFFSRVE
9001	*IFS	*SINGLE	TEST: X12 850-855 (5010)	Released	*PENDING	WC	2019/10/28	15:41:03	CHGEFFSRVE
9002	*IFS	*SINGLE	TEST: X12 850-855 (8000)	Released	*PENDING	WC	2019/10/28	15:43:42	CHGEFFSRVE
9003	*IFS	*SINGLE	TEST: X12 850-855 (8000)	Released	*PENDING	WC	2019/10/28	15:44:15	CHGEFFSRVE
9004	*IFS	*SINGLE	TEST: X12 850-855 (7000)	Released	*PENDING	WC	2019/10/29	10:34:07	CHGEFFSRVE
9999	*NONE	*SCHEDULE	DEMO: Reorg demo data	Released	*PENDING	RM	2018/09/20	10:12:01	WRKEFFSRVX

AS2 – Advantages of running on IBM i

Native implementation

- Native IBM i licensed program
- System integrated object authority

Native Performance

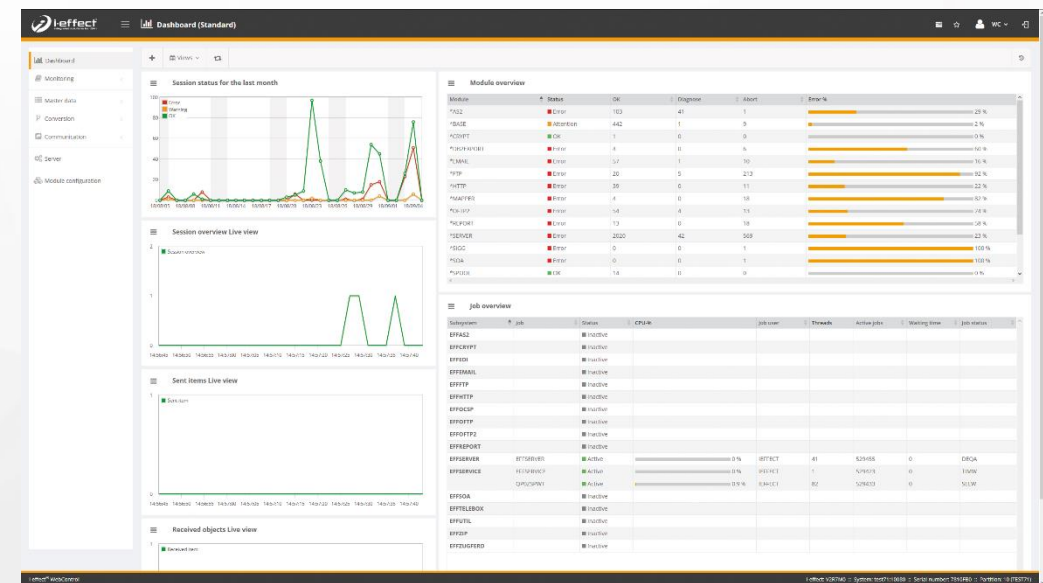
- Multithreading communication subsystem
- Unlimited number of parallel in- and outbound communications

Cost effectiveness

- Unlimited number of transactions
- Unlimited number of trading partners

Ease of use

- Browser based user interface *WebControl*
- Command interface
- Simplified automation with file monitoring
- Built-in automatic resend



Advantages / Summary

- Substantial cost savings potential by switching from VAN to an on-premise software
- Unlimited transmission volume and # of communication partners are important
- Licensing should be independent of processor groups
- Security and reliability of the platform are important
- Different communication protocols and file formats need to be supported
- Full automation capabilities are required for seamless integration into existing environment

More Information



Company homepage

- Portfolio
- Press releases
- Current offers
- Newsletter subscription

www.menten.com



Product homepage

- Overview Software Modules
- Free 30-day full version
- Prices
- Helpline

www.i-effect.com

manual.i-effect.com



Thank you very much for your interest!

Q & A – Common Questions

Is it secure to run AS2 communication directly on IBM i ?

- AS2 runs isolated in its own subsystem and does not relay any other system services like WebServers

Can multiple files be sent/received at once? Are there performance limitations?

- Because of the multi threading architecture, sending and receiving occurs simultaneously
- The number of allowed concurrent communications can be configured and is only limited by system resources

Is there any other software or license required when running AS2 on IBM i

- All components are built into the solution. Even the certificate handling does not require any other certificate management software

Is this solution compatible to other AS2 solutions?

- 10+ years of interoperability in 100+ customer installations with thousands of trading partners proofs for protocol conform and reliable AS2 communication capability