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AS4 and Managing AS4 Deployment Configurations

EASEE-gas GMoM
Panel Discussion

21 March 2019, Porto, Portugal

Agenda

- AS4 Background
 - ➔ Acronym soup: AS4, OASIS, ENTSOG, EASEE-gas, eDelivery....
- Managing AS4 Deployment Configurations
 - ➔ New Certificate Update messages
 - ➔ New Partner Management Service, EASEE-Connect
- Demo: EASEE-Connect

What is AS4?

- Standard from OASIS for document/data exchange
 - Secure and reliable messaging
 - Payloads can be documents or data in any format
- Latest in a series of “applicability statements” for document interchange
 - More modern successor to (and improvement on) AS2
- Based on state-of-the-art technical specifications
 - Based on Internet and Web Services standards
 - But avoiding complex standards with known interop issues
- Customizable using to-be-agreed parameter settings
 - Features to be used, choice of algorithms etc.

COMMISSION REGULATION (EU) 2015/703 - Network code on interoperability and data exchange rules

Article 21 Common data exchange solution

1. Depending on the data exchange requirements under Article 20(2), one or more of the following types of data exchange may be implemented and used:

(a) **document-based data exchange**: the data is wrapped into a file and automatically exchanged between the respective IT systems;.

2. The common data exchange solutions shall comprise the protocol, the data format and the network. The following common data exchange solutions shall be used for each of the types of data exchange listed in paragraph 1:

(a) For the document-based data exchange:

(i) protocol: **AS4**;

(ii) data format: Edig@s-XML, or an equivalent data format ensuring identical degree of interoperability. Entso-g shall publish such an equivalent data format.

Requirements/Goals for AS4 in Gas Trading and Transfer

- Support gas trading and transfer business processes
 - ⌚ EDIG@S XML documents, defined business processes
- Provide technical capabilities \geq EASEE-gas AS2.
 - ⌚ Signing, encryption, compression
- Comply with security guidance based on state-of-the-art best practices,
 - ⌚ Recommendations for “near term” (defined as “at least ten years”) future system use.
- Simplify implementations
 - ⌚ Narrow AS4 options to a precise subset
- Provide suppliers with detailed guidance regarding the required AS4 functionality.
 - ⌚ Testable in conformance testing

ENTSOG AS4 Usage Profile



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Common Business Practice

Number: 2017-001/01

Subject: Message Transmission Protocol for Document Exchange

Approved: 10-07-2017

Summary

This Common Business Practice promotes the use of AS4 for the transmission of EDIG@S-XML documents.

Implementation Experience since 2016

- At least three Member States are promoting AS4 for national use
- Initiatives in Member States to also use AS4 for electricity data exchange
- ENTSOG AS4 inspired other use of AS4 at European level in other domains and in the Connect Europe Facility (CEF) e-Delivery
- A dozen different AS4 solutions in use by gas companies
- Early issues with conformance and interoperability encountered and fixed
- Choice of suppliers has allowed at least two gas companies to switch products
- Need identified for a mechanism to update certificates
- Need identified for a structured configuration information exchange format to lower cost of implementation

Building Blocks of the European Commission's Connecting Europe Facility



TRANSPORT
€26.25bn

ENERGY
€5.85bn

TELECOM
(DG CNECT)

CEF Digital Building blocks & Digital Service Infrastructures
€970 M *

Broadband
€170 M

CEF Regulation

The Connecting Europe Facility (CEF) is a regulation that defines how the Commission can finance support for the establishment of trans-European networks to reinforce an interconnected Europe.

CEF Telecom Guidelines

The CEF Telecom guidelines cover the specific objectives and priorities as well as eligibility criteria for funding of broadband networks and Digital Service Infrastructures (DSIs).

CEF Work Programmes

Translates the CEF Telecom Guidelines in general objectives and actions planned on a yearly basis.

eDelivery AS4

- eDelivery is one of the **building blocks** of the European Commission's Connecting Europe Facility (CEF).
 - ➔ Reusable specifications, software and services
 - ➔ Intended for use in a wide variety of IT systems in different policy domains of the EU.
 - ➔ Adopted in (roughly) fifty communities/domains
- eDelivery AS4 is the specification for message exchange in eDelivery
 - ➔ eDelivery AS4 has the same technical core as ENTSOG AS4
 - ➔ CEF offers conformance testing for eDelivery AS4

AS4 Configuration Parameters

AS4 profile reduces options, but still requires some parameters to be configured and agreed with partners, for example:

- Party identifiers
- AS4 gateway server address (URL)
- Role headers
- Certificates used for signing and encryption
- Environments (test/production)
- Network addresses (to be allowed by firewalls)

... and some others ...

Patterns in Configuration Updates

Two distinct patterns can be distinguished:

- Routine configuration updates for existing connections
 - ➔ Very common, as most business relations are long-term relations
 - ➔ Main example: certificate expiration
- New connections, or major changes to existing connections
 - ➔ Less common, less uniform, more impact

New Certificate Update Feature

- EASEE-gas “Migration of Certificates” projects:
 - ➔ Synchronized “big bang” update of all certificates
 - ➔ Problem is high overhead, high cost and risks
- Alternative approach: ebCore Certificate Update
 - ➔ Allows parties to use AS4 messages to send new certificates securely, creating a new “agreed” configuration
 - ➔ New certificate (agreement) can be tested before use
 - ➔ Old and new certificates (agreement) can be used in parallel during transition
 - ➔ Equinor is looking for parties to test the feature

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Common Business Practice DRAFT

Number: 2019-000/00

Subject: Agreement update & Certificate exchange

Approved: XXX

Summary

This Common Business Practice specifies the method of agreement update messages and transmitting certificates electronically using ACP.

EASEE-Connect

- More general approach to supporting messaging configuration management
- New service of EASEE-gas for its members
 - Greatly extends functionality of current “Address Book”
- Secure self-service portal
 - Each party is responsible for managing its parameters and keeping them up to date
- Partner / agreement management:
 - Party can select/invite counterparties
 - Social network analogy: self-organizing network principle

EASEE-gas Technology Standard Working Group (TSWG)

- Mission is to develop “*a single communication network for the exchange of business messages between the various market players*”
 - ➔ Develops Common Business Practices (CBPs) are standards, procedures and/or protocols [...] and which are recommended by EASEE-gas for adoption by all relevant industry players to simplify and streamline business processes across the whole of Europe
 - ➔ Security Certificate service <https://easee-gas.eu/security-certificates>
 - ➔ Certificate migrations
 - ➔ EASEE-Connect
 - ➔ <https://easee-gas.eu/working-groups>

DEMO

- EASEE-Connect demo by Wim de Olde (Gasunie)



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Thank you for your attention

For more information:

www.easee-gas.eu