# An interactive workshop for stakeholders to discuss implementation issues and experiences

## AS4 Protocol Workshop

**Prepared by ENTSOG**

Image Courtesy of Thyssengas

# 1. Introduction

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# Introduction



> Material and notes / list of participants to be published

**...hoping that this has been a fully transparent process**

# Structure of event

*Please note all sections (other than the Welcome) will allow time for open discussion*

| No | Description | Time |
|---|---|---|
| 1 | **Opening (ENTSOG)**<br>➤ Welcome/Introduction/History/Structure of Event<br>➤ Objectives | 10:30 - 10:45 |
| | | |
| 2 | **Update on AS4 (Part 1)**<br>➤ Implementation Date (ENTSOG)<br>➤ Reminder of POC (ENTSOG)<br>➤ Progress this year (ENTSOG)<br>    ○ Updated Usage Profile<br>➤ Questions and Answers (All) | 10:45 – 11:45 |
| | | |
| | | |
| | **Coffee Break** | **11:45 – 12:00** |
| | | |
| 3 | **Update on AS4 (Part 2)**<br>➤ Certificate Exchange Management (Consultant/ENTSOG)<br>➤ Overview of Vendors in the Market (Consultant)<br>➤ Other AS4 Implementations<br>➤ Questions and Answers (All) | 12:00 – 12:45 |
| | | |
| | **Lunch** | **12:45 – 13:45** |
| | | |
| 4 | **Vendor Presentations**<br>➤ Questions and Answers (All) | 13:45 – 14:45 |
| | | |
| | **Coffee Break** | 14:45– 15:00 |
| | | |
| 5 | **Members Presentations on AS4 Implementations**<br>➤ Questions and Answers (All) | 15:00 – 15:45 |
| | | |
| 6 | **Closing Remarks (ENTSOG)** | 15:45 – 16:00 |

> Objective: For ENTSOG to update our stakeholders on the AS4 Usage Profile, reminding our members of the implementation date, and to share experiences of implementations from members and vendors

> How will this be achieved:
  - By a reminder of the implementation requirements
  - By a reminder of the AS4 PoC
  - By presenting the updated AS4 ENTSOG Usage Profile
  - Vendors and members presentations
  - Question and Answer Sessions

# 2. Update on AS4 (Part 1) – Network Code Implementation Date

Jef DeKeyser

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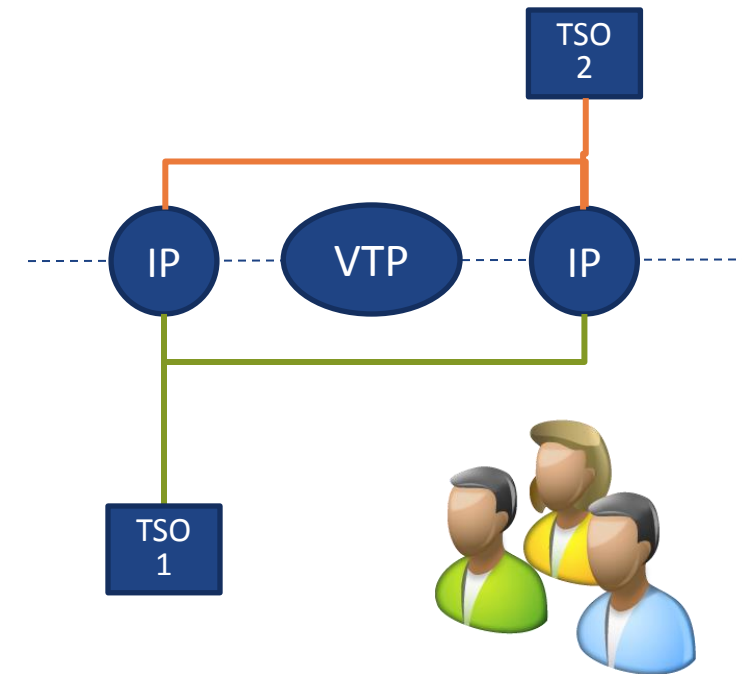# 2. NC Interoperability and Data Exchange Implementation

- Commission Regulation (EU) 2015/703 establishing a network code on interoperability and data exchange rules shall apply from **1 May 2016**

- TSOs have to be in a position to support the **standard data exchange solution(s)** as defined in the common network operation tools

- **Chapter 5**, Articles 20, 21, 22, 23 and 24 refer to the data exchange provisions of the network code

- **TSOs** are obliged **to offer the possibility to communicate using a standard data exchange solution** as described in the common network operation tools (AS4 and Edig@s XML)

# Chapter V. Data Exchange
# Article 20: General provisions

TSO 2

TSO 1

IP — VTP — IP

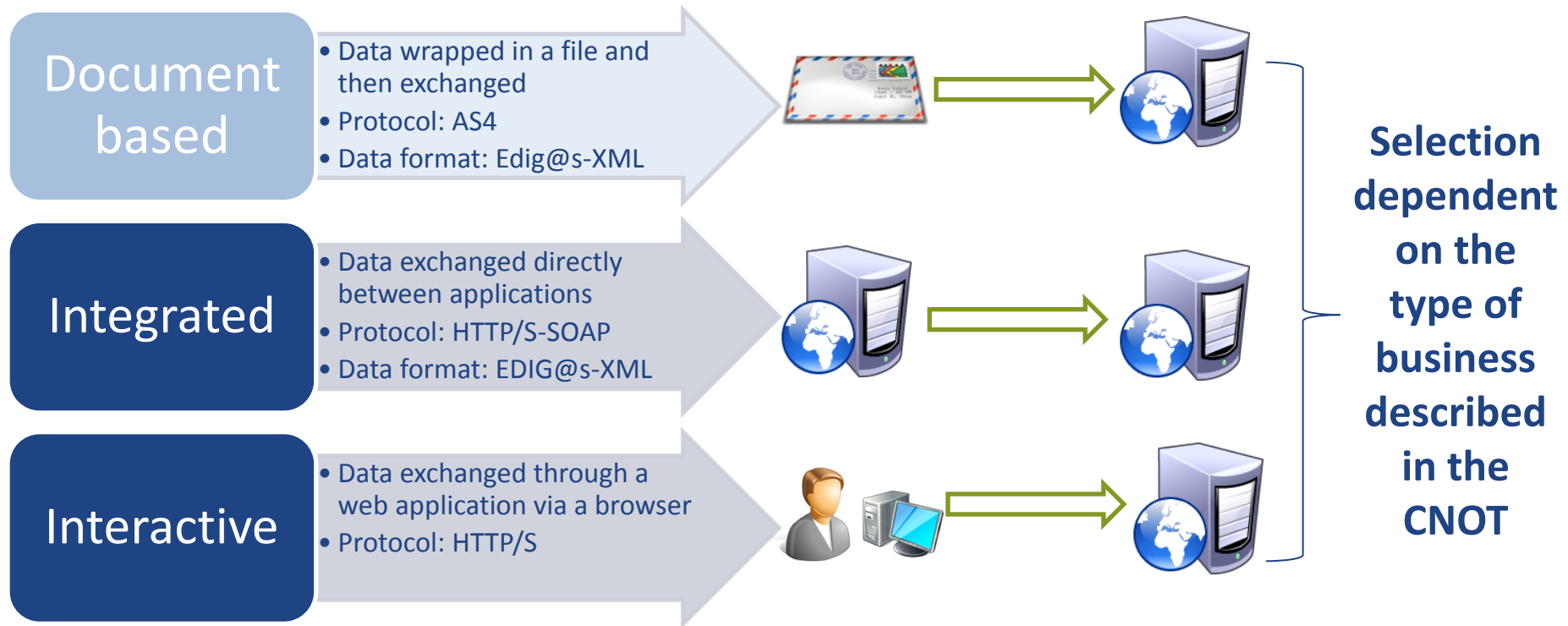**Network users active at IPs or IPs and VTPs**

**SCOPE**

- Congestion Management Procedures
- NC Capacity Allocation Mechanisms
- NC Gas Balancing
- NC Interoperability & DE
- REMIT

# V. Data Exchange
## Article 21: Common Data Exchange Solutions

**Document based**
- Data wrapped in a file and then exchanged
- Protocol: AS4
- Data format: Edig@s-XML

**Integrated**
- Data exchanged directly between applications
- Protocol: HTTP/S-SOAP
- Data format: EDIG@s-XML

**Interactive**
- Data exchanged through a web application via a browser
- Protocol: HTTP/S

**Selection dependent on the type of business described in the CNOT**

# V. Data Exchange
## Article 23: Implementation of Common Data Exchange Solutions

TSOs shall implement the common DE solution within 12 months of when NC comes into force

Parties who cannot communicate with TSOs with their existing DE protocol shall also use the common DE solution

Existing solutions can stay in place as long as they are compliant with the data exchange requirements for the corresponding business processes subject to NRA approval

# Questions and Answers

# Any Questions?

# 2. Update on AS4 (Part 1) - Reminder of PoC

Jef de Keyser

*System Operation Adviser*

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# 2. Reminder of PoC in 2014

**PoC - Objectives:**

- **Validate** (and if needed, fine-tune) the ENTSOG AS4 profile parameters
- **Demonstrate interoperable** exchange of AS4 messages among multiple organisations using multiple products (or prototypes)
- Validate AS4 **functionality**

**PoC – Test Scenarios**

> **Core B2B features**
- Packaging, metadata
- Compression

> **Reliable messaging**
- Retries, receipts

> **Security**
- Transport layer security
- Message layer signing and encryption

# 2. Reminder of PoC in 2014
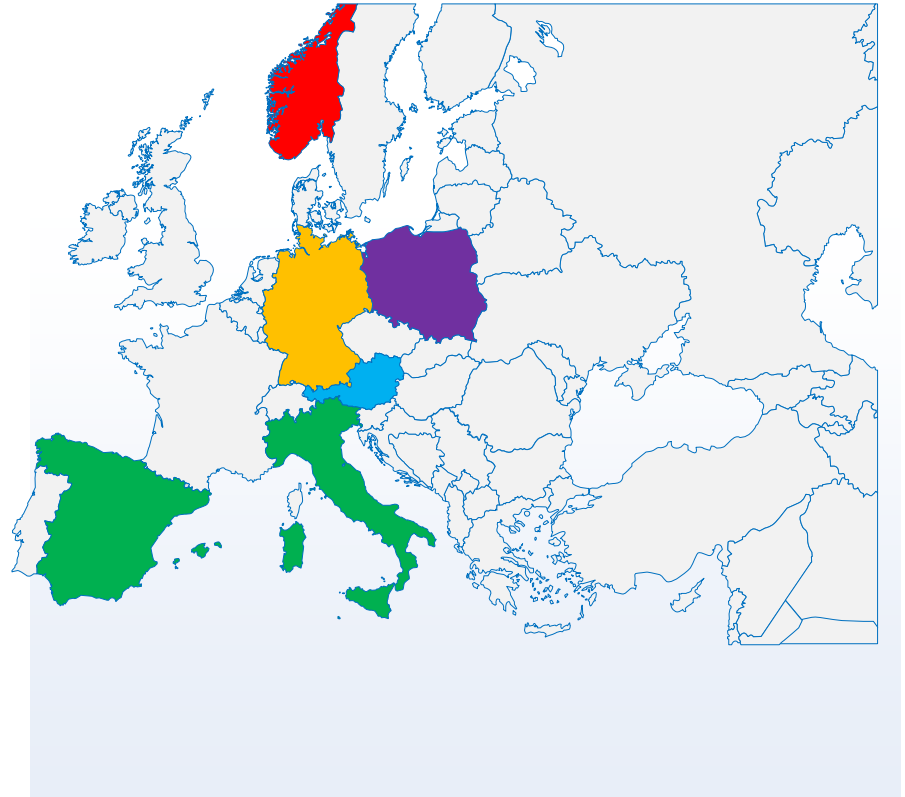
> Parties:

- Transmission System Operators:
  - **ENAGAS (ES)**
  - **GAS CONNECT AUSTRIA (AT)**
  - **GASSCO (N)**
  - **Gaz-System (PL)**
  - **SNAM RETE GAS (IT)**
  - **Thyssengas (Westnetz) (D)**
- Trader
  - **ENI (IT)**

> Solution vendors:

- **Ades – AT**
- **Axway - F**
- **Seeburger – D**
- **Software AG – D**
- **Tibco – USA**

# 2. Reminder of PoC in 2014

**PoC – Conclusions:**

- The PoC start took **more time than planned** due to time needed
    - to **configure** the required test environment and fire-walls,
    - to obtain the required **resources** and
    - to **deploy** the products for testing
- The existing AS4 **Usage Profile is considered clear** to all participants to give guidance for an AS4 configuration
- Involvement of **multiple products make test more complicated** but the successful overall result confirmed the major interoperability of AS4 solutions
- **Issues related to security** could **also** appear **with other protocols** due to the applied increased security standards/requirements

# 2. Update on AS4 (Part 1) - AS4 Usage Profile Update

Jackie Manning

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# 2. AS4 Usage Profile Update

**Objectives of AS4 Usage Profile:**

- Support exchange of EDIG@S-XML documents and other payloads
- Support business processes in the gas sector
- Leverage experience gained with other B2B protocols, such as AS2 as described in the EASEE-gas implementation guide
- Provide security guidance based on state-of-the-art best practices, following recommendations for "near term" (defined as "at least ten years") future system use
- Provide suppliers of AS4-enabled B2B communication solutions with guidance regarding the required AS4 functionality

**HTTP Envelope**

**SOAP 1.2 with Attachments MIME Envelope**

MIME Part

SOAP 1.2 Envelope

SOAP Header

eb:Messaging

eb:UserMessage

eb:MessageInfo

eb:PartyInfo

eb:CollaborationInfo

eb:MessageProperties

eb:PayloadInfo

wsse:Security

Empty SOAP 1.2 Body

MIME Part (Compressed, Signed, Encrypted Document)

MIME Part(s) (Compressed, Signed, Encrypted Attachments)

```
POST /as4handler HTTP/1.1
Host: receiver.example.com:8893
User-Agent: Turia
Content-Type: multipart/related; start="<f8df1904-a6b9-422b-8239-6a971838503f@sender.example.com>";
boundary= "c5bae1842d1e"; type="application/soap+xml"
Content-Length: 472639

--c5bae1842d1e
Content-Id: <f8df1904-a6b9-422b-8239-6a971838503f@sender.example.com>
Content-Type: application/soap+xml; charset="UTF-8"

<S12:Envelope xmlns:S12="http://www.w3.org/2003/05/soap-envelope"
 xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-secext-1.0.xsd"
 xmlns:wsu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-1.0.xsd"
 xmlns:eb3="http://docs.oasis-open.org/ebxml-msg/ebms/v3.0/ns/core/200704/">
 <S12:Header>
   <eb3:Messaging wsu:Id="_18f85fc2-a956-431e-a80e-09a10364871b">
     <eb3:UserMessage>
       <eb3:MessageInfo>
         <eb3:Timestamp>2016-04-03T14:49:28.886Z</eb3:Timestamp>
         <eb3:MessageId>2016-921@5209999001264.example.com</eb3:MessageId>
       </eb3:MessageInfo>
       <eb3:PartyInfo>
         <eb3:From>
           <eb3:PartyId>21X-EU-A-X0A0Y-Z</eb3:PartyId>
           <eb3:Role>ZSH</eb3:Role>
         </eb3:From>
         <eb3:To>
           <eb3:PartyId>21X-EU-B-P0Q0R-S</eb3:PartyId>
           <eb3:Role>ZSO</eb3:Role>
         </eb3:To>
       </eb3:PartyInfo>
       <eb3:CollaborationInfo>
         <eb3:AgreementRef>2016-3</eb3: AgreementRef>
         <eb3:Service>A06</eb3:Service>
         <eb3:Action> http://docs.oasis-open.org/ebxml-msg/as4/200902/action</eb3:Action>
         <eb3:ConversationId>2016-921</eb3:ConversationId>
       </eb3:CollaborationInfo>
       <eb3:PayloadInfo>
        <eb3:PartInfo href="cid:0b960692-a3c6-4e85-80da-36009d3ae043@sender.example.com">
          <eb3:PartProperties>
            <eb3:Property name="MimeType">application/xml</eb3:Property>
            <eb3:Property name="CharacterSet">utf-8</eb3:Property>
            <eb3:Property name="CompressionType">application/gzip</eb3:Property>
            <eb3:Property name="EDIGASDocumentType">01G</eb3:PartProperties>
         </eb3:PartInfo>
       </eb3:PayloadInfo>
     </eb3:UserMessage>
   </eb3:Messaging>
   <wsse:Security xmlns:wsse="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-
secext-1.0.xsd"
     xmlns:wsu="http://docs.oasis-open.org/wss/2004/01/oasis-200401-wss-wssecurity-utility-
1.0.xsd">
       <!-- details omitted -->
   </wsse:Security>
 </S12:Header>
 <S12:Body wsu:Id="_b656ef2c-516"/>
</S12:Envelope>

--c5bae1842d1e
Content-Id: <0b960692-a3c6-4e85-80da-36009d3ae043@sender.example.com>
Content-Type: application/octet-stream
Content-Transfer-Encoding: binary

BINARY CIPHER DATA

--c5bae1842d1e--
```

# 2. AS4 Usage Profile Update

**Section 2.2.8 Configuration Management:**

- ENTSOG identified the requirement for automated exchange and management of AS4 configuration data

- The main initial requirement is for the automated exchange of X.509 certificates for renewal (Agreement Update)

- A prerequisite for an anticipated future agreement update protocol specification; AS4 products must provide an Application Programming Interface (API) to:
  - Create
  - Read
  - Update
  - Delete AS4 Configuration Data

- An XML schema for Agreement Updates has been submitted to OASIS ebCore Technical Committee for standardisation

# 2. AS4 Usage Profile Update

**Section: 2.3.1.1 Party Identification:**

- A Party must be identified by an **EIC code**

- AS4 Party Identifiers identify the communication party and may be:
  1. The entity involved in the business transaction
  2. A 3rd party providing B2B communication services for other entities

  **For the 2nd case there are 2 options for the P-Mode parameters:**
  1. The communication party may impersonate the business entity, the AS4 Party identifier is the identifier of the business entity
  2. The business entity may delegate message processing to the communication party, the AS4 Party identifier is the communication partner

# 2. AS4 Usage Profile Update

**Section: 2.3.1.2 Business Process Alignment:**

- Several mandatory headers in AS4 serve to carry metadata to align a message exchange to a business process or to a technical service

  - **Section: 2.3.1.2.1 Service**
    - The Service and Action header elements in the UserMessage/ CollaborationInfo group relate a message to:
      - o The business process that the message relates to
      - o The roles that the sender and receiver perform
      - o Or to a technical service
    - Used for business processes that are currently modelled by ENTSOG and EASEE-gas
    - Specified in the ENTSOG Mapping Table published on our website
    - Values are taken from an EDIG@S processes area code list

# 2. AS4 Usage Profile Update

**Section 2.3.1.2.2 Action**

- The Action Header identifies an operation or activity in a Service
  - Must be used in AS4 Messages
  - Value is currently set as the default action http://docs.oasis-open.org/ebxml-msg/as4/200902/action
  - Specified in the ENTSOG Mapping Table published on our website

# 2. AS4 Usage Profile Update

## Section 2.3.1.2.3 Role

- The mandatory AS4 headers UserMessage/PartyInfo/{From and To} Role elements define the role of the entities sending and receiving the AS4 message for the specified Service and Action

  - Must be used in AS4 Messages

  - Values will relate to the EDIG@S document content:
    For example in an EDIG@S v5.1 Nomination document these are:
    - ZSH (Registered Network User) for the from Role type and
    - ZSO (Transit System Operator) for the to Role Type

  - Specified in the ENTSOG Mapping Table published on our website

  - For services not related to the gas business processes, or services not covered by EDIG@S, no convention is defined by this profile

# 2. AS4 Usage Profile Update

**Section: 2.3.1.2.4 ENTSOG AS4 Mapping Table:**

ENTSOG maintains and publishes in collaboration with EASEE-gas, the ENTSOG AS4 Mapping Table containing columns for the following values:

- **EDIG@S process category** (e.g. Nomination and Matching)
- **Service value to use in an AS4 message carrying the EDIG@S document** (e.g. A06)
- **Action value:** The default action: http://docs.oasis-open.org/ebxml-msg/as4/200902/action specified in the AS4 standard [AS4]
- **From/Role**: e.g. ZSH
- **To/Role**: e.g. ZSO
- **Part Property:** Document type element code for the type child element of the EDIG@S document root element (e.g. ANC)
- **EDIG@S XML document schema** (e.g. NOMINT)

# 2. AS4 Usage Profile Update

## Section: 2.3.1.2.4 ENTSOG AS4 Mapping Table:

| | Edigas Process Area Value | AS4 Service | AS4 Action | From/Role Code | Party Role Value |
|---|---|---|---|---|---|
| 1 | | | | | |
| 109 | Edigas 5.1 Nomination and Matching Processes | A06 | http://docs.oasis-open.org/ebxml-msg/as4/200902/action | ZSH | Registered Network User |
| 110 | Edigas 5.1 Nomination and Matching Processes | A06 | http://docs.oasis-open.org/ebxml-msg/as4/200902/action | ZSO | Transit System Operator |
| 111 | Edigas 5.1 Nomination and Matching Processes | A06 | http://docs.oasis-open.org/ebxml-msg/as4/200902/action | ZSH | Registered Network User |
| 112 | Edigas 5.1 Nomination and Matching Processes | A06 | http://docs.oasis-open.org/ebxml-msg/as4/200902/action | ZSO | Transit System Operator |
| 113 | Edigas 5.1 Nomination and Matching Processes | A06 | http://docs.oasis-open.org/ebxml-msg/as4/200902/action | ZSO | Transit System Operator |
| 114 | Edigas 5.1 Nomination and Matching Processes | A06 | http://docs.oasis-open.org/ebxml-msg/as4/200902/action | ZSO | Transit System Operator |
| 115 | Edigas 5.1 Nomination and Matching Processes | A06 | http://docs.oasis-open.org/ebxml-msg/as4/200902/action | ZSO | Transit System Operator |
| 116 | Edigas 5.1 Nomination and Matching Processes | A06 | http://docs.oasis-open.org/ebxml-msg/as4/200902/action | ZSO | Transit System Operator |
| 117 | Edigas 5.1 Nomination and Matching Processes | A06 | http://docs.oasis-open.org/ebxml-msg/as4/200902/action | ZSH | Registered Network User |
| 118 | Edigas 5.1 Nomination and Matching Processes | A06 | http://docs.oasis-open.org/ebxml-msg/as4/200902/action | ZSH | Registered Network User |
| 119 | Edigas 5.1 Nomination and Matching Processes | A06 | http://docs.oasis-open.org/ebxml-msg/as4/200902/action | ZSO | Transit System Operator |
| 120 | Edigas 5.1 Nomination and Matching Processes | A06 | http://docs.oasis-open.org/ebxml-msg/as4/200902/action | ZSO | Transit System Operator |
| 121 | Edigas 5.1 Nomination and Matching Processes | A06 | http://docs.oasis-open.org/ebxml-msg/as4/200902/action | ZSH | Registered Network User |
| 122 | Edigas 5.1 Nomination and Matching Processes | A06 | http://docs.oasis-open.org/ebxml-msg/as4/200902/action | ZSO | Transit System Operator |

# 2. AS4 Usage Profile Update

## Section: 2.3.1.2.4 ENTSOG AS4 Mapping Table:

| | To/Role Cod | Party Role Value | Part Property EDIG@S Document Type Code | EDIG@S Document Type Name |
|---|---|---|---|---|
| 109 | ZSO | Transit System Operator | 01G | Nomination |
| 110 | ZSH | Registered Network User | 07G | Matching Notice |
| 111 | ZSO | Transit System Operator | 01G | Nomination |
| 112 | ZSO | Transit System Operator | ANC | Forwarded single sided nomination |
| 113 | ZSO | Transit System Operator | AND | Interruption notice |
| 114 | ZSO | Transit System Operator | 26G | Callup Notice |
| 115 | ZSO | Transit System Operator | 27G | Callup Response |
| 116 | ZSO | Transit System Operator | 08G | Confirmation Notice |
| 117 | ZSO | Transit System Operator | 01G | Nomination |
| 118 | ZSO | Transit System Operator | 01G | Nomination |
| 119 | ZSH | Registered Network User | 08G | Confirmation Notice |
| 120 | ZSH | Registered Network User | 08G | Confirmation Notice |
| 121 | ZSO | Transit System Operator | 01G | Nomination |
| 122 | ZSH | Registered Network User | 08G | Confirmation Notice |

# 2. AS4 Usage Profile Update

**Section: 2.3.1.2.4 ENTSOG AS4 Mapping Table:**

| | J — Actual Sequence Diagram Steps | K — Schema Type Value |
|---|---|---|
| 09 | Nomination | NOMINT |
| 10 | Processed Notice | NOMRES |
| 11 | Nomination (adjusted) | NOMINT |
| 12 | Forwarded single sided nomination | DELORD |
| 13 | Interruption Notice | NOMRES |
| 14 | Callup Notice | DELORD |
| 15 | Callup Response | DELRES |
| 16 | Confirmation Notice | NOMRES |
| 17 | Nomination | NOMINT |
| 18 | Nomination | NOMINT |
| 19 | Confirmation Notice | NOMRES |
| 20 | Confirmation Notice | NOMRES |
| 21 | Nomination | NOMINT |
| 22 | Confirmation Notice | NOMRES |

# 2. AS4 Usage Profile Update

**Section: 2.3.2 Agreement Ref:**

The AgreementRef element is profiled as follows:

- The element MUST be present in every AS4 message
- Its value MUST be agreed between each pair of gas industry parties exchanging AS4 messages conforming to this profile
- Its value MUST unambiguously identity Sender's X.509 signing certificate and Receiver's X.509 encryption certificate

**Section 2.3.5 Message Payload and Flow Profile**

- If the Action identifier is set to the AS4 default action
- And the exchanged business document is an EDIG@S XML document
- The PartProperty MUST be included in Part Properties with a name of EDIGASDocumentType set to the same value as the top-level type element in the EDIG@S XML document (e.g. 01G)
- The part property EDIGASDocumentType **MUST NOT** be used with payloads that are not EDIG@S XML business documents

# 2. AS4 Usage Profile Update

**How to set up a System:**

This document is aimed at users that need to set up the AS4 protocol in their organisations and need a basic understanding of how B2B communication using AS4 fits in IT environments. It explains, at a high level:

- The concepts of communication using the AS4 protocol
- Describes the communication layer in an AS4 data exchange
- Explains the concept, benefits and general requirements of a B2B Gateway
- A sample deployment scenario is presented

# 2. AS4 Usage Profile Update

**How to set up a System :**

The purpose of this document is to:

- Provide general high-level information on B2B document exchange and its position in the enterprise IT landscape
- Describe key steps that organisations need to take to implement AS4 in their organisation
- This document is informative only and it may be used as a guideline or good practice and provides some example setups, but does not mandate a particular way of implementing AS4
- Most of this document covers generic B2B communication topics that are not tied to any distinguishing feature of the AS4 protocol

# 2. AS4 Usage Profile Update

**How to set up a System:**

The document covers:

AS4 Communication Concept:

- Data Exchange Concepts and Layers

- B2B Gateway Concept and Requirements

- Benefits of a B2B Gateway

- Sample AS4 Gateway System Perspective

Deploying AS4

- Selecting an AS4 Gateway

- Initial Deployment - Internal and External Integration

- How to Set up a Connection: Initial Configuration of a Communication
  Partner
  Configuring a Partner for a Service

- Updating Configurations and Certificates

- Using a Service Provider

# Future Developments for Data Exchange

- **Automated Certificate Exchange Mechanism**

- **Automated Configuration of AS4 Systems**

- **Investigation of Web Services Profile**

- **Continued maintenance of AS4 Usage Profile**

# Questions and Answers

# Any Questions?

**Coffee Break 11:45 – 12:00**

# 2. Update on AS4 (Part 2)

Pim van der Eijk

Consultant

Sonnenglanz consulting

# 3. Updates on AS4

- **Solution for Certificate Management and Exchange**
  Using AS4, AS4 profiling and new ebCore AU specification

- **Automatic Configuration of AS4 Configuration**
  New work item

- **Other User Communities adopting AS4**

- **Vendors supporting AS4 and ENTSOG Profile**

- **Interoperability of AS4 Products**

# 2. Update on AS4 (Part 2) Certificate Exchange Mechanism

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# 3. Certificate Exchange Management

**Requirements (1)**

- Organisations should be able to obtain certificates from their preferred supplier
  - No community-imposed CA
- No fixed community-wide date/time for certificate rollover
- Decouple certificate implementation at a party from implementation at counterparties
  - Transition interval in which both the "old" and the "new" certificate can be used
  - Switch is not a critical bottleneck in operations
  - New certificate can be tested, and there is a fallback option in case of issues

# 3. Certificate Exchange Management

## Requirements (2)

- It should be possible to test a new production certificate without sending a production business message
  - To prevent an issue with the certificate from causing failure of business messages

- Notifications to counterparties on certificate switch and the import into their systems should be streamlined.
  - Structured format to support automated processing
  - Asynchronous exchange to support manual checks, change management procedures

# 3. Certificate Exchange Management

**Three Building Blocks for Certificate Exchange Management**

- AS4 Test Service
  - Predefined "Ping-like" Service-Action pair
  - Receipt or Error confirms (un)successful configuration
- AS4 AgreementRef
  - Header that indicates which (technical) "agreement" is in place, and hence which certificates to use
  - Agreements have validity intervals
  - Multiple agreements can be active in parallel
- ebCore Agreement Update
  - New specification from OASIS ebCore TC

# 3. Certificate Exchange Management

**ebCore Agreement Update**

- Specification under development in OASIS ebCore TC
  - Currently an Committee Specification Draft
  - Soon to be published for Public Review
- Defines a protocol for parties to negotiate new agreements as updates of existing agreements
  - Certificate Update is a special case
  - Built-in extensibility to other types of updates
- Protocol based exchange of three types of XML messages for:
  - Requesting an Update  (e.g. proposing a new cert)
  - Accepting an Update
  - Rejecting an Update

# 3. Certificate Exchange Management

**Benefits**

- Streamlines routine updates of existing partner configurations
  - Less risk of configuration errors
  - Less configuration
  - No interruption to real-time, critical 24x7 operations
- Standard ebCore Agreement Update Format
  - Can be parsed, validated, imported, exported automatically
  - Vendor-neutral format, vendors already expressing interest in supporting it
  - Support to become mandatory in future releases of ENTSOG profile

# 2. Update on AS4 (Part 2) Automatic Configuration

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# 3. Automatic Configuration

## Automating Initial Configuration of a Partner

- Limits of Agreement Update:
  - Simple changes only
  - Assumes there is an initial agreement to be updated
- Enhancement request:  configure a new partner (from scratch)
  - Typically done bilaterally or using a registry or "Address Book"
  - Parameters include Party  Identifiers, certificates, IP addresses,  endpoint URIs, services to use, protocol parameters
  - Initial "Agreement" can be formed by unifying / merging your parameters with your counterparty's parameters

# 3. Automatic Configuration

**Automating Initial Configuration of a Partner (cont'd)**

- Approach similar to Agreement Update, but more complex
  - XML representation format
  - Specification of unification / merge algorithm
  - Exchange protocol (message exchanges)
- Ongoing Standardization
  - ebCore CPPA3
    - CPP collaboration protocol profile, parameters for one party
    - CPA collaboration protocol agreement, parameters for an agreement
  - Version 3 updates existing version 2 with support for AS4 and AS2, WS-*
  - Draft Specification, early days

# 2. Update on AS4 (Part 2)
## Other communities using AS4

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# 3. Other Communities Adopting AS4

**Australia**

- SuperAnnuation
- Standard Business Reporting, SBR

**E-Government in Europe**

- E-CODEX
- E-SENS (Electronic Simple European Networked Services)
- Connect Europe Facility (CEF)

**International Air Transport Association**

- Electronic Technical Advisory Group (e-TAG)
  - Development of draft AS4  profiles for e-Cargo business
    - Advanced Profile and Basic Profile
  - Proof-of-concept, validating the profiles
  - Interested parties may contact IATA at syedt@iata.org

# 3. Other Communities Adopting AS4

**Other**

- Secure Digital Mail

- Maritime Surveillance

- Exchange of Social Security Information

- Residential Mortgage Credit (US)

- Petroleum Industry

**Initial interest**

- Utility industry (Germany)

- Aerospace Logistics and Technical Data Exchange (Europe)

- Health, finance, insurance, retail

# 2. Update on AS4 (Part 2)
# Overview of Vendors in the Market

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# 3. Overview of vendors in the market

**Types of AS4 Solutions**

- B2B Gateways or Components
  - Gateways are solutions for (large) enterprises, typically multi-protocol, multi-backend
  - Components, to be integrated into your application
- Generic or Industry-Specific
  - Gas industry solutions may also cover business functions, content processing
- Software or Service
  - On-Premise or Cloud-based
- Oriented towards developers or end-users
- Regional or International players

# 3. Overview of vendors in the market

**ADES**

- "AS4", component or part of File Processing Appliance

**Axway**

- B2Bi since 10/2014
- Interchange 5.12

**Flame**

- Flame Messaging Server and Light Client (FMS)
- Available via ECS International (Netherlands)

**IBM**

> Product

- IBM B2B Advanced Communications 1.0.0.2, available since April 2014
- Optional part of IBM Sterling B2B Integrator

**Microsoft**

> Azure – Integration & API Management?

**N-Software**

- EDI Integrator V9, available end of 2015

# 3. Overview of vendors in the market

**OBAN**

- ObanB2B Messaging Gateway, available in Europe as SAAS

**OpenText**

- TBD **– still waiting for input –**

**Oracle**

- AS4 as a patch on Oracle B2B 12.1.3 (Feb. 2015)

**Ponton**

- Ponton X/P 3.2, AS4 since 2014

**Seeburger AG**

- AS4 Adapter for Business Integration Server (BIS) 6, available since March 2015

**Software AG**

- Webmethods Module for AS4, available April 2014, updated May 2015

**Tibco**

- Tibco BusinessConnect ebXML Protocol 6.0.0

# 3. Overview of vendors in the market

**Applied Technologies**

- Products Apptech Communicator and EnergyDatahub
**Bosch Inubit**

- Product Marktkommunikation – Prozesspaket GPKE/GeLiG

## 2. Update on AS4 (Part 2)
## AS4 Interoperability Tests

Pim van der Eijk

Consultant

Sonnenglanz consulting

# 3. AS4 Interoperability Tests

**Drummond Group,  Interop Tests**

- 3Q13: Axway, Flame, Oban, Tibco

- 3Q14: Axway, Flame, IBM, Oracle, Software AG

**Features Tested**

- Light Client (28) and ebHandler (32)
- Push, Pull, Sync and Async Receipts, RA and NRR receipts, Password Auth, XML Signature, Encryption, Compression, Different message sizes

# 2. Update on AS4 (Part 2) Interoperability PoCs in Europe

Pim van der Eijk

Consultant

Sonnenglanz consulting

# 3. Interoperability PoCs in Europe

**ENTSOG PoC, Q3 2014**

- ENTSOG Profile for TLS, Signing, Encryption, Compression, Reliable Messaging and Receipts (11)
- Axway, ADES, Seeburger, Software AG, Tibco

**EU E-SENSQ3 2015**

- Focused on e-SENS Profile
- Signing, Encryption, Compression, Two Way (3)
- Axway, IBM, Flame + open source

# 2. Update on AS4 (Part 2) Questions and Answers

Pim van der Eijk

Consultant

Sonnenglanz consulting

# 3. Questions and Answers

**Error Handling:**

> Which Error codes are to be used in the Entsog Usage Profile?

- The regular ebMS3 / AS4 error codes are used. No additional codes are defined in the Usage Profile

> Do AS4 errors have to be signed?

- Not mandatory. They should be, but they can't always be.

**Agreements:**

> What information is included in an agreement?

- An agreement denotes a set of Pmodes. In the Usage Profile, all Pmodes in an agreement have the same signing and encryption certificates

> What naming convention applies to agreement identifiers?

- None is defined so far, but it is agreed for future development
- Guid values are an option, although the standard does not require universally unique values

# 3. Questions and Answers

**Agreements:**

> How many agreements exist between two partners?
- At least one, and two overlapping agreements during renewal period

> What happens upon certificate renewal?
- A new agreement is created that is identical to the old one, except for the certificates used

> Are there constraints on combinations of Party Identifiers, Agreements and Certificates?
- Agreements are unique per pair of parties
- Per agreement one set of signing/encryption certificates

> Which certificate is used in case of impersonation?
- The one configured for the agreement and associated Pmodes

# 3. Questions and Answers

**Duplicate Elimination:**

> Why is it needed?
- To handle the "lost receipt" situation, prevent messages from being delivered more than once

> What is the detection window?
- At least as long as the retry interval
- In Entsog, maximum of an hour suffices

**Encryption:**

> Why is there a reference to symmetric keys for key transport?
- The cert is used to encrypt a symmetric key that is used to encrypt the data

> Is there a recommendation for key transport algorithms?
- Yes, but they are recommended, not mandatory

# 3. Questions and Answers

**Encryption:**

> Are the algorithms supported in products?

- Yes, but not by all products
- We will contact ENISA on allowing "older" algorithms during a transition phase

**Token References:**

> Which token reference mechanism in WS-Security is to be used?

- There are three options and Usage Profile currently allows all of them
- BinarySecurityToken is the most interoperable option, future versions may mandate support for this by all products

# 3. Questions and Answers

**Agreement Update:**

> What is the impact of AU on the AS4 component?
  - No direct impact, it can be handled outside the component
  - AU can be handled automatically or manually

**Encryption**

> What is the MIME type of an encrypted compressed payload?
  - Application/octet-stream (but application/gzip sometimes used)

> Are receipts and errors encrypted?
  - No, superfluous and may cause interop issues

> Is the empty SOAP Body to be encrypted?
  - Issue to be clarified by OASIS TC

# 3. ENTSOG Interoperability PoC 2016

**ENTSOG Second Interoperability PoC**

- Not yet decided, under consideration
- Goal would be to provide an opportunity to TSOs and their solution providers to test their AS4 implementations for 1 May 2016
- Planned Q1 2016
- Setup could be similar to 2014 PoC
- Interested parties should contact Jackie.Manning@entsog.eu

# Questions and Answers

# Any Questions?

*Lunch break*
*12:45 – 13:45*

# 4. Vendor Presentations

- **Axway**

- **Virtimo AG partner of BOSCH SI**

- **eBluePrint**

- **Ponton**

- **Seeburger**

- **N/Software**

# Questions and Answers

# Any Questions?

# Coffee Break 14:45 – 15:00

# 5. Member Presentations

- **Fluxys**

- **SNAM**

# Questions and Answers

# Any Questions?

# 6. Closing remarks

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ENTSOG

# Thank You for Your Attention

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