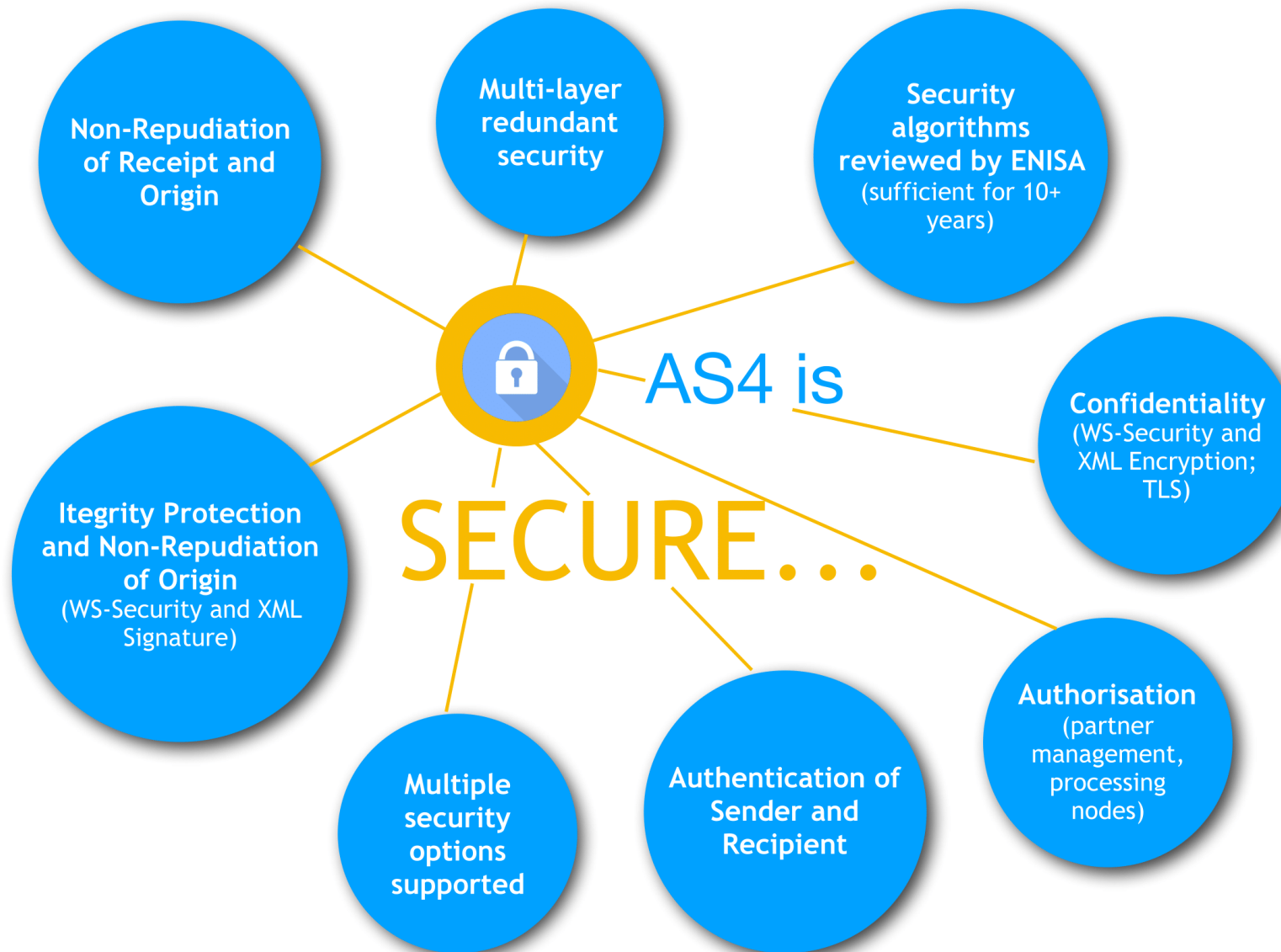


AS4 for the GAS Industry

The draft Network Code on Interoperability and Data Exchange Rules for European Gas Transmission Networks delivered to the European Commission (EC) on 11 September 2013 specifies that “AS4 shall be used as common data exchange protocol for document based data exchanges”. A usage profile has been posted which defines an ENTSOG AS4 Profile that aims to support cross-enterprise collaboration in the gas sector using secure and reliable exchange of business documents based on the AS4 standard.



B2B and AS4 History

- Flame Established 1998, and based in South Africa
- System Software Development specialising in B2B Messaging
- OASIS ebMS V3.0 MSH - 2008
- OASIS AS4 MSH - 2011
- Participant in e-SENS WP5.1 - 2015
- Business Partner with **ECS Int. BV** for Sales & 24x7 Support in Europe

Conformance and Interoperability

- OASIS Open AS4 Informal Interoperability Testing and Demonstrations – 2011 – 2012
- SuperStream AS4 Rollover Induction – November/December 2013
- SuperStream AS4 Contribution Induction – November/December 2014
- Drummond Certified AS4 4Q13 and AS4 4Q14
- RossettaNet RNIF 2.0 Petroleum Industry Implementation – 2006
- CEF/e-SENS WP5.1 Conformance Compliant – 2015
- CEF/e-SENS e-Delivery POC including SML/SMP compliance – 2015 to 2017
- CEF WP5.1 AS2 vs AS4 Benchmarking – 2016 to 2017
- CEF/e-SENS ENTSOEG Conformance Compliant – November 2018

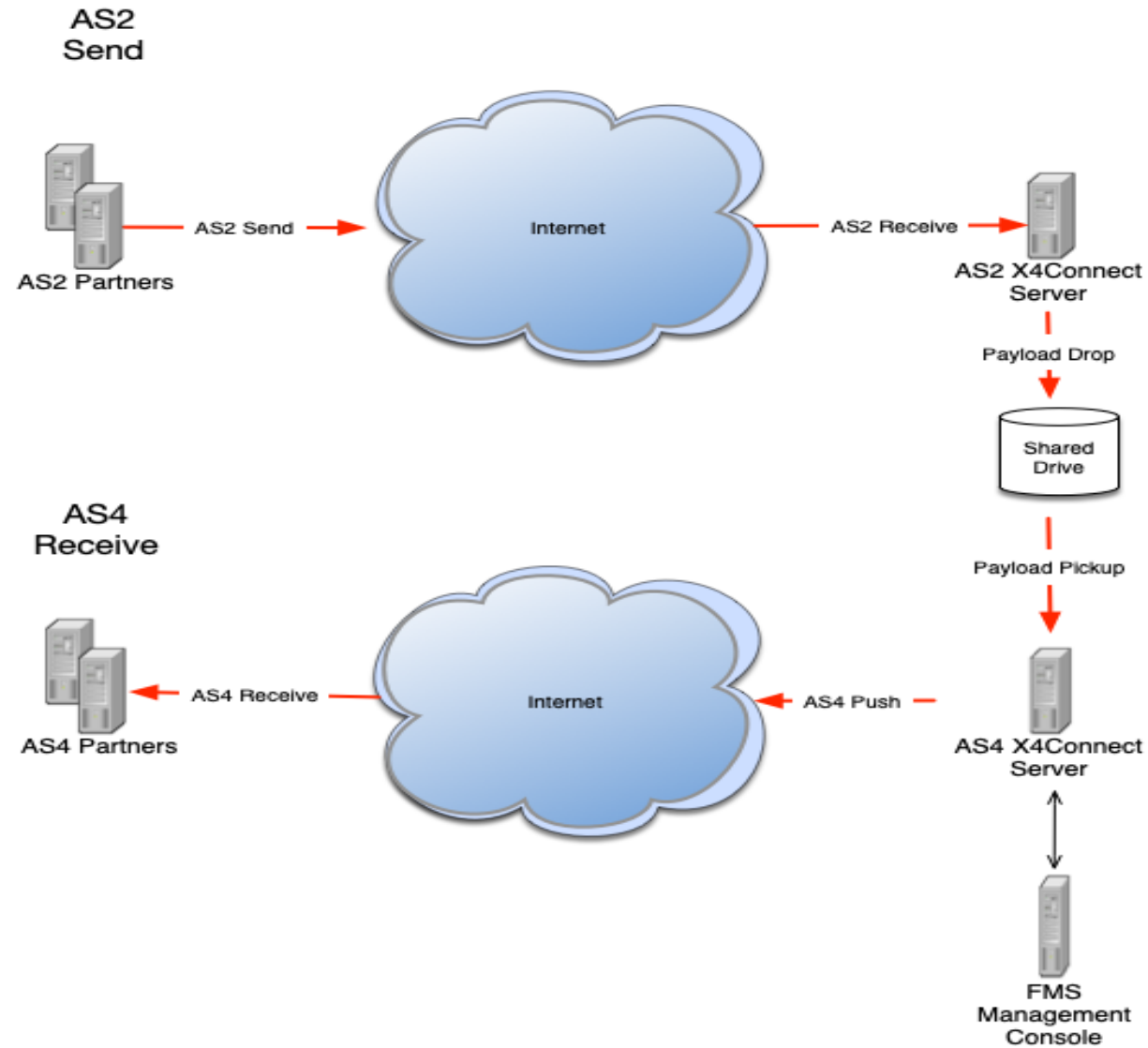
ENTSOG AS4 Requirements

- ENTSOG AS4 Profile conforms to INT0488-161115 AS4 Usage Profile_Rev_3.6 2018-03-27
- ENTSOG Access Point operates as the inner corners in the 4-Corner model
- Support required for oneWay Push.
- Optional support for oneWay Pull, twoWay Push and twoWay Push and Pull
- Party IDs based on EIC Codes for natural gas processing
- Compressed, signed and encrypted SWA payloads
- State of the art security algorithms for message layer security including AES128/192/256 GCM
- Secure Transport Protocol TLSv1.2
- Synchronous Signed Non Repudiation Receipt (NRR) Signals
- Synchronous Error Signals

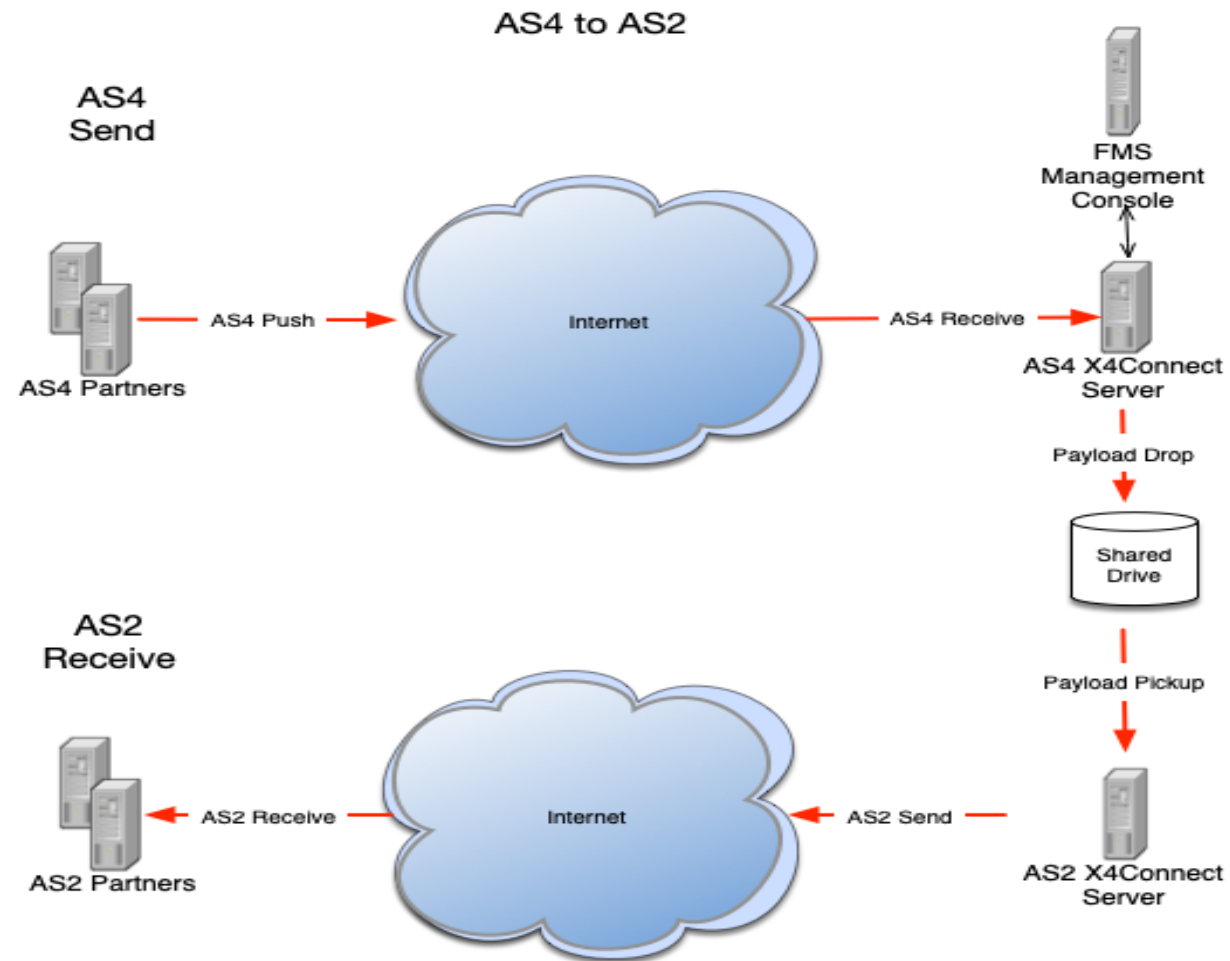
CEF ENTSOG Conformance Status

AS4_ENTSOG_TA01	✓
AS4_ENTSOG_TA02	✓
AS4_ENTSOG_TA03	✓
AS4_ENTSOG_TA04	✓
AS4_ENTSOG_TA05	✓
AS4_ENTSOG_TA06	✓
AS4_ENTSOG_TA07	✓
AS4_ENTSOG_TA08	✓
AS4_ENTSOG_TA09	✓
AS4_ENTSOG_TA10	✓
AS4_ENTSOG_TA11	✓
AS4_ENTSOG_TA12	✓

AS2 to AS4



X4Connect ENTSOEG Bridge



X4Connect ENTSOG Bridge

X4Connect AS4



- X4Connect ENTOSOG MAAS
- ENTOSOG Partner User Agents – 7 (Different AS4 deployments)
- ENTOSOG Partner Geographics
 - Austria
 - Germany
 - Italy
 - Netherlands
 - Spain
 - Switzerland
- Cloud, Hybrid and On Prem deployments
- High Availability, High Volume AS4 Messaging

Additional AS4 Deployments

- Drummond Group International AS4 ITQ Reference System – 2011 to 2015
- ComplianceTest AS4 SuperStream ITQ Test and Reference System – 2012 - 2016
- Ozedi AS4 SuperStream Gateway – FMS Server - 2013 to current
- NAV/IKT AS4 Secure Digital Post Application – 2014 to current
- EPP Domain Registration System – ZACR country codes and gTLDs – 2011 to current
- RosettaNet Invoicing System – Petroleum Industry – 2006 to 2019
- ECS International X4CONNECT AS2 <-> AS4 Bridge – Oil & Gas Industry – 2017 to current



Q&A and Thanks