

Joint ENTSOG / EASEE-Gas Workshop on Data Communication Harmonisation for Gas Transmission



2. Welcome and objectives

Hendrik Pollex, System Operations Director

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Structure of event



Main Topics for the Workshop

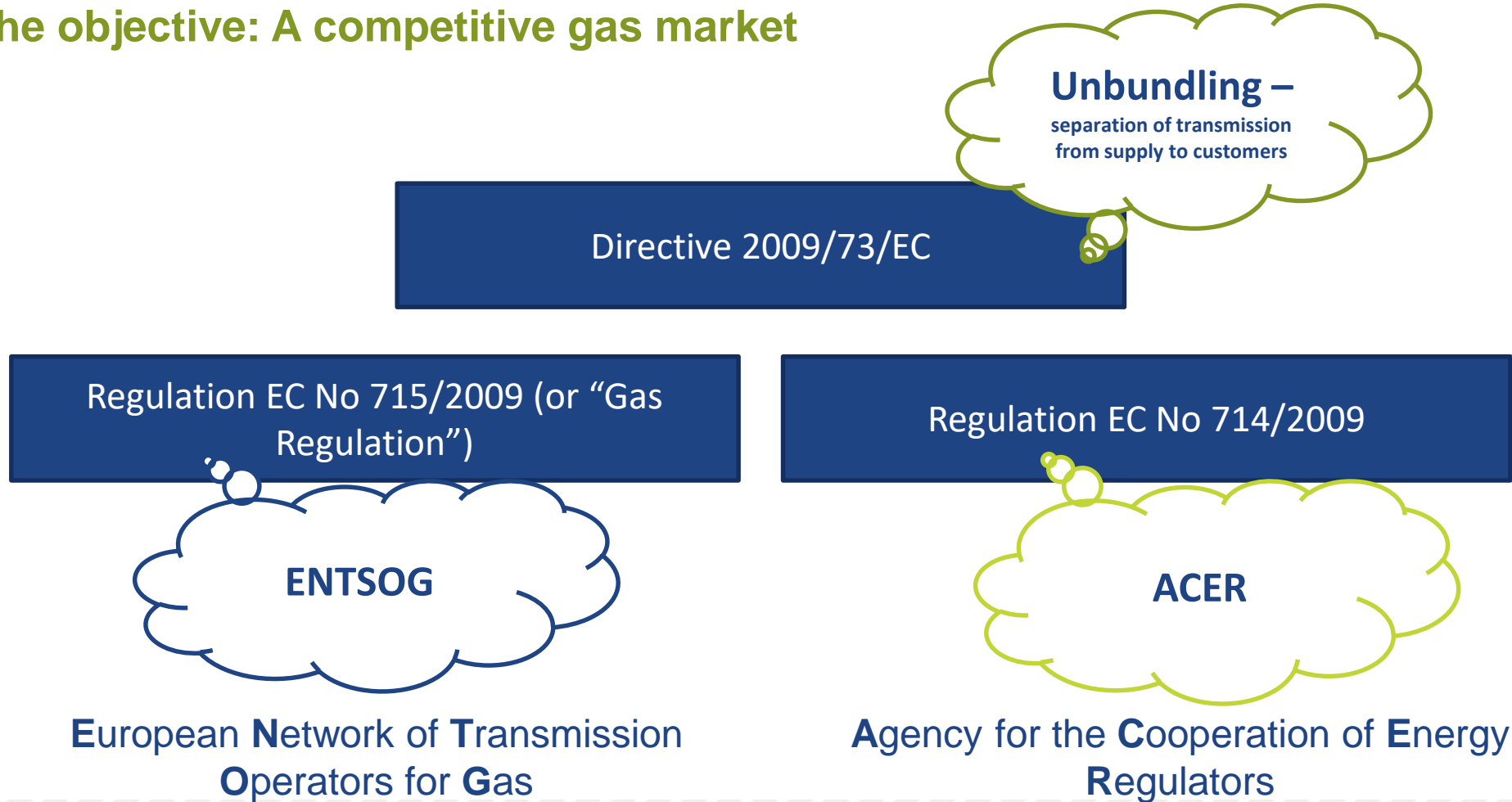
- General introduction of the EU Regulation 2015/703
- Explanation of the INT NC
- AS4 as a protocol for Data Exchange
- Edig@s – general introduction
- Harmonised Role Model for Gas
- Updates from CEF eDelivery Team
- AS4 case studies
- Edig@s v6 including a detailed description of the messages
- FUNC issue on interfaces for booking platforms
- Q&A session
- Closing





Introduction: 3rd Package regulatory framework for Gas

The objective: A competitive gas market





MEMBERS MAP

STATUS: JANUARY 2019

- 44 Members
- 3 Associated Partners
- 8 Observers

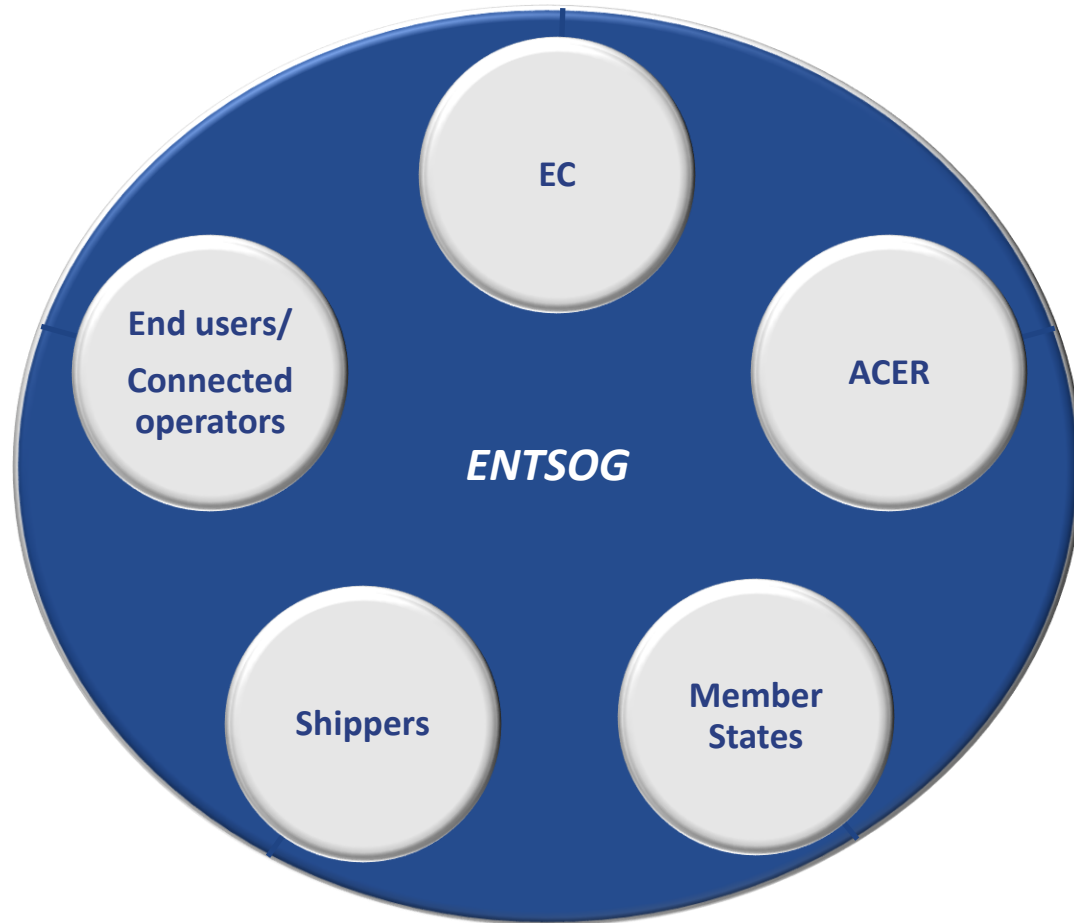


AUSTRIA, GERMANY AND SWITZERLAND



* TAP connects with the Trans Anatolian Pipeline (TANAP) at the Greek-Turkish border and crosses Northern Greece, Albania and the Adriatic Sea, coming ashore in Southern Italy.

ENTSOG organisation - working process



- > Stakeholder consultation is crucial for the team's work
- > Huge progress made in engaging a range of market participants



- > Market participants see ENTSOG as a fair partner
- > Stakeholders have responded positively to our processes and outputs

... involvement of all market participants is the key of success of the work done!



3. Legal Background for Harmonised Data Exchange

*Marin Zwetkow, Subject Manager Interoperability & Data
Exchange*

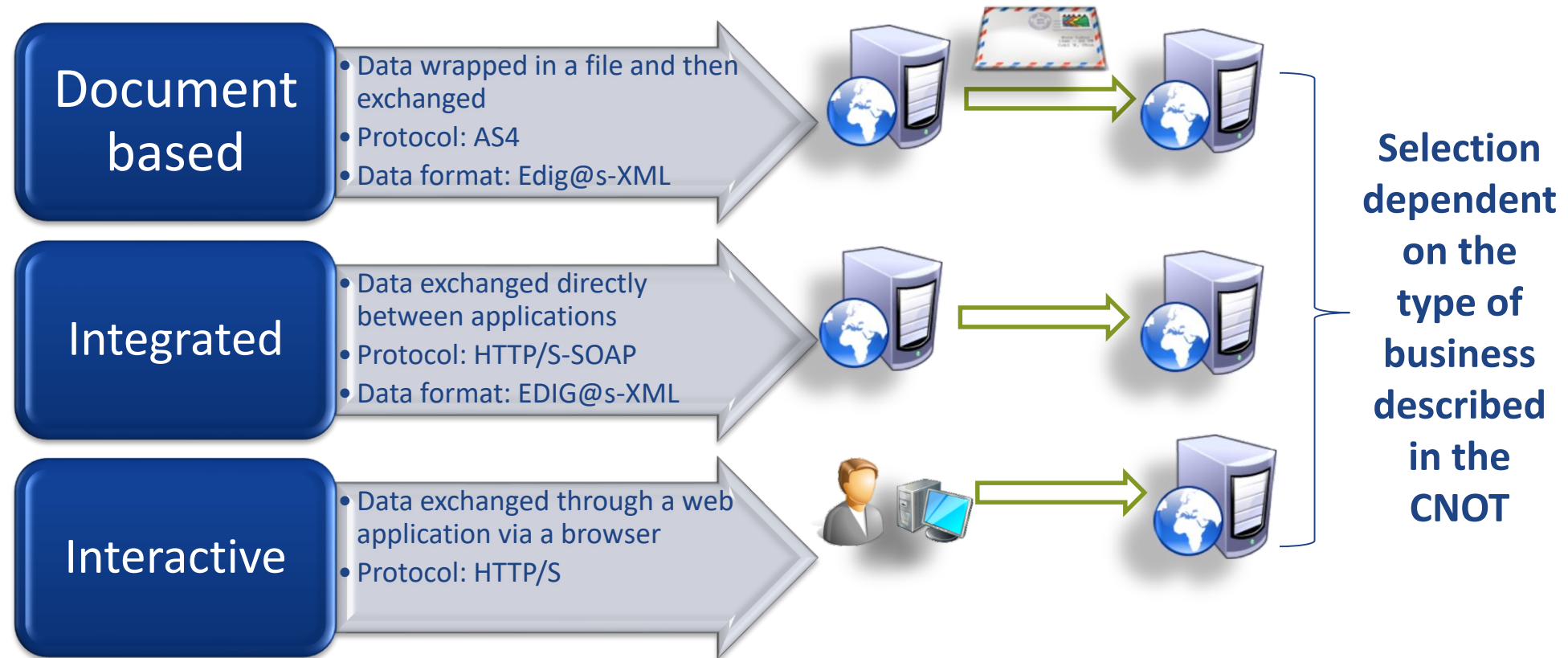
marin.zwetkow@entsog.eu

NC Interoperability and Data Exchange

- 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 **“shall make available and use”** the common data exchange solution as described in the common network operation tools



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



V. Data Exchange - Article 22: Data exchange system security and availability

- Each transmission system operator and each counterparty shall be responsible for ensuring that the appropriate security measures are undertaken.
 - Secure communication chain
 - Appropriate security measures to prevent unauthorised access of the IT infrastructure
- Each transmission system operator shall be responsible for ensuring the availability of its own system and shall
 - To prevent a single point of failure causes an unavailability of data exchange systems
 - Keep downtime, as a consequence of planned IT maintenance low and inform its counterparties in a timely manner

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

V. Data Exchange Article 24: Development process for common network operation tools

- For each data exchange requirement under Article 20(2), ENTSOG shall develop a common network operation tool in accordance with Article 8(3)(a) of Regulation (EC) No 715/2009 and shall publish it on its website.
- A common network operation tool shall specify the common data exchange solution relevant for the respective data exchange requirement.
- A common network operation tool may also include business requirement specifications (BRS), release management and implementation guidelines.
- ENTSOG shall establish a transparent process for the development of all common network operation tools.
- ENTSOG shall conduct a consultation for each common network operation tool.

V. Data Exchange Article 24: Development process for common network operation tools

Available Common Network Operation Tools (CNOTs)

- BRS for Capacity Allocation Mechanisms (CAM) & Congestion Management Procedures (CMP)
- BRS for Nomination & Matching
- Common Data Exchange Solution Table – overview which Data Exchange type is foreseen for each Business Process
- AS4 implementation guidelines and supporting documents
- Integrated Data Exchange usage profile
- Interactive Data Exchange usage profile



Common Data Exchange Solutions for Nomination & Matching procedures



Information Flow	From Role	To Role	Confidentiality Level	Common Data Exchange Solution	Optional Data Exchange Solution – second most preferred by stakeholders**
Nomination authorisation *	Registered NU	TSO	Private	Recommendation-Document Based	Recommendation- Document Based
Nomination	Registered NU	(Initiating) TSO	Private	Document Based	Interactive
Nomination	Registered NU	(Matching) TSO	Private	Document Based	Interactive
Forward Single Sided Nomination	(Active) TSO	(Passive) TSO	Private	Document Based	Interactive
Processed Quantities	(Initiating) TSO	(Matching) TSO	Private	Document Based	Interactive
Matching Results	(Matching) TSO	(Initiating) TSO	Private	Document Based	Interactive
Confirmation Notice	(Initiating) TSO	Registered NU	Private	Document Based	Interactive
Confirmation Notice	(Matching) TSO	Registered NU	Private	Document Based	Interactive
Interruption Information	(Initiating) TSO	Registered NU	Private	Document Based	Interactive
Interruption Information	(Matching) TSO	Registered NU	Private	Document Based	Interactive

* Data exchange solution is not mandatory but recommended and has to be negotiated between the TSO and NU

** Neither the offering nor the format of an Optional Data Exchange Solution is mandatory

Common Data Exchange Solutions for CAM & CMP



Information Flow	From Role	To Role	Confidentiality Level	Common Data Exchange Solution	Optional Data Exchange Solution – second most preferred by stakeholders**
Network User Registration*	Network User	Transmission System Operator	Private	Recommendation – Interactive	Recommendation - Interactive
Network User Registration to Auction Office*	Network User	Auction Office	Private	Recommendation – Interactive	Recommendation - Interactive
Approved Network Users*	Auction Office	Registered Network User	Private	Recommendation – Interactive	Recommendation - Interactive
Surrender Capacity Rights	Registered Network User	Auction Office	Private	Interactive	Document Based
Offered Capacity	Auction Office	Registered Network User	Private	Interactive	Document Based
Capacity Bid	Registered Network User	Auction Office	Private	Interactive	Document Based
Allocated Capacity	Auction Office	Registered Network User	Private	Interactive	Document Based
Aggregated Auction Results	Auction Office	All	Private	Interactive	Document Based
Surrendered Capacity Sold	Transmission System Operator	Registered Network User	Private	Document Based	Interactive
Reverse Auction Bid	Registered Network User	Auction Office	Private	Interactive	Document Based
Allocate Reverse Auction Results	Auction Office	Registered Network User	Private	Interactive	Document Based
Secondary Market Sales	Registered Network User	Transmission System Operator	Private	Interactive	Document Based
Secondary Market Sales	Transmission System Operator	Registered Network User	Private	Interactive	Document Based

* Data exchange solution is not mandatory but recommended and has to be negotiated between the TSO and NU

** Neither the offering nor the format of an Optional Data Exchange Solution is mandatory

ENTSOG Website – Section data exchange



www.entsog.eu



About
ENTSOG

Network Codes and
Guidelines

Scenarios and
Infrastructure



Capacity Allocation Mechanisms NC

Balancing NC

Tariff NC

Interoperability and Data Exchange NC

Congestion Management Procedures GL



CNOTS AND DATA EXCHANGE

All

COMMON NETWORK OPERATION TOOLS

2019

CNOT CHANGE REQUEST GUIDELINES/FORM

2018

INTEGRATED DATA EXCHANGE USAGE PROFILE

2017

INTERACTIVE DATA EXCHANGE USAGE PROFILE

2016

AS4 - DOCUMENTS FOR IMPLEMENTATION

2015

AS4 SUPPORTING DOCUMENTS

2014

AS4 QUESTIONS AND ANSWERS

CNOT ARCHIVE



4. AS4 as protocol for Data Exchange

Pim van der Eijk

Consultant



ENTSOG AS4 User Profile



Why is a usage profile needed?

- To select the functionality needed for the domain
 - Not all features of AS4 are relevant to TSOs
- To narrow down options to
 - Simplify design, build, test & deployment of implementations
 - Reduce cost and time of implementation for all stakeholders
 - Select options that are secure and future-proof





Versions of the ENTSOG AS4 Profile



Current Version is 3.6

- Approved by ITC KG in March 2018
- Fine-tuning and “tightening” of the profile
- Fully aligned with eDelivery AS4 Common Profile
- Minor changes only, no need for changes in software products
- Public Consultation early 2019 found wide support for adoption among stakeholders
- INT WG approved for publication in May 2019
- Users are strongly recommended to implement new versions
- Implementation status is monitored in the annual INT WG monitoring report

Change history

- Specification has a full change log back to earliest draft
- Difference tracked changed version to 3.5 is also available



Rationale for ENTSOG AS4 version 3.6

Limitations of profiling in earlier versions of ENTSOG AS4

- The goal of the profile has always been to narrow down options as much as possible
- However, in some cases it is still provided options or left details unspecified
- Some features were *recommended* instead of *mandated*:
 - Limitations of AS4 products (e.g. many vendors initially struggled with some of the security algorithms)
 - Added in anticipation of potential future use, though still not used in practice today

Downsides

- Every flexibility in a profile becomes a potential source for configuration mismatches between communication partners
- Vendors that strictly implemented the profile had to make costly exceptions (product changes) to accommodate all the others

Tightening the ENTSOG AS4 profile in version 3.6

Tightening in Version 3.6 of the specification

- Format for AS4 message identifier
- Signing certificate in XML Signature to be referenced using Binary Security Token reference
- Mandatory use of specific Key transport algorithms in XML Encryption
- Checks mandated on delegation in service provider model
- Firewall guidance removed

Full alignment with eDelivery AS4 Common Profile

- Stricter than ENTSOG 3.5 and earlier, possible due to improved state-of-the-art of vendor implementations: better support for newer security algorithms used for ENTSOG AS4





Alignment with eDelivery AS4



What is eDelivery AS4?

- Technical specification and implementation guidelines for the use of AS4
- Promoted for cross-border data exchange by European Commission's Connecting Europe Facility (CEF) in multiple domains in Europe
- Mandatory core "*Common Profile*" and optional "Profile Enhancement" modules
- More on this in separate presentation by CEF

Relation of ENTSOG AS4 to eDelivery AS4

- ENTSOG AS4 shares all settings for algorithms selected in the eDelivery "*Common Profile*"
- Does not use any of the optional eDelivery "Profile Enhancements"
- Adds usage profiling for the gas domain (e.g. values for Service, Action, Role, Part Property)
- Adds an X.509 certificate profile
- Adds mandatory support for ebCore Certificate Update



ebCore Certificate Update



ebCore Certificate Update

- ebCore Certificate Update is an OASIS standard protocol for updating certificates
- Exchange and deployment of certificates is managed using special AS4 messages
- New certificates are deployed in new “agreements” between communication partners
- New and old certificate (agreements) can be used in parallel during transition
- Support for the feature has been required in ENTSOG AS4 since v2.6 (October 2016)

ebCore Certificate Update Proof-of-Concept

- Voluntary initiative of ENTSOG ITC KG and EASEE-gas TSWG members
- Six participant end user companies in Belgium, France, Netherlands, Norway, Poland
- Four different AS4 vendor products
- More information in separate presentation

Benefits of ebCore Certificate Update

EASEE-gas “Migration of Certificates”

- EASEE-gas members periodically replace their certificates in a “big bang” migration
- Migration requires a lot of coordination and manual work (e.g. >100 companies are using certificates issued by EASEE-gas)
 - One problem in migration has the potential to affect the entire community
- Current certificates can be used until 11/2021

ebCore Certificate Update

- Each certificate can be *updated and deployed independently* of all others, whenever needed
- The AS4 “test” feature can be used to *check* if the certificate can be used successfully
- Both *manual and (semi-)automatic deployments* are supported
- Deployments can be *phased in* using a transition interval in which current and new certificates can be used in *parallel*



Other Ongoing Work in ITC KG

Supporting Partner Configuration Management

- Data model and XML interchange formats for data exchange configuration parameters to streamline setting up new AS4 partners
- Aligned with OASIS CPPA3 specification
- Intended to be used in EASEE-connect, the configuration management portal of EASEE-gas



Supporting documentation

- E.g. explanatory documents for Certificate Update
- Frequently Asked Questions
- E.g. support documents for interactive data exchange
- Requests coming from users / working groups

Reviewing user needs and technology developments



4. AS4 Profile in NL

Wim de Olde

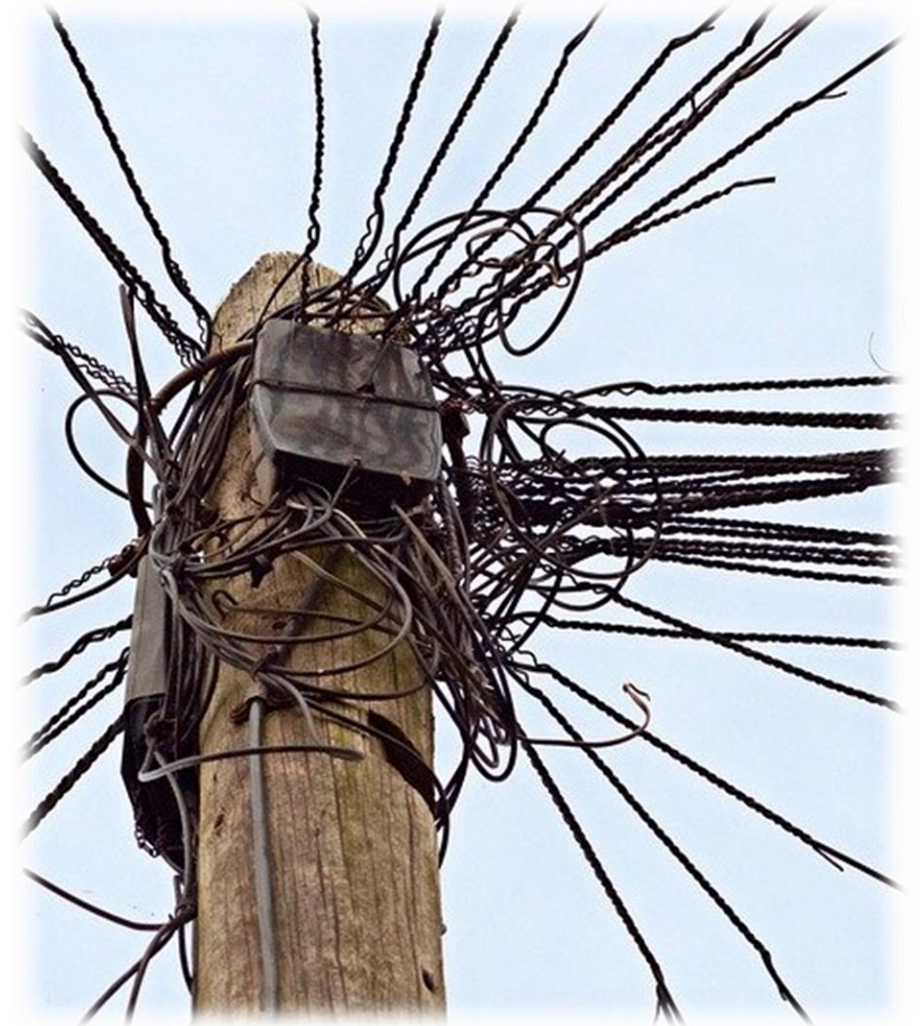
ICT Architect at N.V. Nederlandse Gasunie



Goal of this presentation

- Where do we come from, AS2, AS4
- Importance of standardisation in Europe
- Promoting standardised communication

- Reason for this presentation:
 - Publication of the AS4 energy market profile in the Netherlands on the 4th of September 2019





Introducing myself



- Wim de Olde, ICT Architect at N.V. Nederlandse Gasunie
- Member of several (technical) working groups, national & international
 - EDIG@S/EASEE-gas
 - EDSN, NEDU
 - ENTSOG, ITC KG
- Main goal for joining these groups
 - Working towards a standardised, efficient data exchange in Europe
 - Gas, but also broader, for energy in general
 - Exchanging knowledge in a broader sense



NEDU & TC



The Dutch energy sector develops its own market processes under the supervision of the Netherlands Authority for Consumers & Markets (ACM).

The non-profit association NEDU plays a central role in the development and implementation of market processes and is a platform that connects the roles of various market operators. It covers both **gas** and **electricity** and both **wholesale**, **retail** and **metering** processes.

The **Technical Commission** (TC) focusses on the technical implementation of data exchange and its security in the market processes between the parties. Membership is open to all representatives from those parties.



Processes involved

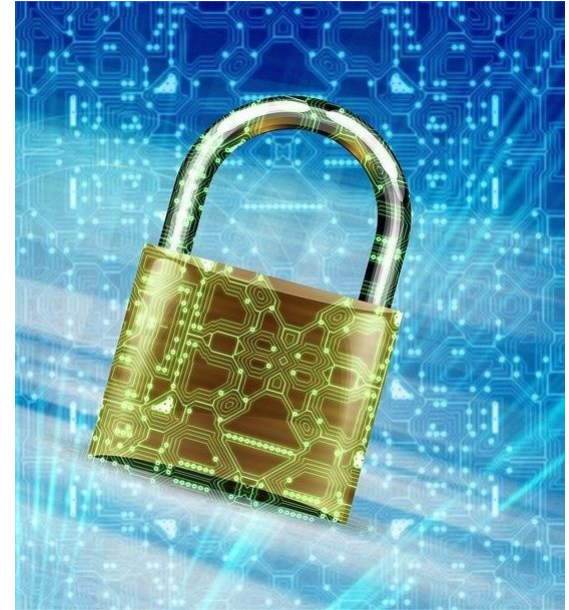


- Document exchange using EDIG@S messages for wholesale gas
- EU: Operational Service Handling (entry & exit points)
 - Nomination & Matching: NOMINT, NOMRES
 - Contracting: PRODOC, PROCON
 - Balancing: BALDOC, BALCON, CLRCON
- NL (EDIG@S/EDINE format): Allocation & reconciliation (billing proces)
 - Measurements: MINFO, MCONF
 - Temperature data: TINFO, TINFO
 - Correction factor (MCF): CINFO, CCONF
 - Supplier allocation: LALL, LCONF
 - Measured connection allocation: BALL, BCONF
 - LDC aggregated capacity data: OVEXIT, OCONF
 - LDC Reconciliation: RSINFO, RSCONF
 - TSO Reconciliation: RNINFO, RNCONF

A secure & reliable data transport protocol

Standardised protocol for document exchange

- PVE, EnergieNed
 - Change in allocation process due to liberalisation facilitated by GTS
 - Introducing AS2 over VPN
- NEDU, EDSN
 - Use AS2 over internet
 - AS4 as standard for wholesale gas document exchange (TC034)
 - Usage of standard AS4 profile in the energy market (TC040)
- EASEE-gas
 - CBP-2007-001/02 Message Transmission Protocol -> AS2
 - CBP-2017-001/01 Message Transmission Protocol for Document Exchange -> AS4
- ENTSOG
 - INT NC states AS4 must be used for EU document-based data exchange solution
 - Development of AS4 profile



Timeline AS2/AS4 protocol

- 2003 – NL: Implementation AS2 (using a VPN) – GTS/PVE
- 2007 - EU: Implementation AS2 (using internet) – EASEE-gas
- 2009 – NL/EU: First introduction regarding AS4 – NEDU/EASEE-gas
- 2013-2015 – EU: INT Network Code development
- 2015 – NL/EU: Roadmap AS4 in relation to the EU NC, standardised AS4 profile - NEDU/EASEE-gas
- **2016 - NL: Decision to use AS4 for national market gas (TC034)**
 - Based on security, International developments and Regulator advice
 - Use the active ENTSOG AS4 profile
- **2017 – EU: Implemented AS4 for EU processes (TSO), CBP EASEE-gas following ENTSOG profile**
- 2017: NL: Plan for a migration from AS2 -> AS4, using a central hub
 - Research conducted to combine Electricity & Gas, integrate AS4 and Mades (TC030)
- 2018: NL: Central AS2/AS4 hub available, GTS solely at AS4 as of May 2018
- **2018 – 2020: NL Market migration AS2 -> AS4 (~43 parties representing ~141 entities)**



Following Europe



- Official decision on the 4th September 2019 (TC040):
- *Approval of the “AS4 Energy Market profile” by the general meeting of members (ALV).*
- *The AS4 Energy Market profile is based on the European e-Delivery standards and is set up in line with the ENTSO-G AS4 Profile, already in use in the Netherlands.*
- The ENTSOG profile was flexible enough to fit the Dutch market processes.
- **One common protocol for the NL energy market**





AS4 lessons learned



- Work closely together with software vendors
 - Interoperability tests
 - Still can have different implementations of AS4 (e.g. octet vs gzip)
- ENTSOG profile changes: 3.0 – 3.5/3.6
 - Was seen as a problem at some parties
- Central hub to facilitate the migration from AS2 -> AS4
- For European standardisation it is important to use the same settings for a protocol like AS4
- Worldwide standardisation OASIS
 - Specific ideas from the KG where implemented in the ww standard
- EU standardisation CEF
 - Connecting Europe Facility also has a possibility to test ENTSOG AS4 profile

Links



> Newsitem on CEF website announcing the English version:

- <https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/2019/11/27/Dutch+AS4+Energy+Market+Profile+available+in+English>

> Link to the NEDU where the English version can be found:

- <https://www.nedu.nl/documenten/berichtdefinities-en-overige-documenten/>

> Direct link to the English document:

- <https://www.nedu.nl/wp-content/uploads/2019/11/AS4-Energy-Market-Profile-v1.0.pdf>



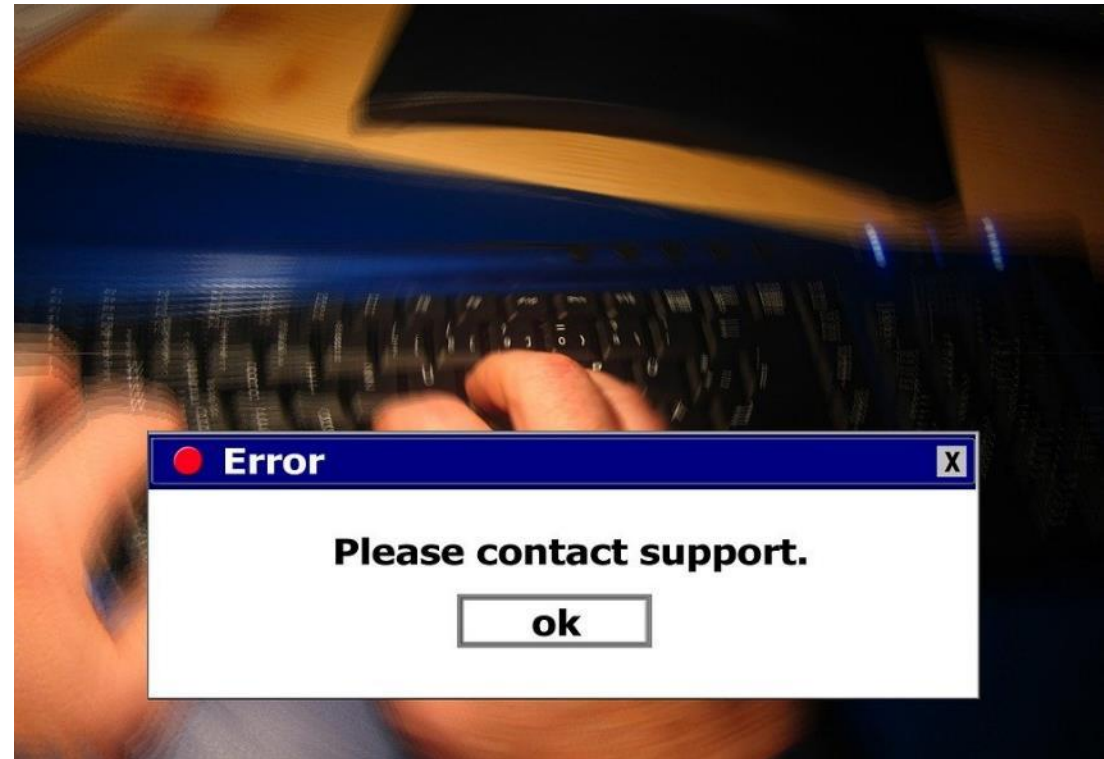
4. Position paper for the different signature algorithms

Marin Zwetkow

Different signature algorithms

Identified Issue

- Market participants identified data exchange issues regarding the usage of certificates within European and domestic market.
- For data exchange within the German market participants have to use a different algorithm for signing message and certificates
- Market Participants need to have 2 different certificates and software configurations for the 2 markets (European and domestic)





Different signature algorithms

- ITC KG (ENTSOG) prepared a position paper with the aim to:
 - Explain the rationale for the decisions made in ENTSOG AS4 profile, based on analysis of the state-of-the-art in data exchange and security
 - Explain the involvement of the ENISA (European Network Information Security Agency) in making security algorithm decisions
 - Explain the ENTSOG AS4 and BNetzA guidelines, where they are compatible and incompatible
 - Provide a clear summary for non-experts of the underlying cryptographic issues
 - Explain the impact of incompatibilities for users
- The position paper is supported by EASEE-gas and CEF



Algorithm Comparison ENTSOG-BNetzA



Algorithm	ENTSOG AS4	BNetzA	Compatible
Certificate Signing Algorithm	RSASSA-PKCS1-v1_5	RSASSA-PSS	No
Message Signing Algorithm	RSASSA-PKCS1-v1_5	RSASSA-PSS	No
Key Transport Algorithm	RSAES-OAEP	RSAES-OAEP	Yes





Different signature algorithms

Proposed way forward

- Initiated discussion with ACER regarding the possible collaboration between the respective bodies
- National Security Expert Organisations and European Organisations representing the different sectors
- Involvement of European Security Organisations (e.g. ENISA) in the choice for new standards
- Balance between “Interoperability” (Market availability) and “Security”
- Aligned European timeplan for introducing new standards



General Introduction and main changes in Edig@s version 6

Jarle Rønnevik

Equinor ASA

Chairman of Message and Workflow Design working group of EASEE-gas

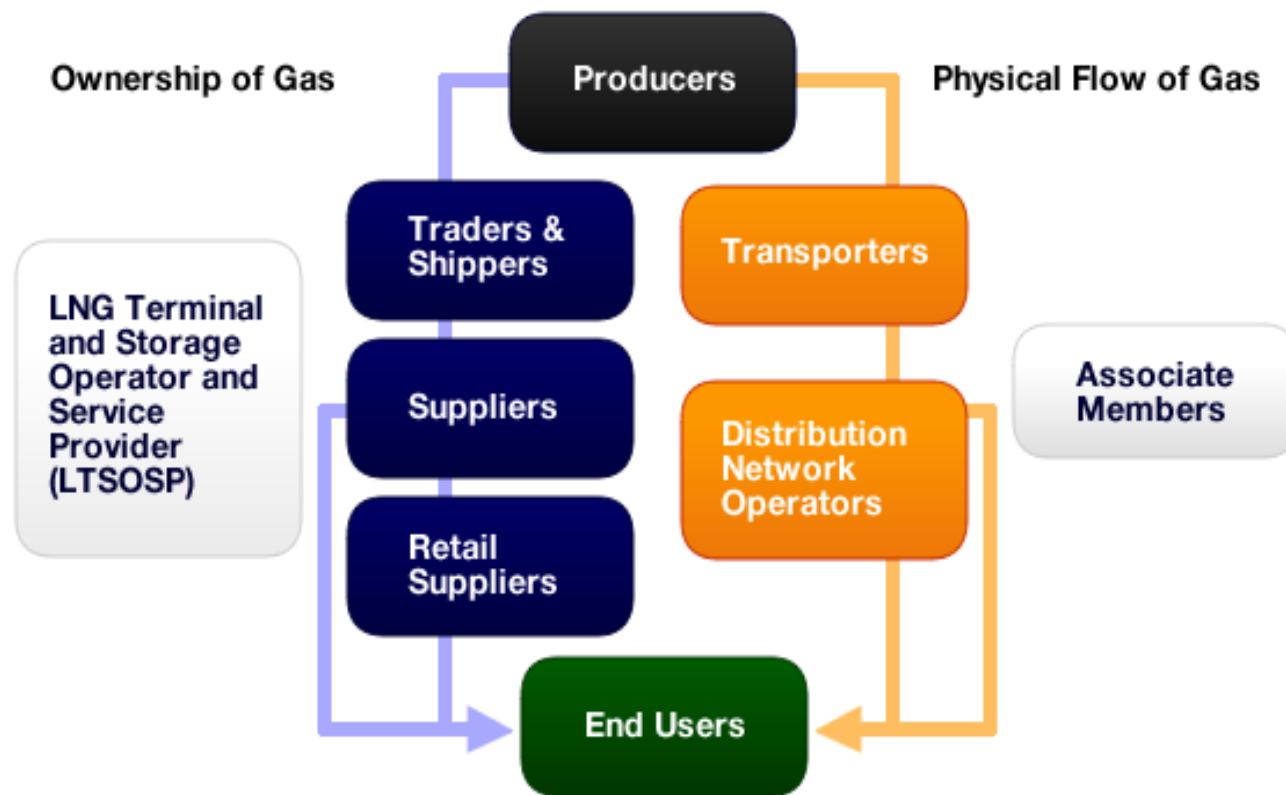


About EASEE-gas

- Established in **2002**, EASEE-gas is a **not-for-profit association** registered in **France** (Law of 1901 Registration) and managed in **Brussels**, Belgium
- The association's **main purpose** is to contribute to the **simplification** and **streamlining** of both the physical transfer and the trading of **gas** across **Europe**
- The main strength of the association relies on the wide membership where **all gas industry segments, from producer to end-user, are represented!**
- For more information about the Association visit the website: <https://easee-gas.eu>

Membership Structure

Full Members – voting rights
(Companies active in one of the 8 gas industry segments below)



Associate Members – no voting rights
(other associations, regulators, consumer groups, etc)

Consultant Members – no voting rights
(consultancies providing services to companies in other gas industry segments)

Membership representation



Some achievements

24 Common Business Practices (CBPs)

.....streamlining business processes across Europe.....

Harmonised Gas Role Model Specification Document

.....one single document describing the main actors and processes in the gas sector.....

EDIG@S XML

.....electronic data interchange format.....

EASEE-gas Security Certificates

.....for trusted electronic communication in the gas business.....





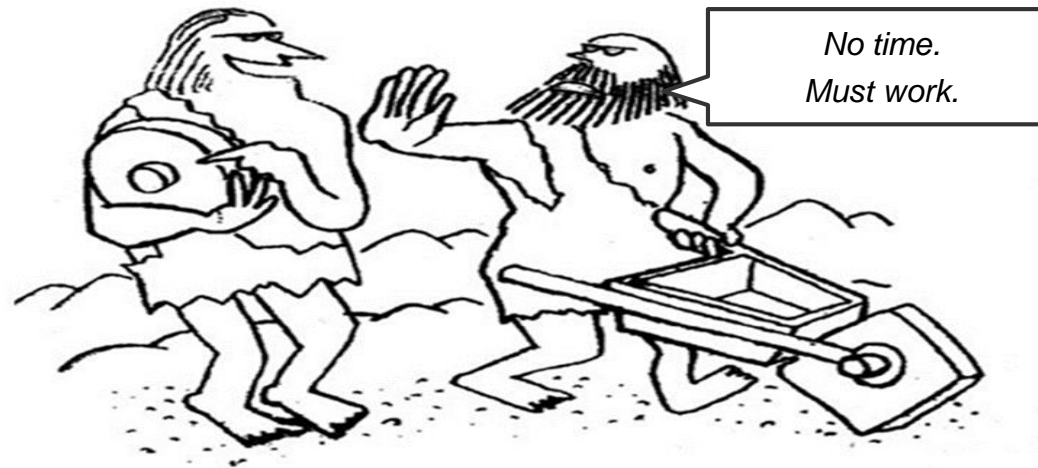
@Storengy

Edig@s version 6 by Message and workflow design working group

General Changes

Edig@s version 6

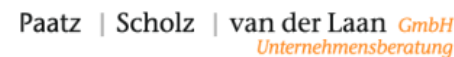
Why a new version?



To get a harmonised standard for gas exchange and transport everyone must put in some effort, when it is in place everyone will gain from the result

Edig@s version 6

Companies represented in the working group:



Why Version 6 of Edig@s

Version 5 had many different implementations due to documentation that was ambiguous.

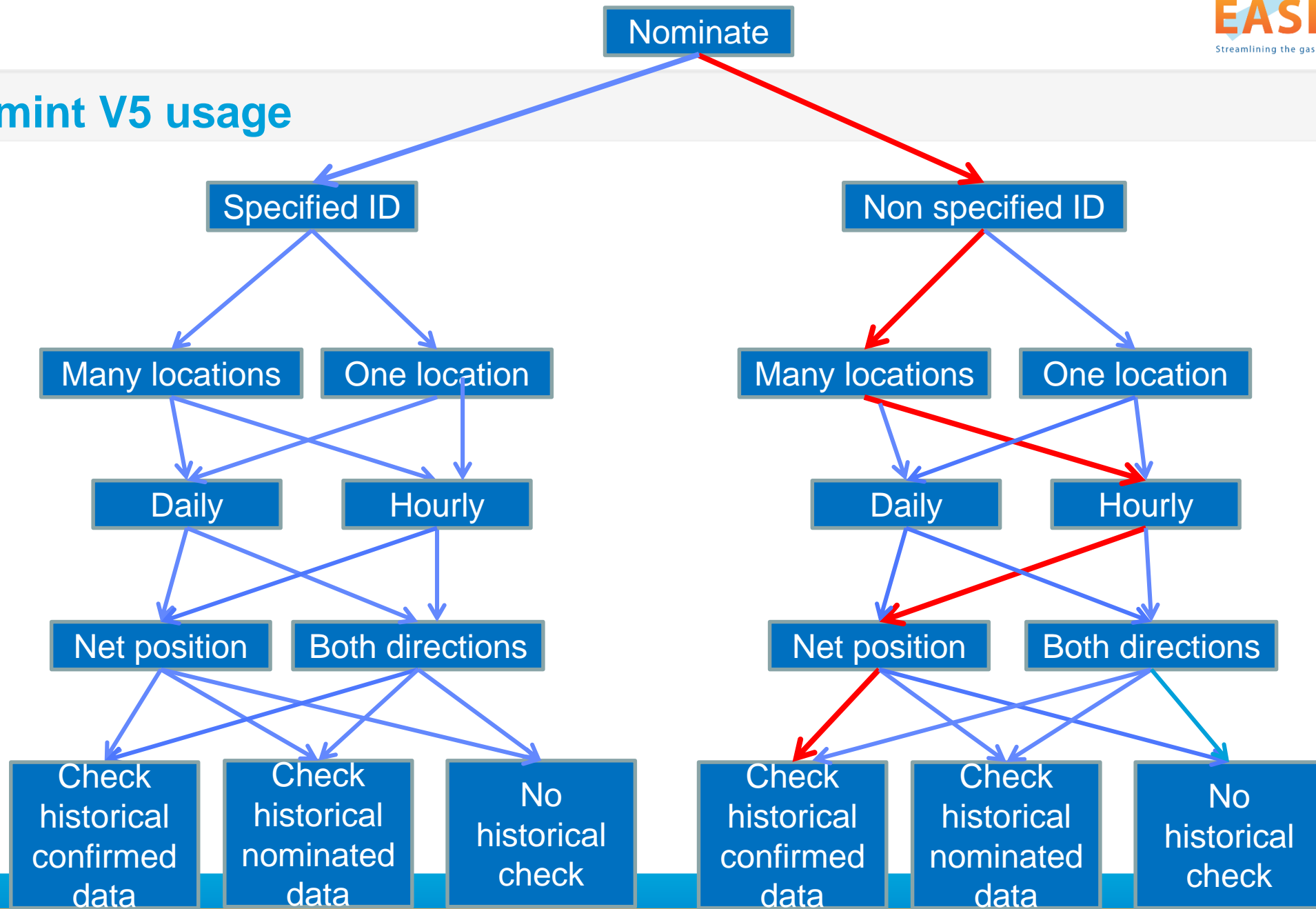
Further harmonisation is necessary in order to make the documentation clearer.

A harmonised gas role model has been created and the same roles have to be used in the documentation.

All other processes were reviewed in order to align with the current market situation.

- ➔ Removal of messages from the standard that are not used or only locally used
- ➔ New messages added due to market evolution.
- ➔ Clean up code lists and removal of parameters not used or misused.

Nomint V5 usage



Further harmonisation

Due to a lack of harmonisation the following decisions based on consultation and review of existing solutions developed for version 5 of Edig@s has been carried out:

- Net values: When there is matching between hourly matching systems, net values should always be used (only values in one direction for given hour). Where there are matching between hourly and daily matching systems some challenges arise and for the moment it is not possible to use only net values in these cases.
- One location and one internal account per nomination (NOMINT): The majority of implemented solutions use this today. For the ones not using it the changes shouldn't be too difficult. The market has changed from long term to short term and by making smaller and simpler messages the standard supports this development.

Further harmonisation

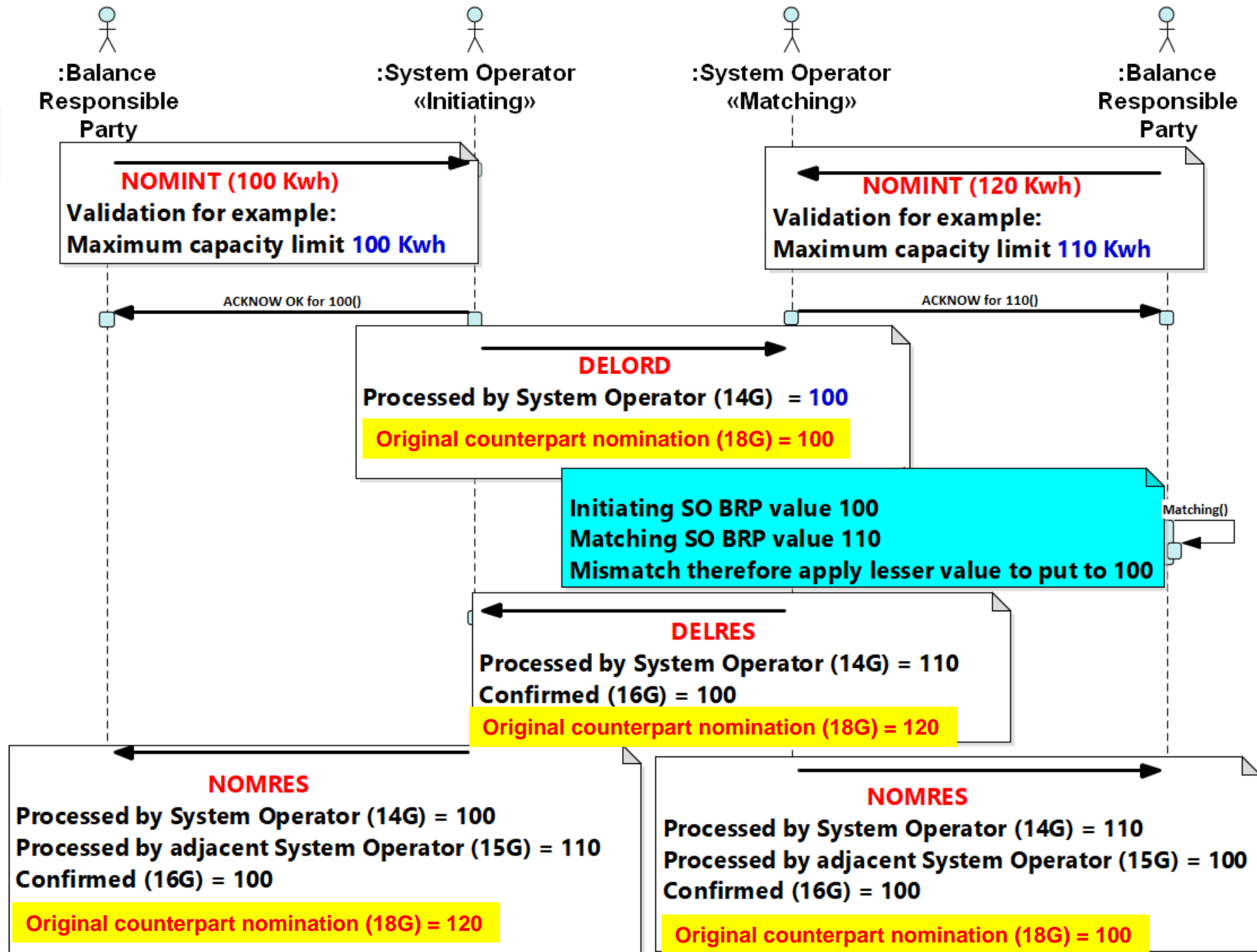
- Removal of applicationContext:
 - applicationContext was added in version 5 of Edig@s because it was not possible to route in AS2 envelope. In AS4 routing is possible in the envelope and applicationContext can be removed.

- Decision tables added in Message implementation guides to avoid misunderstandings during implementation.

- Technical changes:
 - Clean-up of all code lists
 - Attribute naming convention changed to make it more harmonised.
 - All documentation, models, messages and schemas are now automatically generated from the model. This has removed manual work.

Further harmonisation

- 18G counterpart nominations to be mandatory on all matched locations: Today the causer of a lesser rule are not able to discover the under nomination from the matching process (NOMRES) when 18G is not included. By making it mandatory on all connection points that match with the lesser rule a mismatch will be visible during the first matching schedule.



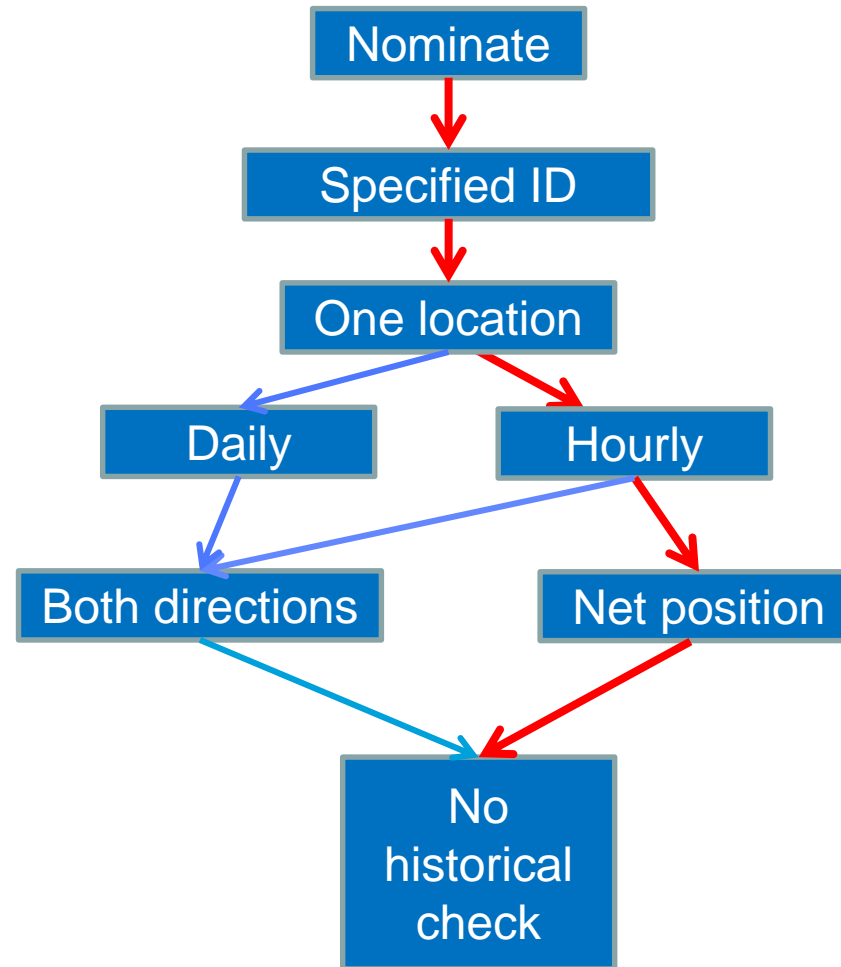
Further harmonisation

Try to increase the number of processes to be included in the regulation:

- Today nomination and matching process, REMIT process (contract market monitoring, nomination monitoring and gas capacity allocation) and Capacity allocation process (Surrendered Capacity Sold) is part of the regulation.
- Many companies use also other Edig@s processes and messages to fulfil other parts of the regulation. To get processes as capacity allocation and balancing and settlement into the regulation we need to actively use the gas func platform when problems are discovered with the existing regulations.

<http://www.gasncfunc.eu/>

NOMINT V6 usage





Troll A, Equinor by Oyvind Hagen

Thank you for your attention

For more information:

www.easee-gas.eu





@Storengy

The Harmonised Role Model for Gas

28.11.2019










Oliver Schirok VNG Handel & Vertrieb

Gas Role Model - Facts

- ➔ Taskforce created in 2015
- ➔ CBP since end of 2018
- ➔ 9 business processes
- ➔ 22 roles
- ➔ 78 interactions

- ➔ „Shipper“ has become 4 roles
- ➔ „TSO“ has become 6 roles

GRM Business Processes covered by Edig@s

- ④ Capacity Allocation Process 
- ④ Gas Trading Process
 - ④ OTC Trade Process 
 - ④ Exchange Trade Process 
- ④ Nomination and Matching Process 
- ④ Balancing and Settlement Process
 - ④ Metering Process 
 - ④ Allocation Process 
 - ④ Balancing Process 
 - ④ Settlement Process 
- ④ REMIT and Transparency Process 

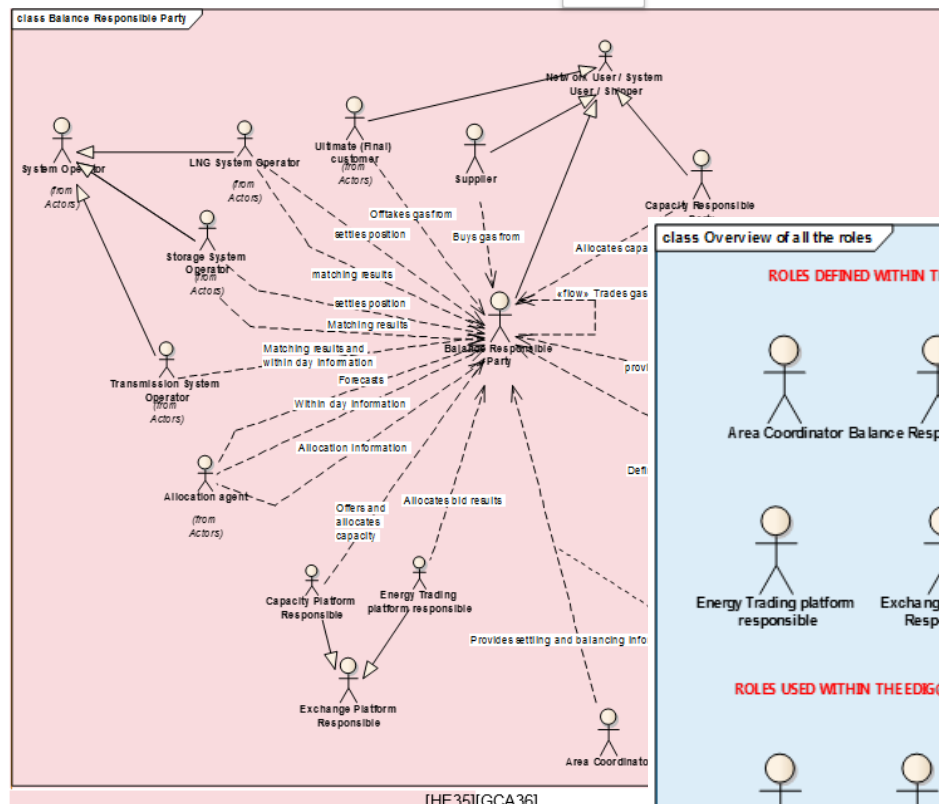
2015: First Role Document

1.4.31.2.2 Balance Responsible Party

Created By: Mike on 25/06/2015

Last Modified: 29/06/2015, Version: 1.0 [NR32][NR33][NR34]

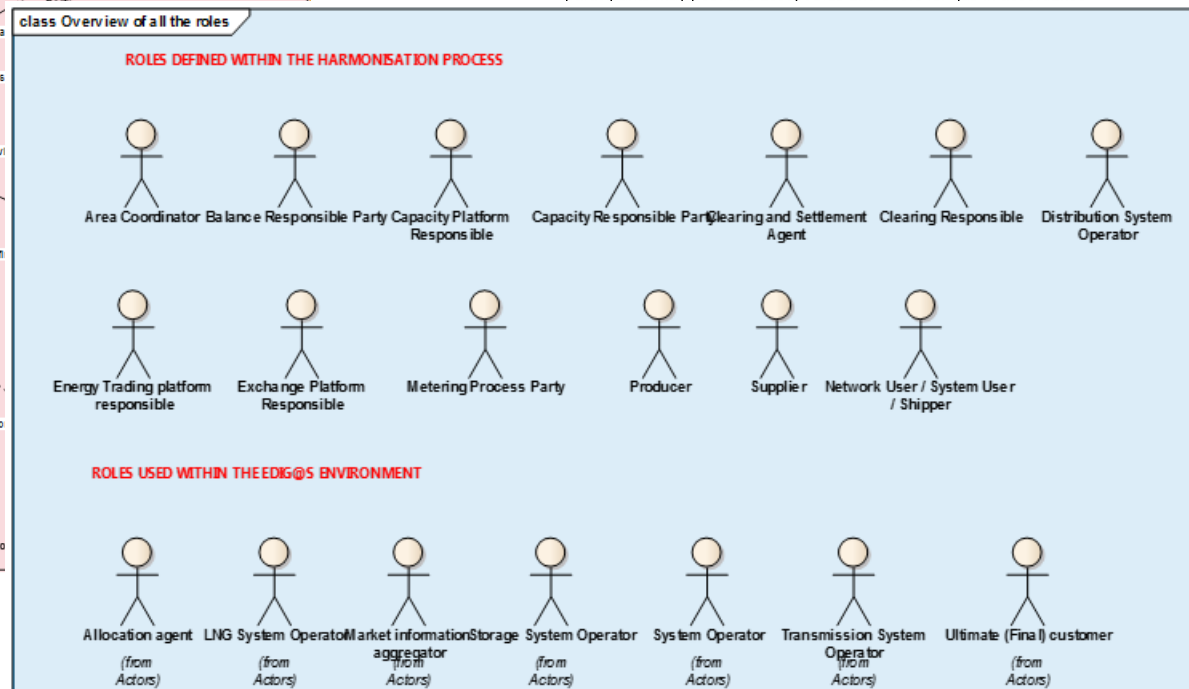
AGENDA



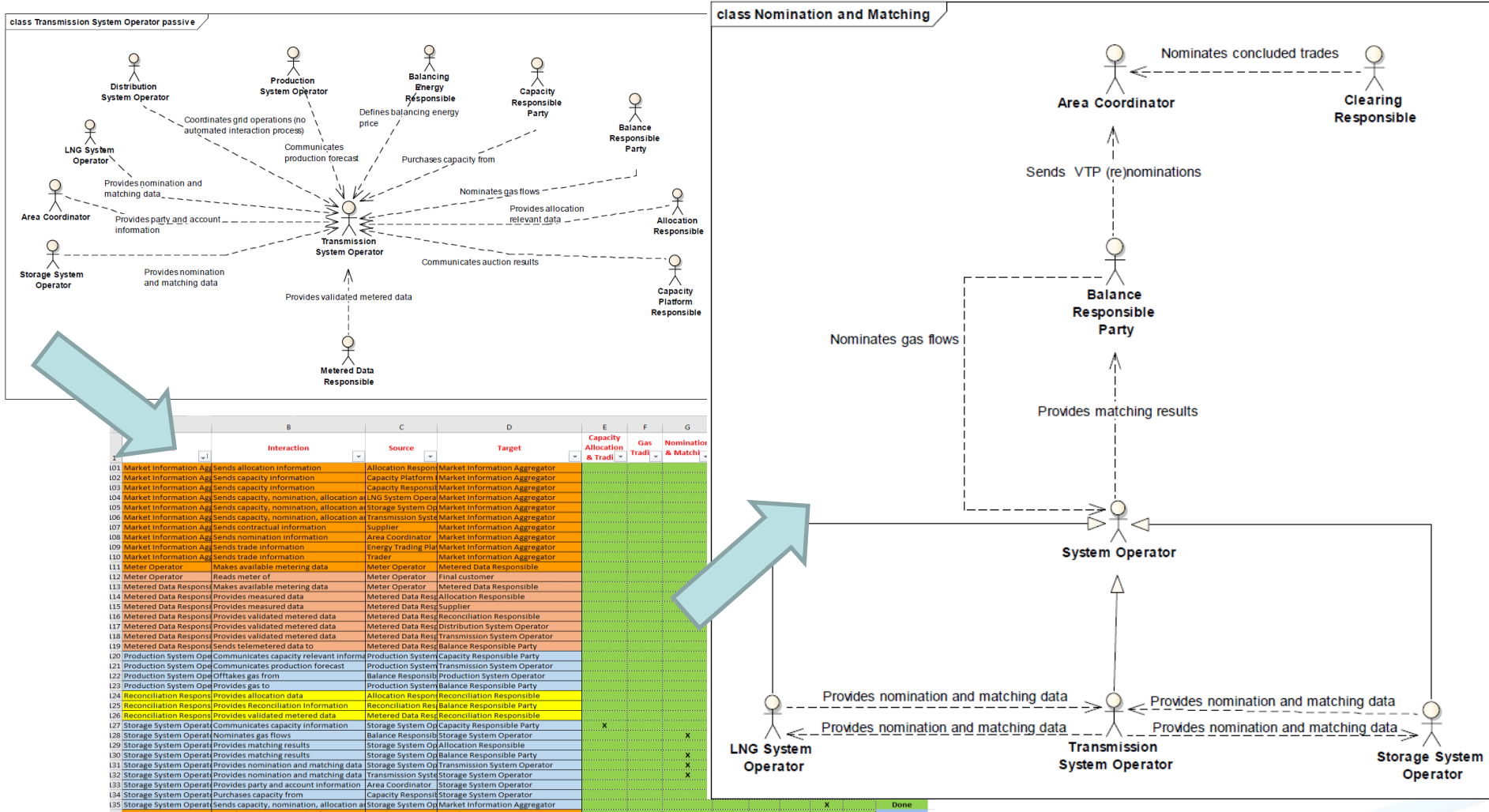
[HE35][GCA36]
Figure 2

RoleName: Distribution System Operator
RoleDescription: Harmonised definition: A party who carries out the function of distribution and is responsible for operating, ensuring the maintenance of, and, if necessary, developing the distribution system in a given area and, where applicable, its interconnections with other systems, and for ensuring the long-term ability of the system to meet reasonable demands for the distribution of gas[CDM11]

RoleName: Energy Trading platform responsible
RoleDescription: Harmonised definition: A party providing and operating a platform by means of which trading participants may post and accept bids and offers for gas in accordance




2017: From Roles to Business Processes



2018: Stable Release and CBP

Harmonised Gas Role Model Specification –business process view

1



EASEE-gas
European Association for the Streamlining of Energy Exchange


**Harmonised Gas Role Model Specification
From the Business Process perspective**

Number:	2017-001/01.2
Subject:	Harmonised gas role model –Business process
Approved:	30 May 2018

Stable Release

CBP 2018-001-01

1



EASEE-gas
European Association for the Streamlining of Energy Exchange - gas

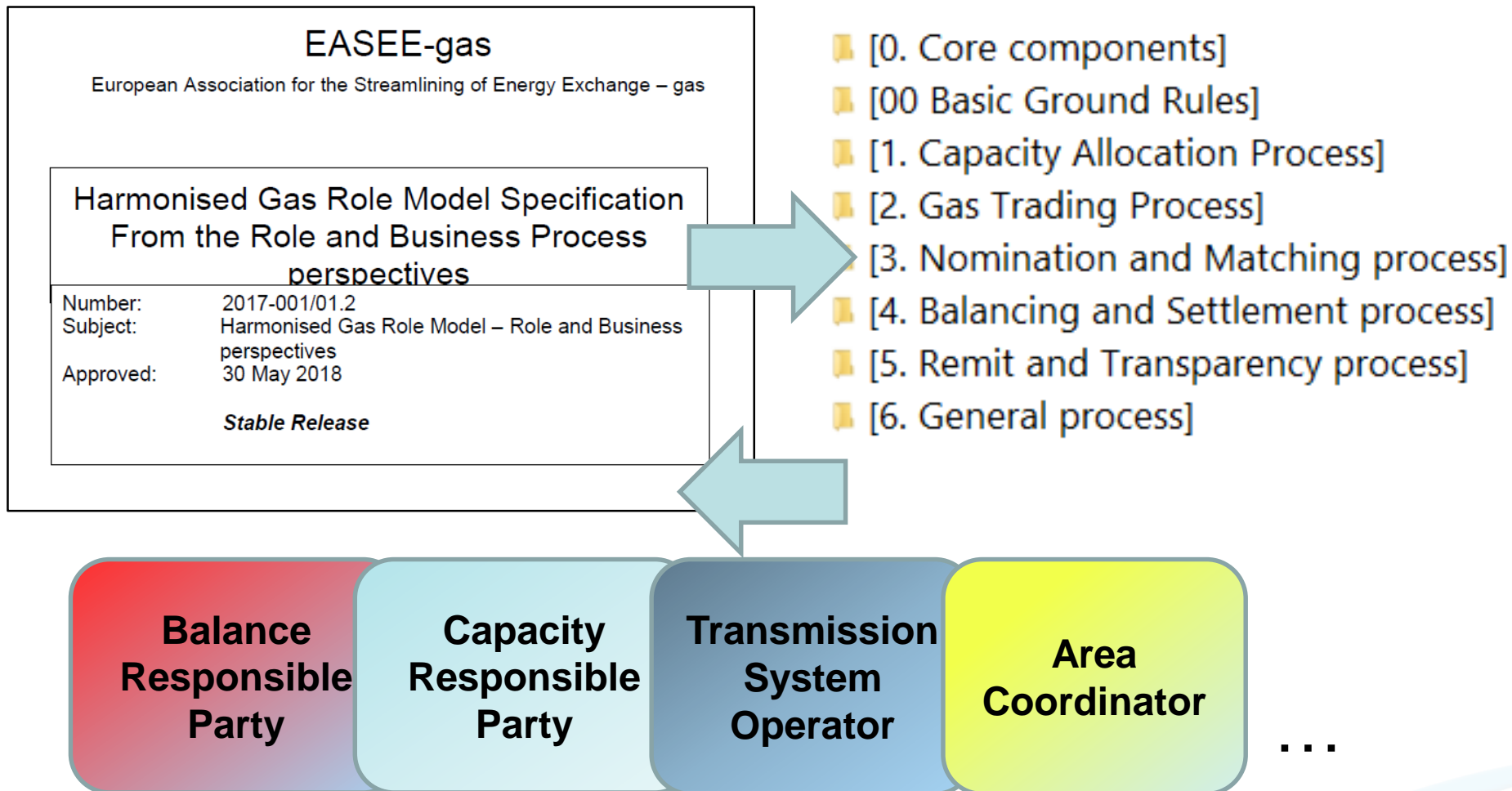
2018-001-01 - final

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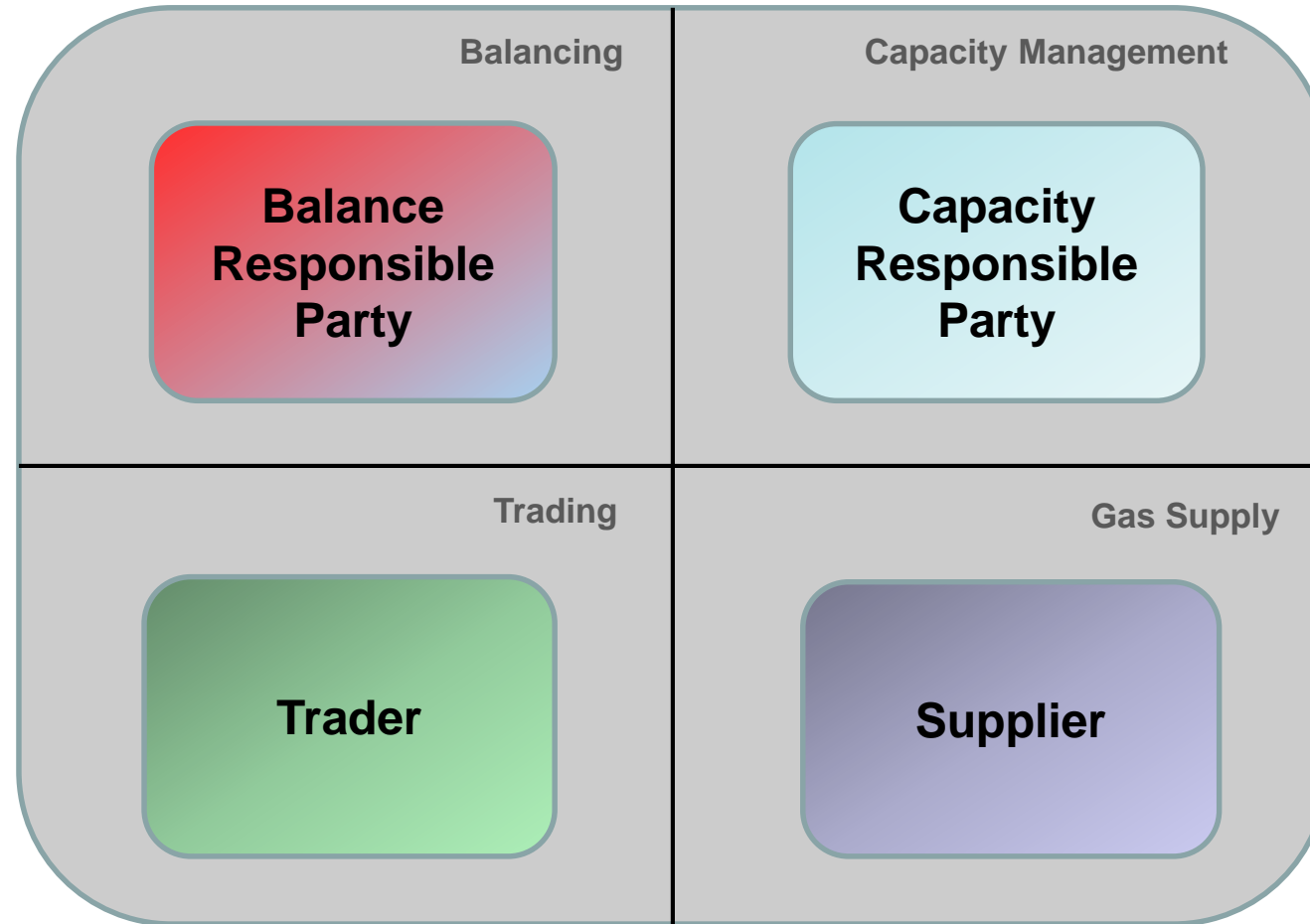
Common Business Practice

Number:	2018-001/01
Subject:	Harmonised Gas Role Model - Business Process perspective

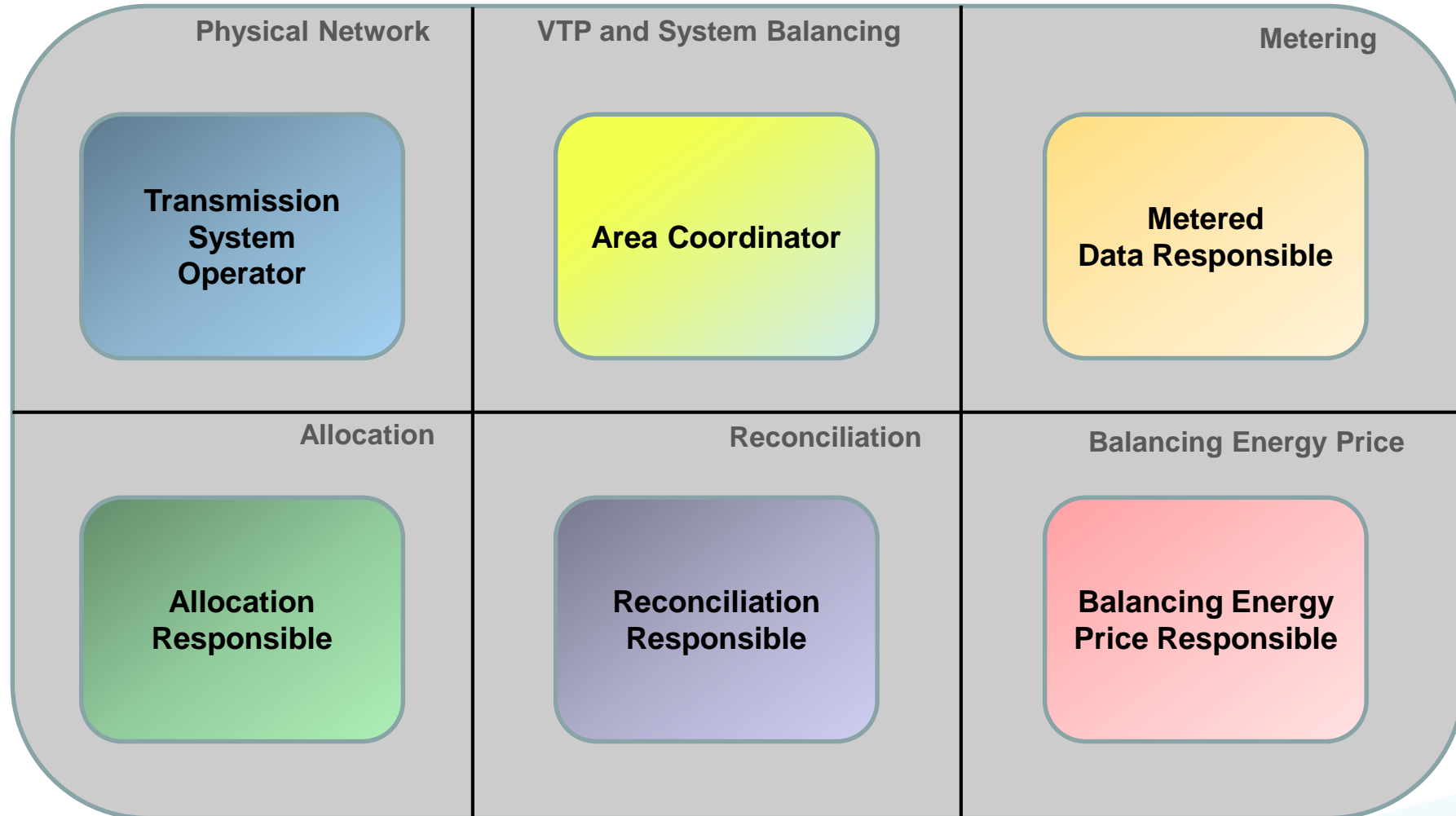
2019: The role basis for Edig@s 6



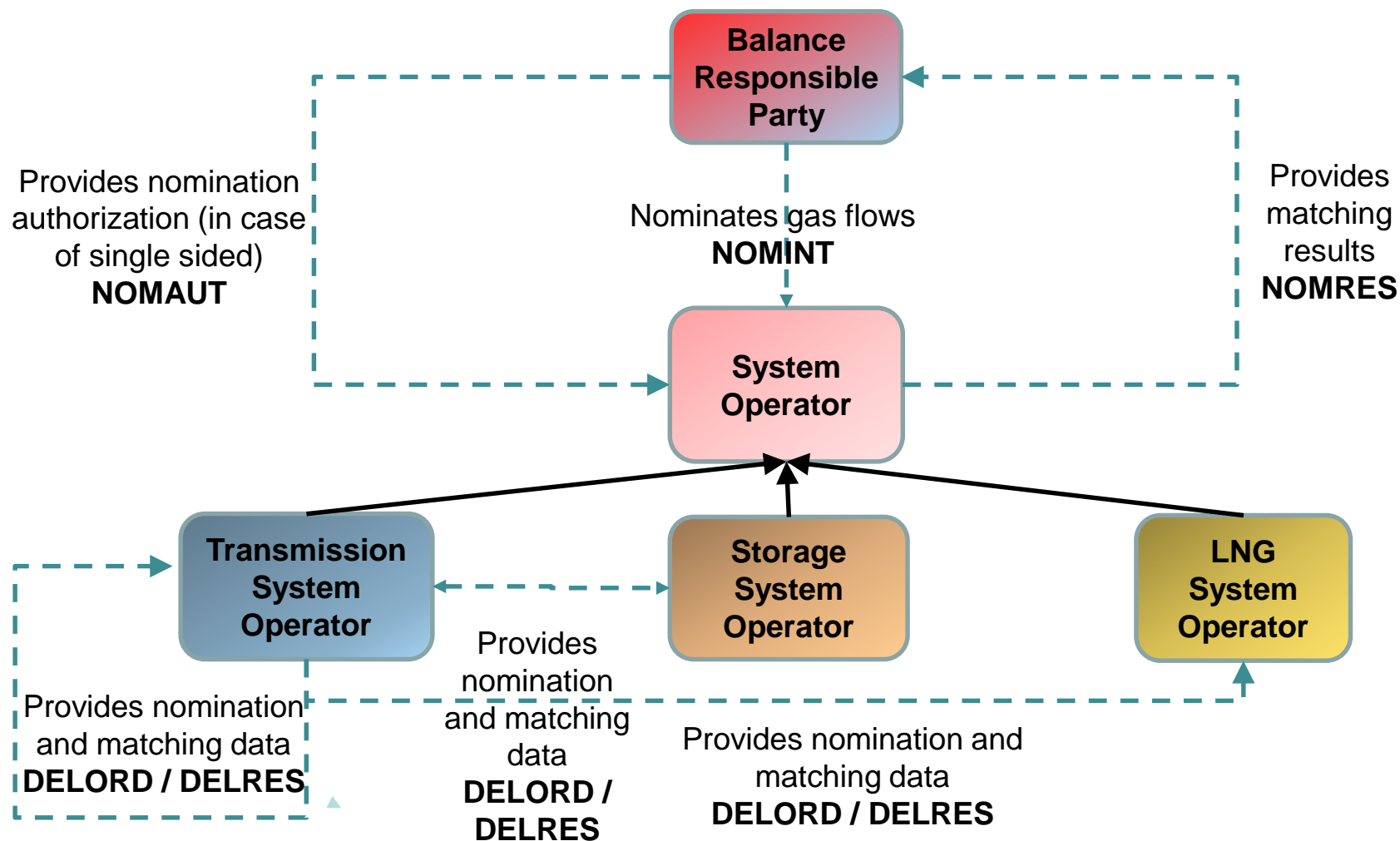
Where to find former „Shipper“ in the role model



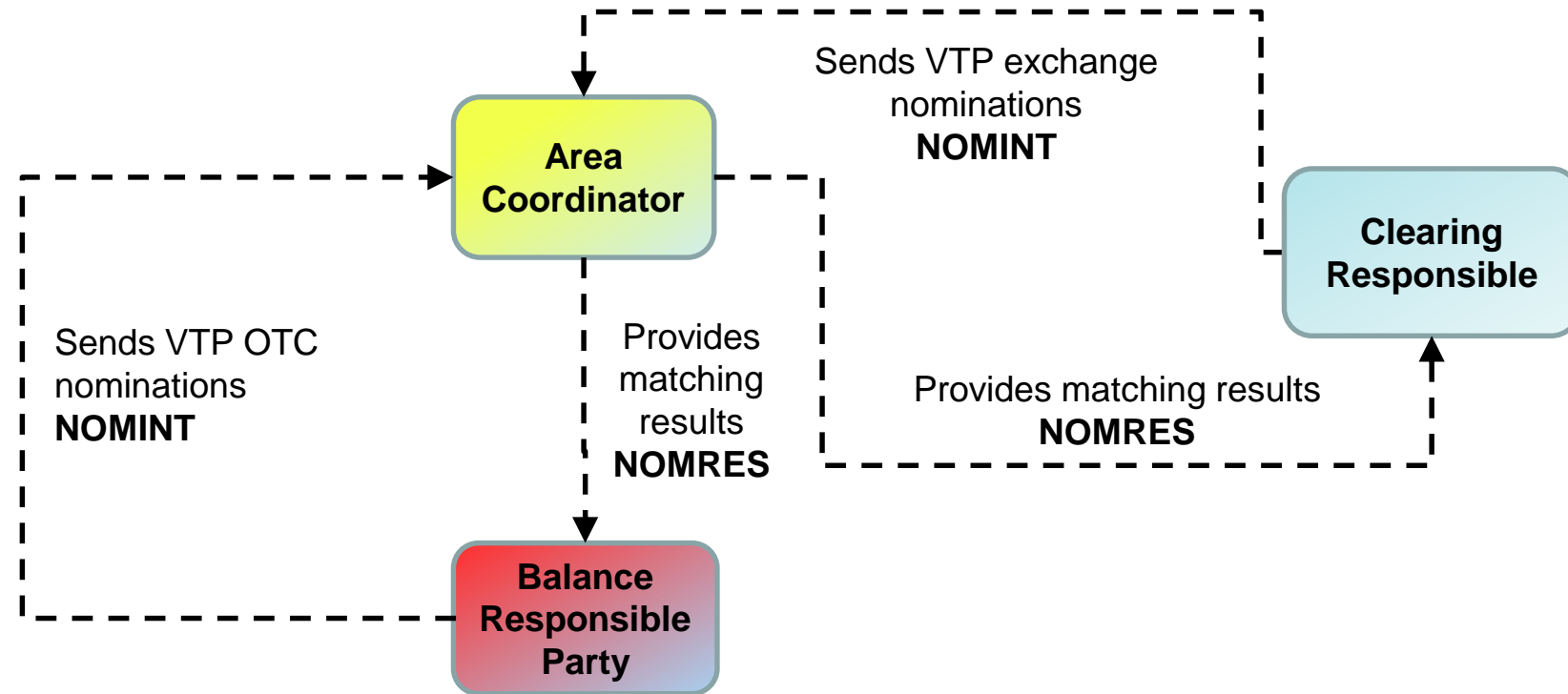
Where to find common „TSO“ responsibilities in the role model



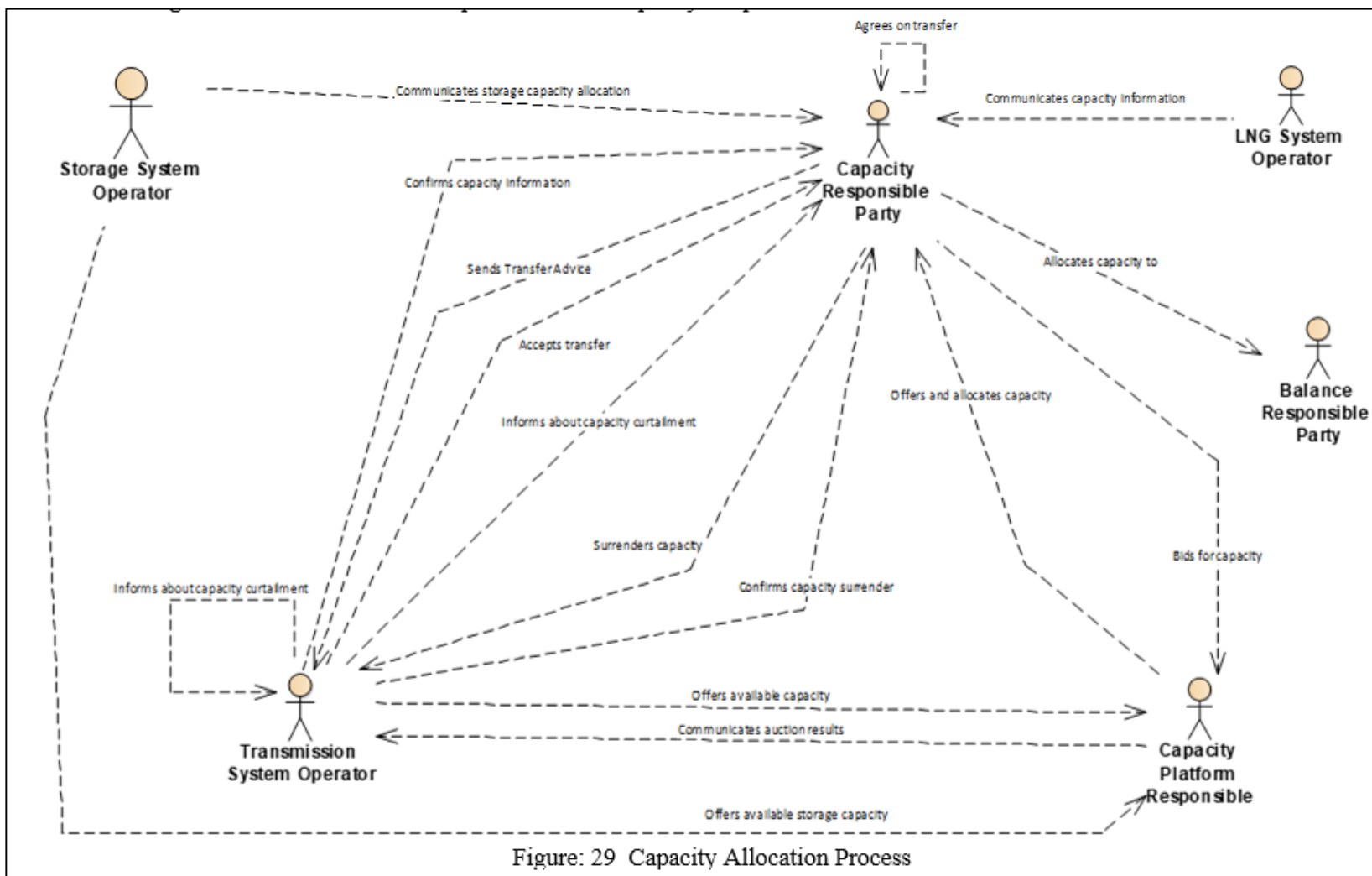
Nomination & Matching – System Operator



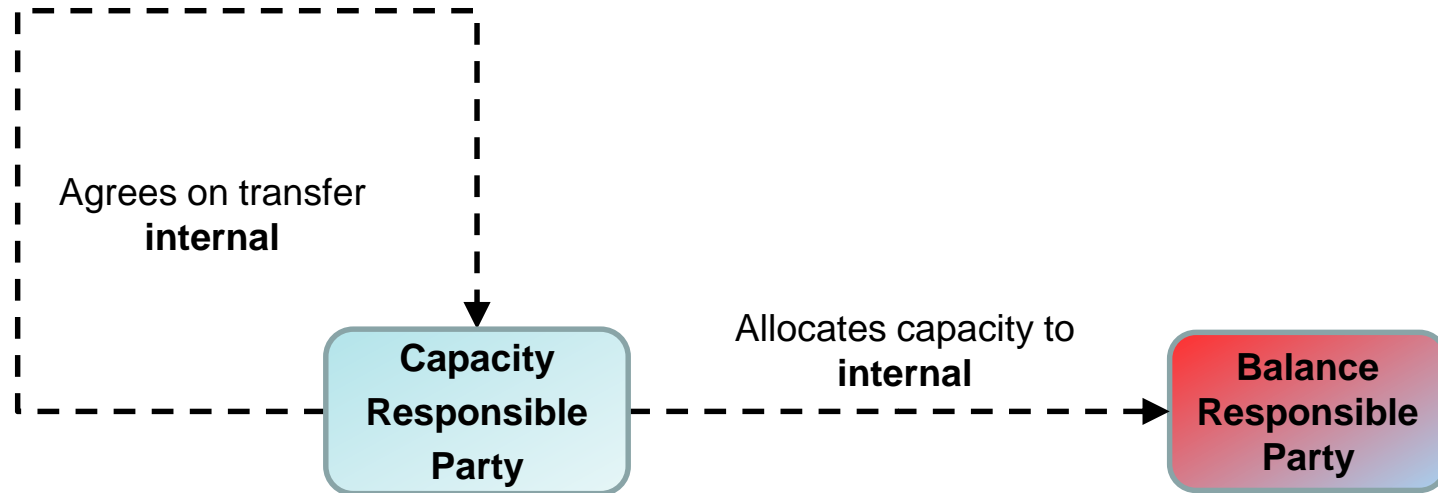
Nomination & Matching – Area Coordinator



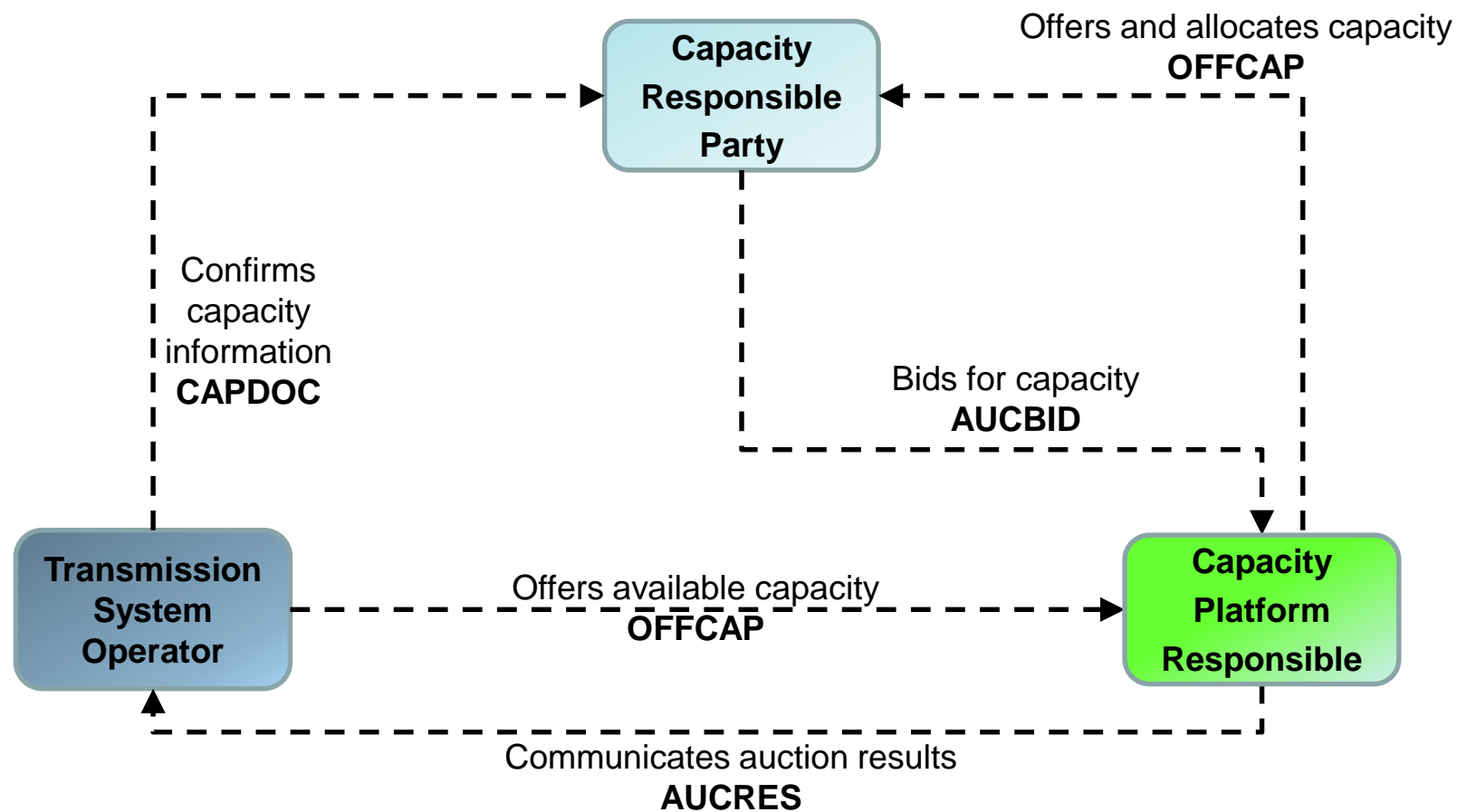
Capacity Allocation: Work in progress



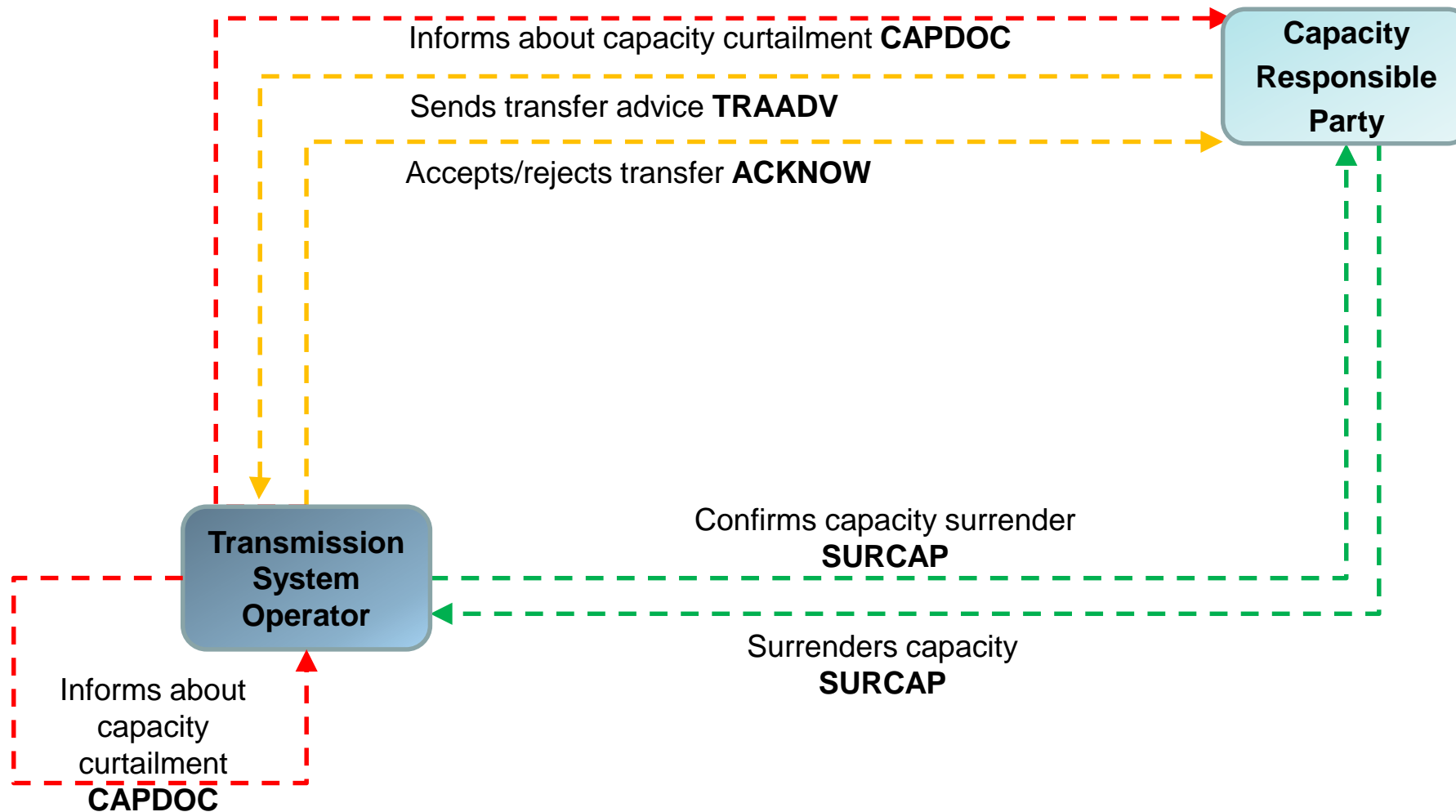
Capacity Allocation 1



Capacity Allocation 2



Capacity Allocation 3



Definitions get closer – Work in progress

ENTSOG glossary

'network user' means a customer or a potential customer of a transmission system operator, and transmission system operators themselves in so far as it is necessary for them to carry out their functions in relation to transmission.

Additional requirement for **'network user'** under CAM NC:

Joint booking platforms shall apply the following rules: [...] in order to use the services of the booking platforms network users shall accede to and be compliant with all applicable legal and contractual requirements that enable them to book and use capacity on the relevant transmission system operators' network under a transport contract.

Additional requirement for **'network user'** under BAL NC: The respective rights and obligations originating from this Regulation with regard to network users shall only apply to those **network users** which have concluded a legally binding agreement, being a transport contract or another contract, which enables them to submit trade notifications in accordance with Article 5.

Gas Role Model in progress

BRP: A party that manages its own portfolio and/or the portfolios on behalf of other parties and is financially responsible for the account imbalance. Its actions are based on a legally binding agreement, being a transport contract or another contract. Additional information: May be a Network User following the definition in the ENTSOG glossary.

CRP: A party that books the capacity. Its actions are based on a legally binding agreement, being a contract with the capacity platform or with the TSO or another contract. Additional information: May be a Network User following the definition in the ENTSOG glossary.

Final words

„A role model is never finished. But at a certain time it needs to be ready.“



Troll A, Equinor by Oyvind Hagen

Thank you for your attention

For more information:

www.easee-gas.eu





7. CEF eDelivery team

Maarten Daniels

CEF



AS4 Conformance Testing for the ENTSOG community

Connecting Europe Facility

DIGIT
Directorate-General
for Informatics

DG Connect
Directorate-General for Communications
Networks, Content and Technology



Agenda

What are the CEF Building Blocks


eDelivery AS4 profile and its relation to the ENTSOG AS4 profile

CEF eDelivery Conformance testing service

Grants available from INEA

Q&A

What are
the CEF building blocks?

A background network diagram consisting of numerous blue circles of varying sizes connected by thin lines, creating a complex web-like structure. The circles are more densely packed on the left side and become sparser towards the right.

How is the Commission helping **PAs and businesses** build digital services which comply to EU regulations?

Standards.

The Connecting Europe Facility's mission is to support projects to use basic components, based on standards, that will ensure systems can communicate with each other.

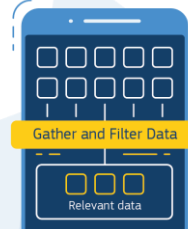
We call these basic digital components

Building Blocks + Grants

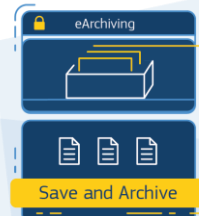
Digital Europe's building blocks are designed to help you build **digital services people can trust**



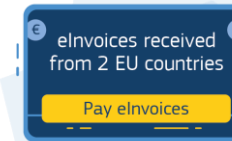
Big Data Test Infrastructure



Context Broker



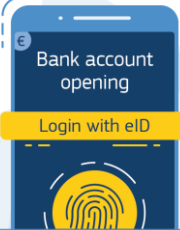
eArchiving



eInvoicing



European Blockchain Services Infrastructure



eID



eDelivery

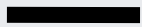


eSignature



eTranslation

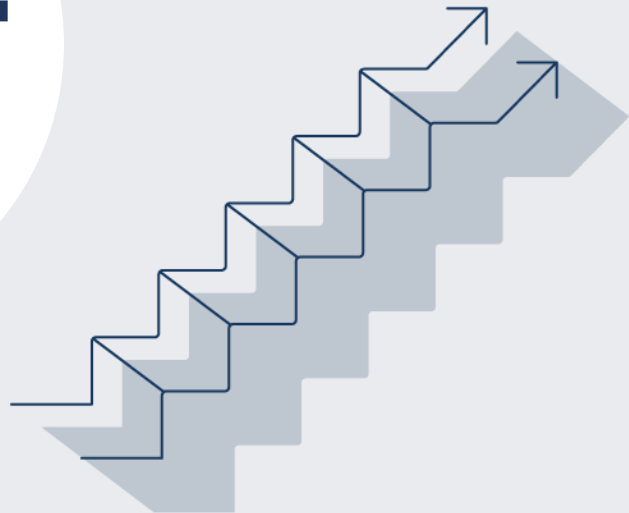
How many projects have used the building blocks?



120+
projects

[View Dashboard](#)

Growing potential cases are bringing us closer to fulfilling the dream.



Connecting Europe together

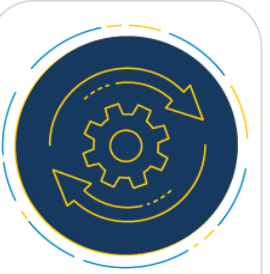
Co-develop and partner
With other parties



Build
The solution from scratch based on a European standard



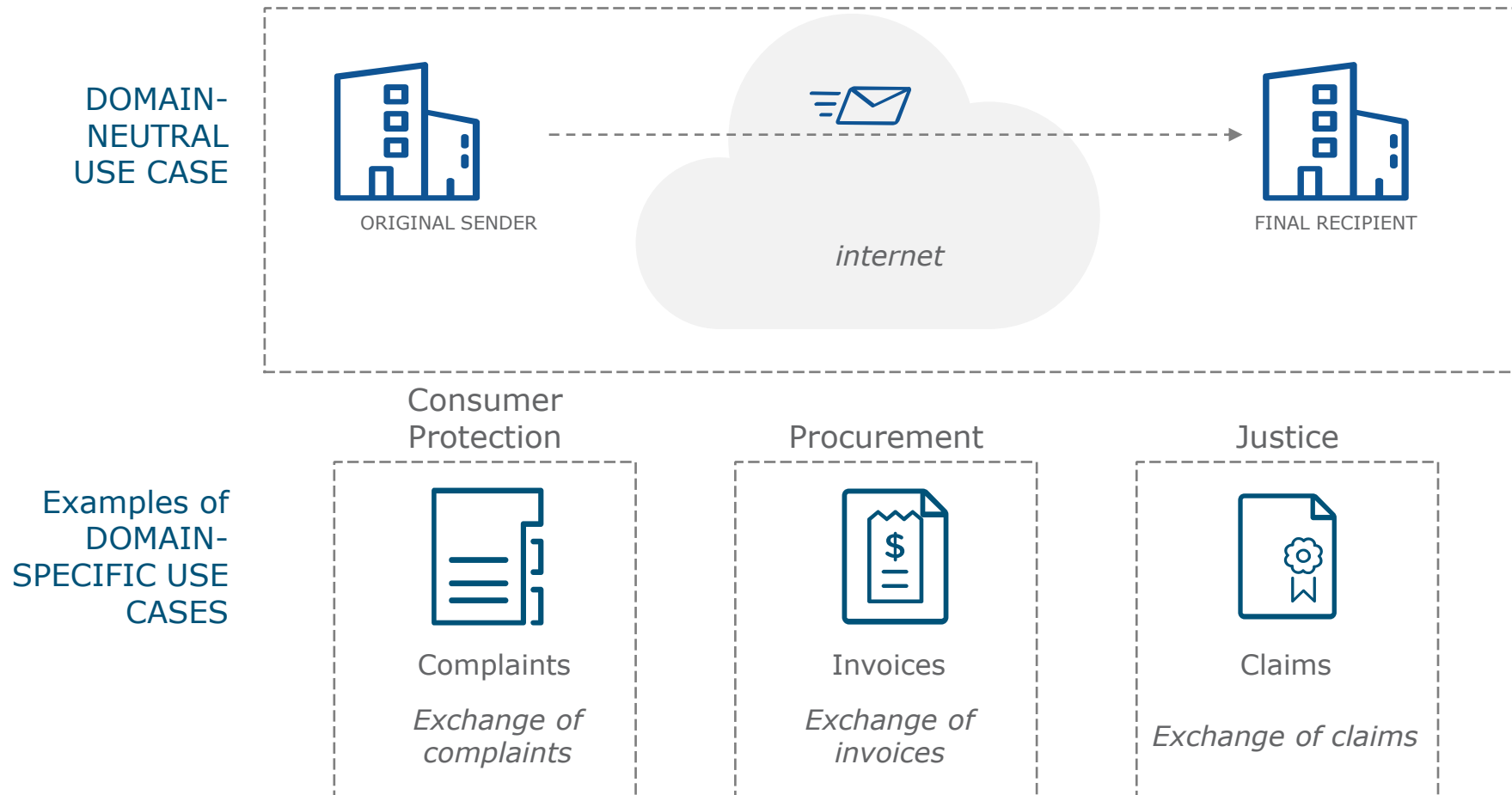
Buy
A compliant solution from the market



Reuse
A sample software available on CEF website

European Standards

The eDelivery Use-Case



eDelivery onboarding-race



PHASE

COMMITMENT GATE

SET UP

PHASE	PROSPECTING	ELICIT requirements	DESIGN eDelivery infrastructure	SELECT eDelivery solutions	DEPLOY eDelivery solutions	OPERATE eDelivery solutions
CEF DSIs	EU Student eCard DG CNECT NEW		eHealth (AS4) DG SANTE		eHealth (SMP) DG SANTE	e-Justice eCodex DG JUST
	Platform on Disinformation DG CNECT NEW				EESSI DG EMPL	eProcurement (*) GROW DIGIT
Other Policy Projects	Customs Single Window DG TAXUD	eTransport Docs DG MOVE	Maritime Single Window DG MOVE	ICS2 DG TAXUD	DECIDE (upgrade) SG	EPREL DG ENER
	ECRIS DG JUST	NIVA project REA/AGRI/CNECT NEW		TAPAS DG TAXUD	EUDAMED 3 DG GROW	PNR (regulated) DG HOME
	Central Clearance Import DG TAXUD	FLUX TL DG MARE		SPEED2 DG TAXUD	eEvidence DG JUST	
	Inland Waterway Transport DG MOVE	Single Digital Gateway DG GROW NEW		IRI DG JUST		
	CISE DG MARE			TACHOnet DG MOVE		
	Exchange of road-safety-related traffic offences DG MOVE NEW					
	ODOCAR DG MOVE NEW					
Member State led projects (including CEF grants)	Global Interoperability Framework EESPA		Utdataprojektet DIGG	EDI4STEEL TNO (NL) NEW	eDelivery national gateway AMA (PT) NEW	NOBLE project (Postal Services)
			X-Road NIIS		eDelivery national gateway in CY NEW	TOOP (once-only)
			Dutch Energy Market NEDU NEW		AS4 Interoperability SP in IE and SE NEW	Slovenia Supreme Court's communications Laurentius
					UP-Access upgrade to AS4 of SP in BE, DE, ES, IT NEW	e-Books Nets and PostNord
					eDelivery national gateway in RO NEW	e-Impact (CEF Transport)
Other institutions	European Aviation Safety Agency	EMSA SafeSeaNet	OSS system European Agency for Railways		CIxP The European Council	eDocX2017 DG HOME (EMCDDA)
	European Anti-Fraud Office					PCN system European Chemicals Agency
	Eurojust					ENTSOG (Gas operators)
	IMMC Parliament					
	European Citizens' Initiative					

(*) Also part of PEPPOL

Pilot/PoC projects

CEF eDelivery Success Stories

We want to **share your experience** with CEF eDelivery services

And **promote CEF** eDelivery to help others understand how they can be used!

What kind of stories do we share?

- Public administration implementation stories
- Service providers stories – How did they help a public administration realize a project?
- Industry specific stories

Read all the Connecting Europe success stories on CEF Digital

[View >](#)

The screenshot shows the 'Connecting Europe Success Stories' page on the CEF Digital website. The page features a search bar at the top right, navigation links for 'CEF', 'Building Blocks', 'Digital Infrastructures', 'News', and 'Contact us', and a breadcrumb trail 'CEF Digital > Success Stories'. The main heading is 'Connecting Europe Success Stories', followed by a sub-heading 'Hear from the teams that have successfully used CEF Building Blocks in government and business.' Below this is a call to action: 'If you've recently used a CEF Building Block, we would like to hear your story. Send us an email.' The page displays two featured stories: 'eInvoicing' (Scotland aims to eliminate millions of paper invoices with eInvoicing, dated Oct 04, 2018) and 'eSignature' (CEF eSignature facilitates the first electronic signature on an EU regulation!, dated Sep 27, 2018). Each story includes a thumbnail image, a title, a date, a category tag, and a 'LEARN MORE' button. On the right side, there is a 'Latest' section with links for 'News', 'Event calendar', 'Digital Infrastructures', and 'Media library', a 'Success stories' link, and a 'Follow us' section with social media icons for Twitter and LinkedIn, and a newsletter subscription form with a 'Subscribe' button.

eDelivery AS4 profile and its relation to the ENTSOG AS4 profile

Goals of eDelivery (AS4)



Interoperability

Implementing common technical specifications that enable diverse organisations to exchange data and documents



Security

Promoting an atmosphere of trust among all parties in the message exchange network



Scalability & Performance

Enabling the number of parties in the data exchange network to grow as well as the number of exchanged messages



Legal Assurance & Accountability

Promoting a high level of transparency and confidence among all participants in the message exchange network

Technical specifications of eDelivery



Available
for **free**



Supported by
**multiple
programming
languages**



Independent from
any specific
vendor products



**Supported by (Open Source
and Commercial) solutions**
that can be purchased in a
competitive environment

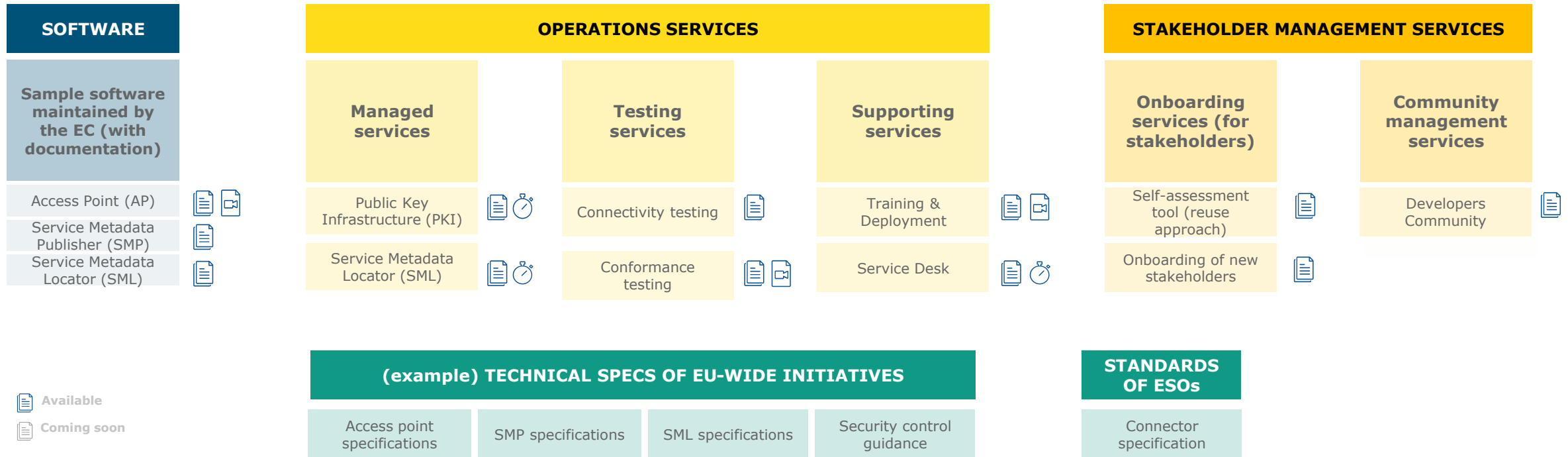
eDelivery AS4 profile
vs
ENTSOG AS4 profile

- Both profiles are closely related
- Main differences relate to the Usage Profiling
- Modularisation of the eDelivery AS4 profile has been released in May 2018
- The result is a common core (shared with the ENTSOG AS4 profile) and optional additional modules, called profile enhancements
- This provides opportunities for ENTSOG solution providers to perform conformance testing and mitigate potential interoperability issues



CEF eDelivery Conformance Testing Service

CEF eDelivery Service offering



-  Available
-  Coming soon



Service offering Description (SoD)

All services are described in an SoD describing its purpose, the users for which it is for, its benefits and the process to obtain it



Service Level Arrangements (SLA)

Documents that describe Service Level Targets to be reached when delivering Building Block Services.



eLearning, videos, success stories

Some services feature multimedia such as eLearnings, instructional videos or success stories to help grasp what the service is about

CEF Digital platform

CEF eDelivery service offering, and more about the building block, can be found online

[CEF Digital >](#)

Conformance testing

OBJECTIVE OF THE SERVICE

Verify that an implementation of the CEF eDelivery Access Point and SMP specifications, a software package either commercial or Open Source, conforms to the specifications of the CEF eDelivery Access Point.

The following specifications are tested within the scope of this service:

- eDelivery AS4 Profile
- eDelivery SMP Profile

The CEF eDelivery Team provides ready to use test cases, a testing platform, and supports the users of the CEF eDelivery Conformance Testing service during the entire testing process.

BENEFITS

- Confirm and assure your users/customers that your software package or implementation of the CEF eDelivery Access Point or SMP conforms to the CEF eDelivery specifications
- Testing anywhere at anytime
- Testing supported by professional staff of the European Commission



USERS

Software Providers
Service Providers

STATUS

- Service
- Documentation

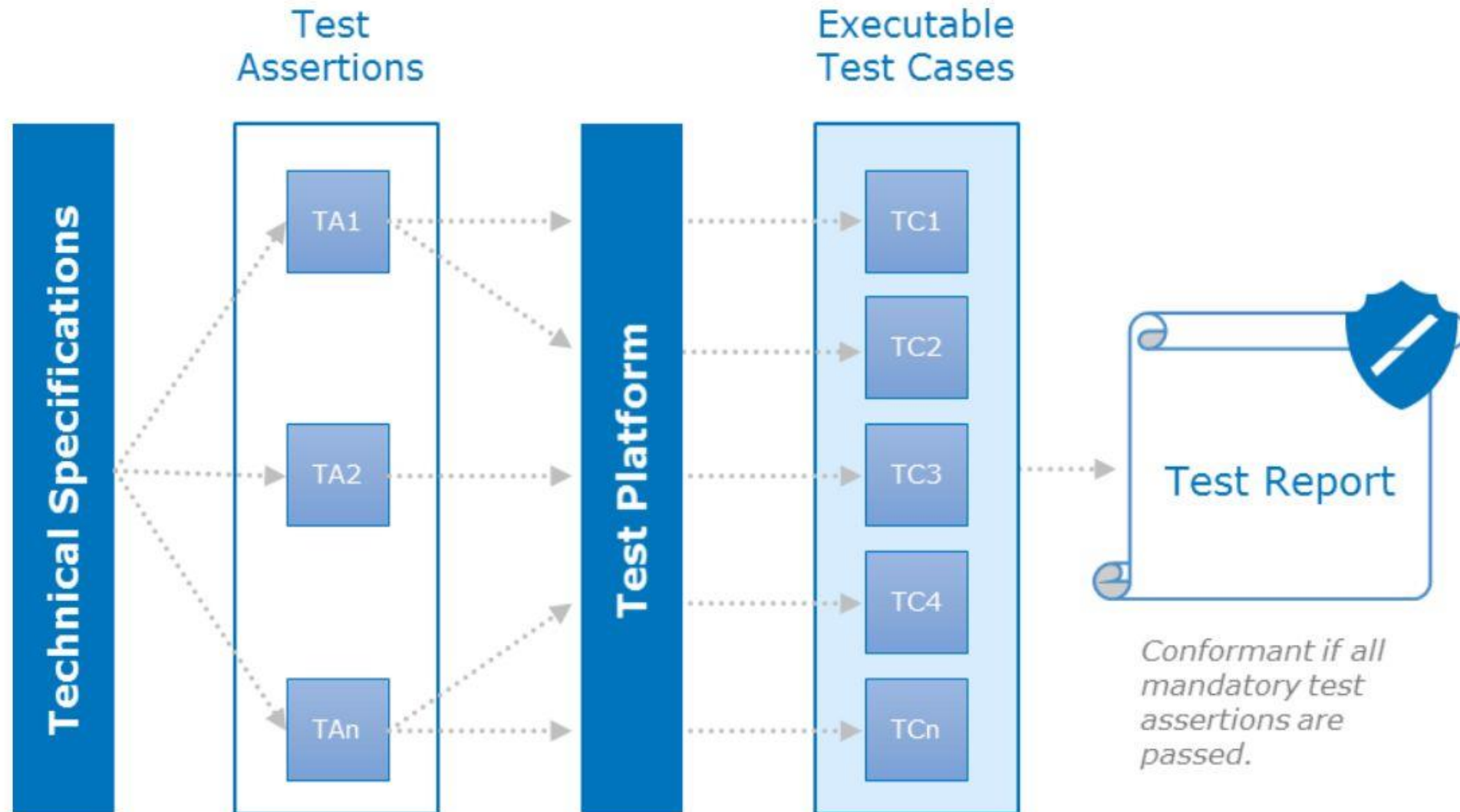
More info

[CEF Digital >](#)

Get started

[Contact us >](#)

From specifications to test cases



ENTSOG specific optional module

- Domain Profiling (ENTSOG specific)
 - Values for PartyId and @type, Service, Action, Role
 - Values for AgreementRef, ConversationId
 - MPC
 - Payload part property
 - EDIG@S payloads
- ENTSOG specific Test Assertions and Test Cases are now available to the ENTSOG community
 - Flame was listed as the first ENTSOG module conformant solution.
 - The ENSTOG module is available to be rolled out to all ENTSOG interested solution providers.

Vendors - Take action and become conformant

Benefits of being conformant to the CEF
eDelivery specifications

Vendor perspective

- Get additional Quality Assurance for your product
- Increase your chances for successfully communicating with other implementations
- Get brand and product visibility by being present on the list of conformant implementations
- Be ready for call for grants that require an implementation to be conformant

- The service is provided for free
- Assistance is available during the entire process

Clients - Take action and require vendors to become conformant

Benefits of being conformant to the CEF eDelivery specifications

Client perspective

- Get a clear view on the capabilities of the solution you are buying
- Verify that the solution is conformant to the CEF eDelivery specifications (CEF eDelivery AS4 and ENTSOG AS4 share the same common core)
- Reduce the risk of buying a solution that is not interoperable with other implementations
- Prevent spending time and money on debugging AS4 related issues in production

eDelivery AS4 conformant solutions

- Access Point software
 - eDelivery AS4 conformant solutions**
 - Access Point specifications
 - SMP software
 - SMP specifications
 - SML software
 - SML service
 - SML specifications
 - PKI Service
 - Security Controls guidance
 - Connector specifications
 - Onboarding & stakeholders follow-up
 - eDelivery Conformance testing
 - eDelivery Connectivity testing
 - Cost estimation tool
 - Self-assessment tool
 - eDelivery Service Desk
- Training and Deployment
 - eDelivery Developers Community
 - Trust Models Guidance





eDelivery AS4 conformant solutions

This page lists the solutions that have passed or are in the process of passing the conformance testing according to the eDelivery AS4 profile:

- Axway
- B2BRouter
- Babelway
- Bizbrains
- Domibus (EC sample implementation)
- eefacta Server
- EESSI AS4.NET
- Edicom ASx Server
- Data Interchange
- DCS EIP
- Flame
- Holodeck B2B
- IBM
- iFenix
- Laurentius
- Mendelson
- Navitasoft - IP Systems AS4-IP
- Nota
- OXALIS
- Pagero
- phase4
- RSSBus
- SEEBURGER
- ViaAdValvas Gateway
- ADES
- Integration Cloud

A document listing [all vendors supporting AS4](#), including the ones that have not gone through the [CEF conformance testing process](#), is available at bottom of this page.

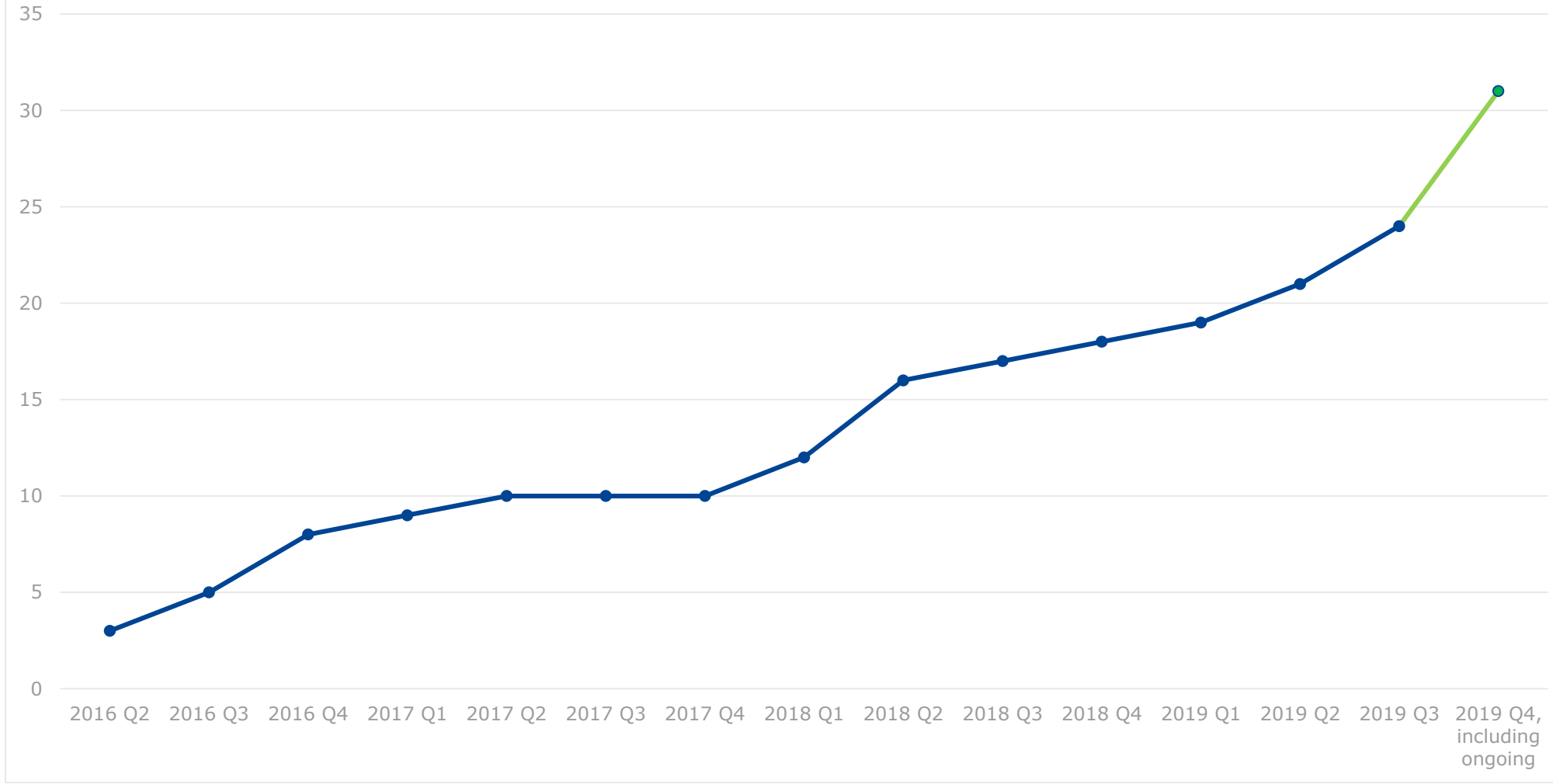
LEGEND

 CP	Common Profile	 4C	Four Corner Topology
 DS	Dynamic Sender	 DR	Dynamic Receiver

More information on CEF Digital

[Conformant Solutions >](#)

eDelivery AS4 conformant solutions evolution





Grants available from INEA

More information: <https://ec.europa.eu/inea/>



CONNECTING
EUROPE FACILITY

CEF ENERGY

CEF TELECOM

▶ CALLS

▶ HOW TO APPLY

▶ BENEFICIARIES'
INFO POINT

▶ CEF TELECOM
PROJECTS

▶ SIGN UP AS AN
EXPERT

Calls

€1.04 billion is made available for the telecommunications sector under the CEF programme for 2014-2020. Part of the funding under the CEF is expected to be made in the form of grants allocated following competitive calls for proposals. INEA manages these calls for the deployment of a set of **generic services** linking national infrastructure to the core service platforms across the EU. The process of allocation of EU financial support in the form of grants is explained in the [how to apply](#) section.

Open calls

Call	Opening date	Deadline
2019-2 call	4 July 2019	14 November 2019

Follow [@inea_eu](#) and [#CEFTelecom](#) to be informed about the next calls.

Forthcoming calls

[CEF Telecom 2019 Work Programme and Corrigendum](#)

Follow us on Twitter [@inea_eu](#) or LinkedIn for updates

Closed calls

2019-1 Call for proposals

2018-5 Call for proposals

2018-4 Call for proposals

2018-3 Call for proposals

2018-2 Call for proposals

2018-1 Call for proposals

What is covered?

- Deploying access points and/or operating access points for one year.
- Deploying SMPs and/or operating SMPs for one year.
- Upgrade of data exchange solutions (Commercial Off-the-Shelf, Open-Source Software and other) to support (and therefore fully comply with), the CEF eDelivery standards (*which can also cover interoperability testing with new or existing conformant solutions*).

To be informed about the 2020 calls, monitor <https://ec.europa.eu/inea/en/connecting-europe-facility/cef-telecom/apply-funding>

Call for action

Check out the eDelivery AS4 profile

<https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/Access+Point+specifications>

Check out the Conformance Testing service

<https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/eDelivery+Conformance+testing>

Get listed as a conformant solution

<https://ec.europa.eu/cefdigital/wiki/display/CEFDIGITAL/eDelivery+AS4+conformant+solutions>

Apply for Grants to upgrade your solution

<https://ec.europa.eu/inea/en/connecting-europe-facility/cef-telecom/apply-funding>



Q&A



For questions or support contact:

CEF-EDELIVERY-SUPPORT@ec.europa.eu



8. User success story – Agreement Updates

Axway



ENTSOE/EASEE-gas

Brussels November 28th

Håkan Nyström

Petter Hedlin

Joint ENTSOG/EASEE-gas workshop on Data Communication Harmonisation for Gas Transmission

Agenda for today

Axway overview

Axway Amplify (Garter talks about Hybrid Integration Platform, in Axway we call it AMPLIFY).

Axway AMPLIFY B2Bi. B2Bi is a corner stone in Axway AMPLIFY.

Axway commitment to ENTSO-G and EASEE-gas, Edig@s. Old, current and also for coming version 6. AS2, AS2++(RSASSA-PSS) and AS4 .

Proof of Concept – AS4 Automated Certified Exchange

Close

About Axway



Listed on Euronext (AXW.PA)
Registered in France

Phoenix, AZ
Global headquarters

€349M
2017 Revenue

1800 Employees
18 countries worldwide

11,000 Customers
100 countries worldwide

Enterprise Software for Hybrid Integration and Content Collaboration
API, MFT, B2B, CSOS, Track & Trace

Key Industries
Financial Services, Supply Chain, Public Sector, Healthcare

Axway a Leader in Gartner 2019 Magic Quadrant for Full Life Cycle API Management

According to Gartner,

- “Effective API programs lay the foundations for digital transformation by enabling organizations to build a platform and develop an ecosystem.”
- “Expect the already widespread usage of APIs to increase even more rapidly in future.”
- “API programs cannot run effectively without full life cycle API management.”

Figure 1. Magic Quadrant for Full Life Cycle API Management



Source: Gartner (October 2019)

We draw on deep industry expertise and standards

OVER **74** INDUSTRY STANDARDS SUPPORTED

14 of the world's 15 largest banks

World's top 20 pharmaceutical manufacturers

All major U.S. healthcare wholesalers & distributors

Extensive U.S. federal defense agency footprint

Eight of the 16 major automotive OEM

Four of the top 10 U.S. retailers

11 of the top 100 largest container ports in China



Gas & Energy



Financial Services



Government & Public Sector



Healthcare



Life Sciences



Logistics



Manufacturing



Retail



Supply Chain



Technology



Transportation



Automotive

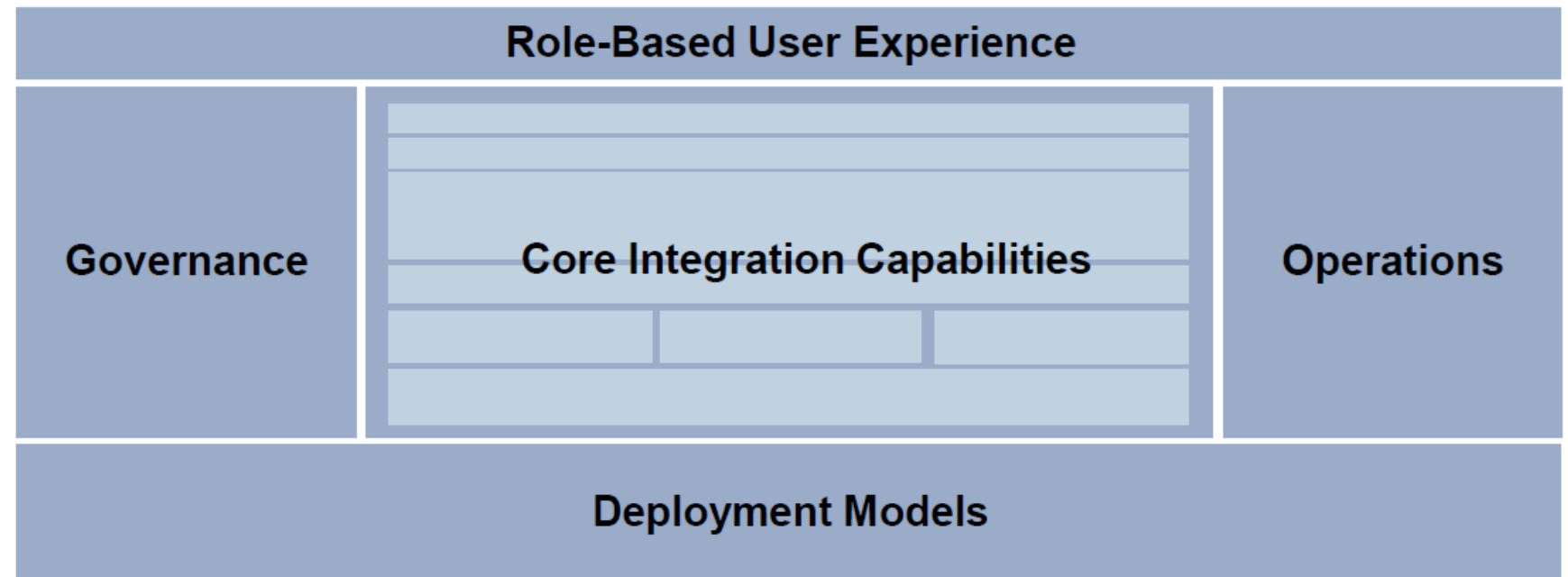
Gartner - The Hybrid Integration Platform

The Hybrid Integration Platform:

Can you Be in Business Without One?

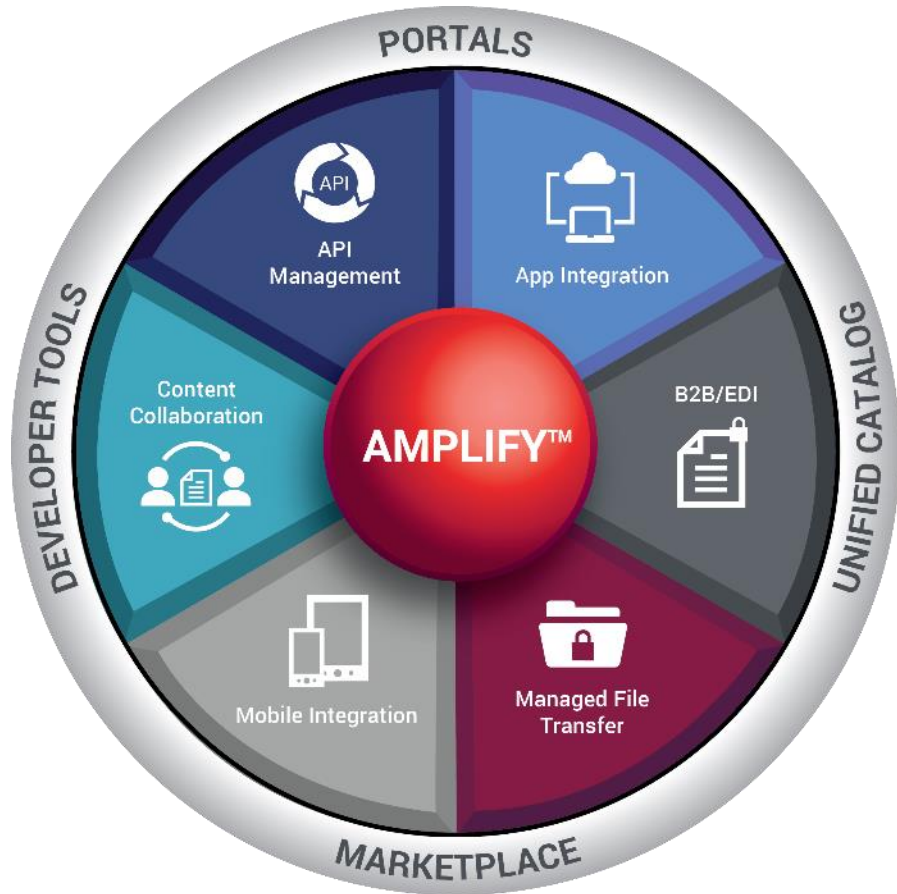
"Massimo Pezzini"

Which Capabilities Should a Hybrid Integration Platform Provide?



Gartner Hybrid Integration Platform Capability Framework

Axway AMPLIFY: One Platform, One Experience, Multiple Integration Patterns



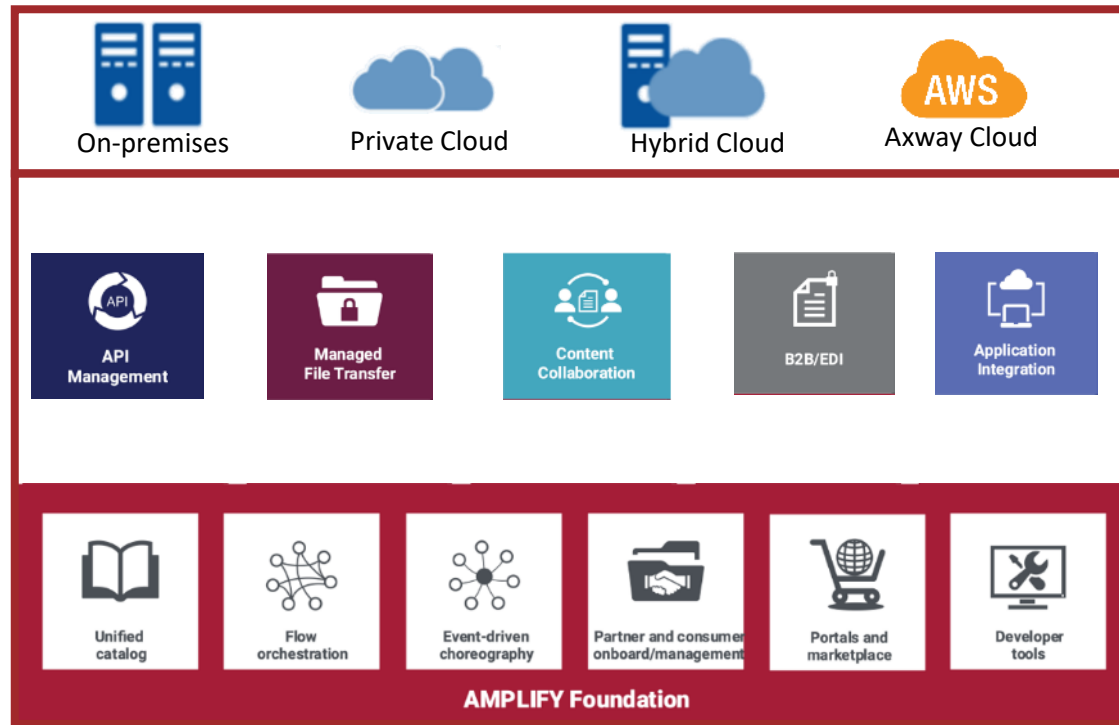
A **Hybrid Integration Platform** to;

- Speed the discovery, use and deployment of integrations for new audiences
- That combines traditional integration patterns with APIs
- To provide Enterprise ready integration

for Faster Innovation

Axway Amplify

Design, build, and operate ecosystem interactions built on Axway Hybrid Integration Platform



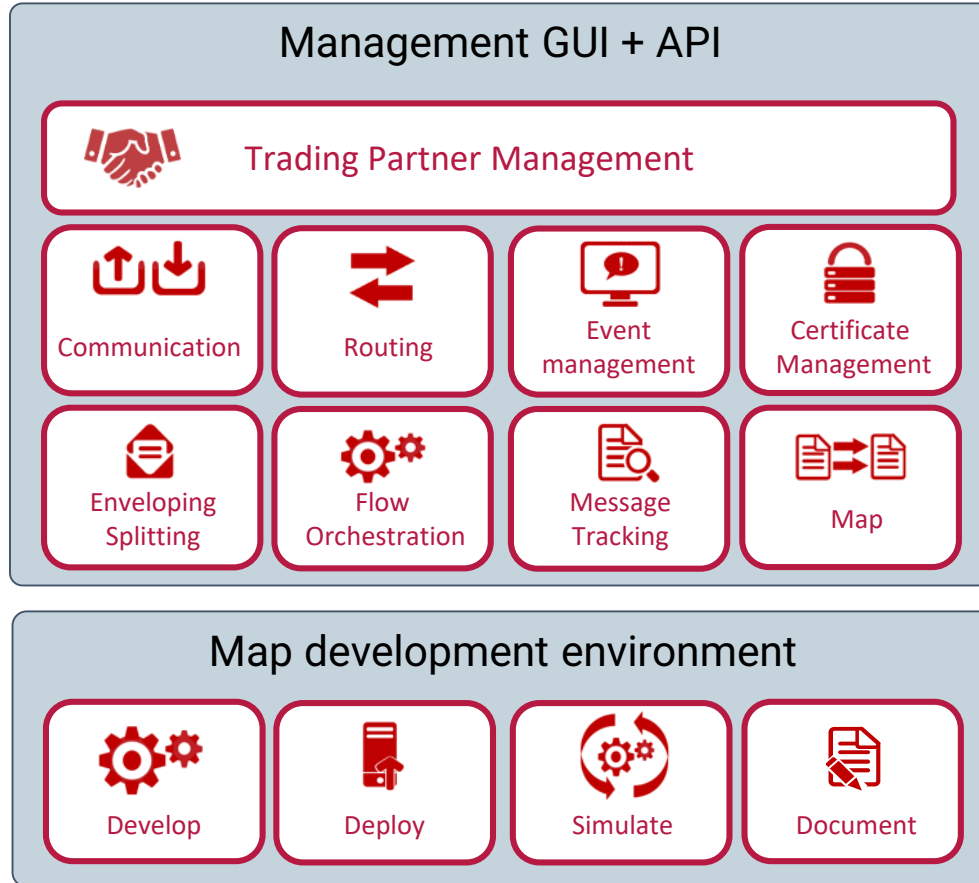
AMPLIFY B2Bi Functional Overview

Applications



FTP, SFTP
 JMS, IBM MQ
 Web Services
 HTTP/S
 PeSIT
 File System
 SAP IDOC ALE
 SMTP/POP3
 Custom
 JDBC

..



Trading Partners

AS1/AS2/AS3/AS4, PeSIT
 S/FTP/S
 HTTP/S
 SMTP/POP3
 ebXML (HTTP, SMTP)
 RNIF 1.1/2.0 (HTTP)
 EBICS
 cXML (HTTP)
 JMS, IBM MQ, Web Services
 OFTP V1/V2
 X.420/X.435
 File System
 PGP (FTP/SFTP)
 WebDAV, HL7-MLLP
 WebTrader (up/download)
 ..

Comprehensive & secure
 B2B Communications

Partner & community
 Management

Faster application
 integration

Visibility

Ease of Use



EASEE-gas/ENTSOG

Axway following the Easee-gas community and are committed to Edig@s

EASEE-gas, ENTSOG and AS4

Axway have for over 20 years followed the Gas Industry Community and supported Edig@s

- AS 2
 - Edig@s
 - Signature Algorithm RSASSA-PKCS1-v1_5
- AS2 ++
 - Edig@s
 - Signature Algorithm RSASSA-PSS
- AS4 ENTSOG Usage Profile
 - eDelivery AS4 profile
 - Edig@s
 - Signature Algorithm RSASSA-PKCS1-v1_5
- AS4 ++ (in development pipeline)
 - Signature Algorithm RSASSA-PSS



Axway B2Bi is fully Drummond certified for AS2 and AS4. It has also been tested with the “Connecting Europe Facility” (CEF) testing service.



ENTSOGE/EASEE-gas POC

Equinor and Gassco results

7- 8 October 2019

AS4 Agreement update POC/Test

- ✓ Testing of agreement updates carried out between Equinor and Gassco on 2019-10-07/08
- ✓ Both parties running Axway B2Bi version 2.4.1
- ✓ Two small issues found in the software – both were corrected on the spot
- ✓ A full, two-way, agreement update as outlined in the kick-off meeting was completed successfully

Going forward

- Axway R&D has included a fix for the found issues in an upcoming release
- Discussions and suggestions for improvements around agreement update handling in B2Bi underway

Test results

Equinor		Gassco
Test messages sent/received to establish baseline.	↔	Test messages sent/received to establish baseline.
Equinor sends an update request to Gassco (contains new certificate and new agreement identifier).	➔	Gassco receives and accepts update request from Equinor. Certificate and configuration is updated.
Test messages sent/received	↔	Test messages sent/received
Equinor receives and accepts update request from Equinor. Certificate and configuration is updated.	➔	Gassco sends an update request to Equinor (contains new certificate and new agreement identifier).
Test messages sent/received	↔	Test messages sent/received

Why AMPLIFY B2B Integration Services ?



WE HELP REDUCE COSTS

We help reduce the cost and complexity of the orchestration of business interactions inside the enterprise, along the supply/value chain, and throughout the trading community.



WE HAVE THE EXPERTISE

Our market leading capabilities, coupled with nearly two decades of experience working within the various industries, has uniquely positioned Axway to address a broad spectrum of customer/trading partner and application integration challenges.



WE SCALE YOUR BUSINESS

Our solution is the most versatile, easy to use, high-available and scalable solution on the market, providing customers the flexibility and scalability they need.

We offer 'Out-of-Box' *functionality* combined with 'Customizable' *flexibility*

Thank You

NEW PROCESSES THAT ALSO USE AS4 (BEYOND NOMINATION AND MATCHING)

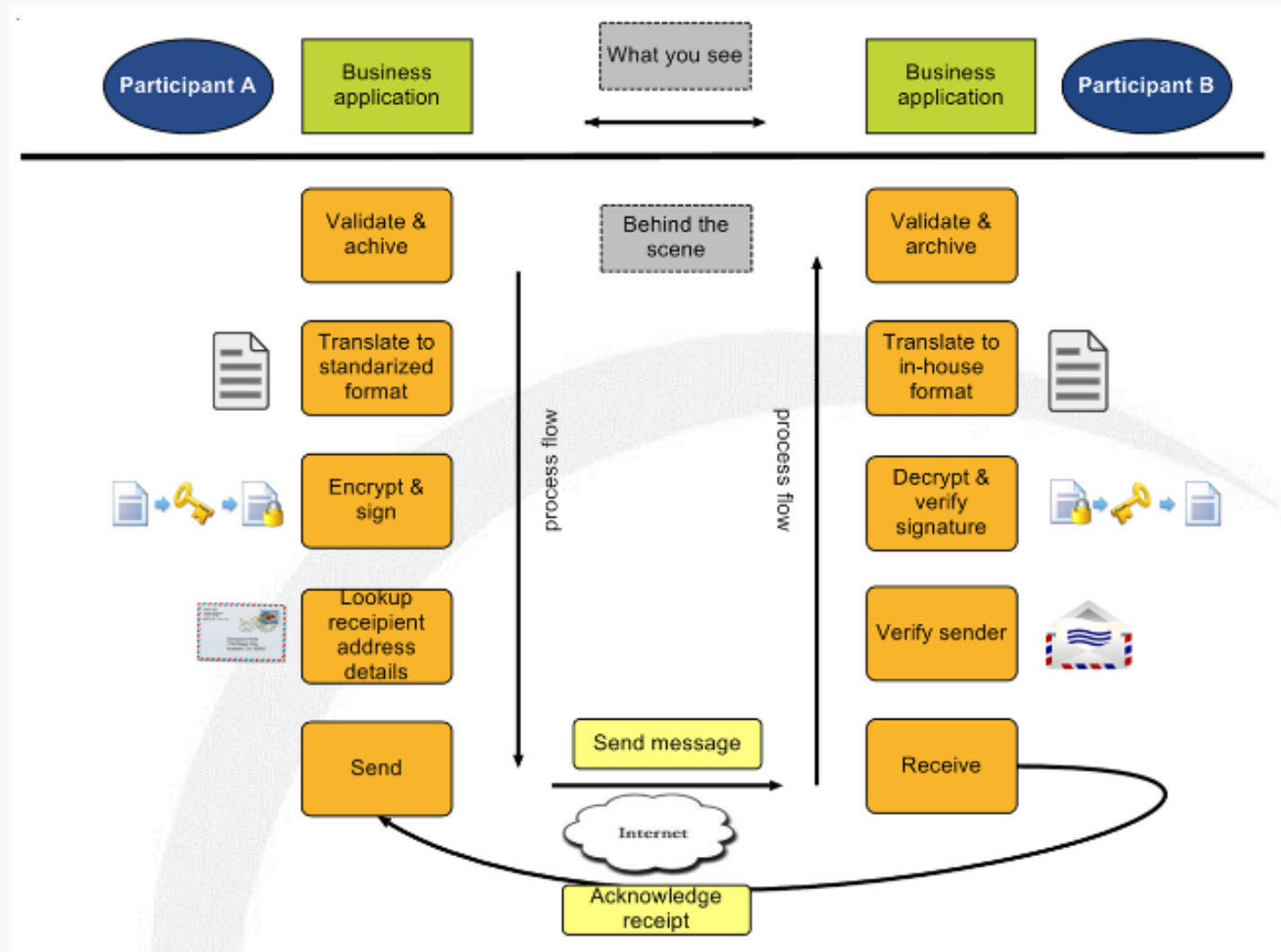
**Workshop on Data Communication Harmonisation for
Gas Transmission**

Brussels, 28 November 2019

Stanislaw Brzęczkowski



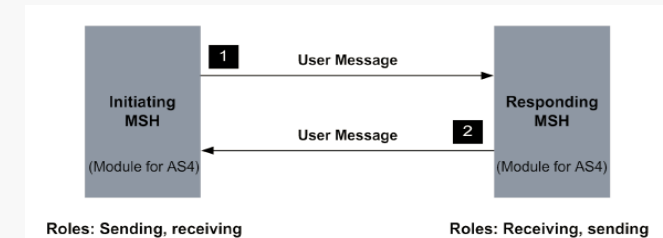
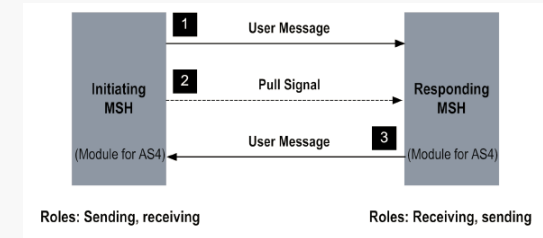
WHY AS4...?



WHY AS4...?

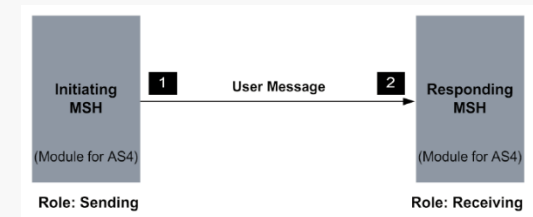
➤ Non-EDIG@S processes - because of security and flexibility (OASIS ebMS 3.0 AS4 Profile)

- **Interoperable:** AS4 is defined as an OASIS standard. It is built on top of existing standards, which have proven interoperability in the past: MIME, SOAP and WS-Security.
- **Secure:** AS4 uses a subset of the WS-Security features in order to assure message non repudiation and data confidentiality.
- **Reliable:** AS4 guarantees once-and-only-once delivery, via the exchange of acknowledgements and additional requirements on both send and receive side.
- **Payload agnostic:** AS4 can exchange any kind of payloads (XML, JSON, CSV, EDI, binary ...) and it supports also multiple payloads being sent in one AS4 message
- **Flexible:** AS4 support multiple communication patterns (One-Way/Push MEP, Two-Way/Sync MEP, Two-Way/Push-Pull MEP)



➤ EDIG@S processes – „recommended” AS4 (ENTSOG Profile):

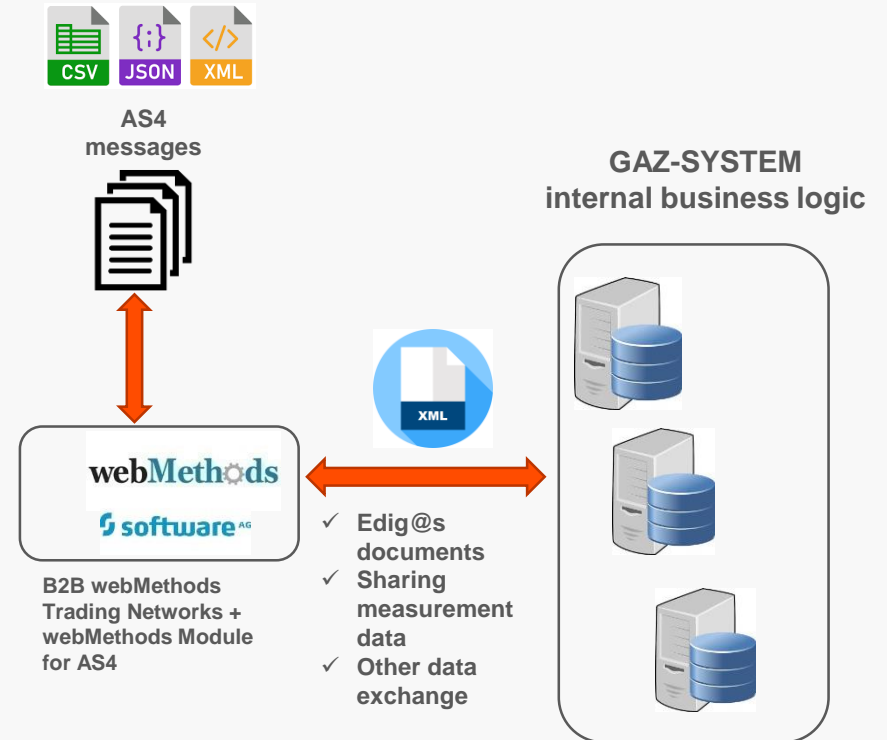
- COMMISSION REGULATION (EU) 2015/703 of 30 April 2015 establishing a network code on interoperability and data exchange rules (Interoperability Network Code) Article 21



AS4 IN GAZ-SYSTEM

Application of AS4 profile in GAZ-SYSTEM:

- Document Based: AS4 supports edig@s data exchange:
 - Nomination and Matching Process
 - Capacity Trading Process (GSA Platform)
 - Market Balancing Process
 - General Services Process
- Sharing measurement data with customers of GAZ-SYSTEM and another TSO, including:
 - archived data
 - alarm data
 - provisional aggregates
 - final aggregates (billing)
- Other data exchange
 - Daily reports (measured/final data)
 - Reporting to ALSI Platform (GIE) – LNG
 - Additional (non-edig@s-covered) features on GSA Platform



INTEROPERABILITY AND DATA EXCHANGE RULES

INT NC sets the European Union rules for the common data exchange solutions

ENTSOG developed common network operation tools (CNOTs)

GAZ-SYSTEM implemented data exchange solution in accordance with the interoperability rules

Article 21

Common data exchange solutions

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;
- (b) **integrated data exchange**: the data is exchanged between two applications directly on the respective IT systems;
- (c) **interactive data exchange**: the data is exchanged interactively through a web : **CNOTS AND DATA EXCHANGE**

2. The common data exchange solutions shall comprise the protocol, the data for exchange solutions shall be used for each of the types of data exchange listed in par

(a) For the document-based data exchange:

- (i) protocol: AS4;
- (ii) data format: Edig@s-XML, or an equivalent data format ensuring identical data format.

(b) For the integrated data exchange:

- (i) protocol: HTTP/S-SOAP;
- (ii) data format: Edig@s-XML, or an equivalent data format ensuring identical data format.

(c) For the interactive data exchange, the protocol shall be HTTP/S.

For all data exchange types set out in points (a) to (c), the network shall be internet.

	COMMON NETWORK OPERATION TOOLS
All	
2019	- CAP0554_170523_brs_cam+cmp_Rev_19.pdf
2018	
2017	- BAL0453_160622_BRS on nominations_V17.pdf
2016	- Implementation Guidelines for Capacity Trading Process
2015	- Implementation Guidelines for Nomination And Matching
2014	- INT0994-161026 Common Data Exchange Solution Table
	- INT1190-170816 Introduction to the ENTSOG Common Data Exchange Solutions_Rev_0
	- Presentation for the ENTSOG EU Data Harmonisation Public Workshop 6 September 2016

CNOTS AND DATA EXCHANGE

	COMMON NETWORK OPERATION TOOLS
All	
2019	CNOT CHANGE REQUEST GUIDELINES/FORM
2018	INTEGRATED DATA EXCHANGE USAGE PROFILE
2017	INTERACTIVE DATA EXCHANGE USAGE PROFILE
2016	AS4 - DOCUMENTS FOR IMPLEMENTATION
2015	
2014	- INT0488-161115 AS4 Usage Profile_Rev_3.6_clean_final 06 May 2019
	- INT0488-170328 AS4 Usage Profile_Rev_3.5_3.6_comparison 06 May 2019
	- INT0698-170816 AS4 Mapping Table_Edig@s 5.1_Rev_3.xlsx 11 Oct 2017

ROUTING AND PROCESSING AS4 MESSAGES BASED ON THE AS4 HEADER FIELDS (AND EDIG@S FIELDS)

➤ Service (CollaborationInfo):

- Nomination and Matching Process = **A06**
- Capacity Trading Process (GSA Platform) = **A04**
- Market Balancing Process (MARSIT) = **A13**
- General Services Process (ACKNOW) = **A11**
- Non-edig@s processes = **CUSTOM VALUES**

- ▶ 🏠 BRANCH on '/headerDoc/tns:Messaging/tns:UserMessage[0]/tns:CollaborationInfo/tns:Service/*body' (Execute processing service)
 - ▶ ⚡ A13: SEQUENCE (Edig@s Market Situation Process)
 - ▶ ⚡ A11: SEQUENCE (Edig@s General Services Processes)
 - ▶ ⚡ A06: SEQUENCE (Edig@s Nomination & Matching Process)
 - ▶ ⚡ A04: SEQUENCE (Edig@s Capacity Trading & Matching process)
 - ▶ ⚡ GsMeasurementAPI.services:getDataForPartner: SEQUENCE (MeasurementAPI)
 - ▶ ⚡ GsMeasurementAPI.services:sendReport: SEQUENCE (Daily Report)
 - ▶ ⚡ GSA: SEQUENCE (GSA Capacity Trading)
 - ▶ ⚡ http://docs.oasis-open.org/ebxml-msg/ebms/v3.0/ns/core/200704/service: SEQUENCE (TestService)
 - ▶ ⚡ \$default: SEQUENCE

MARKET BALANCING PROCESS

MARKET SITUATION (MARSIT) EDIG@S DOCUMENT EXCHANGE

A Market Situation document (MARSIT) is used by GAZ-SYSTEM to data exchange:

- Between forecasting party (DSO) and TSO and between TSO and Network User
 - Non-daily metered forecasts
- between Allocation Agent and TSO and between TSO and Network User
 - Network User's allocated quantities
 - Network User's imbalance

MARKET BALANCING PROCESS

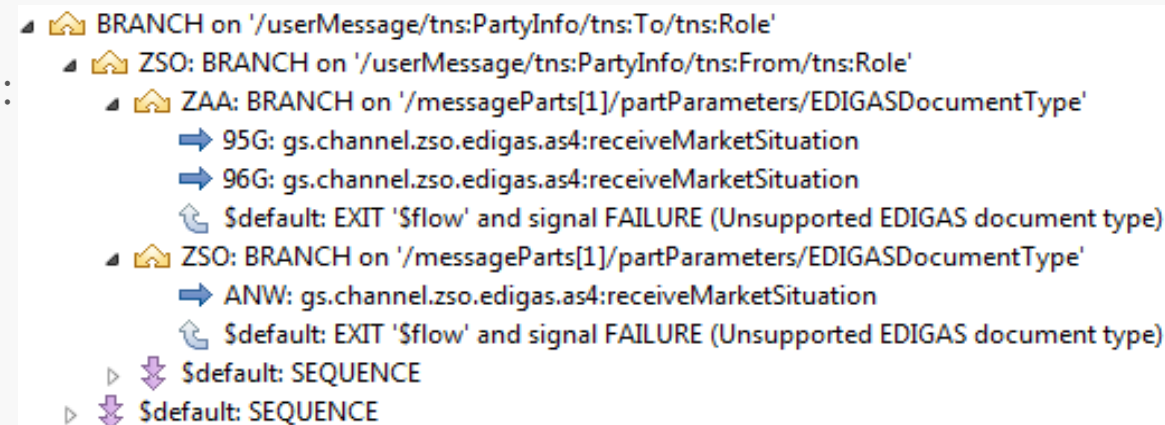
MARKET SITUATION (MARSIT) EDIG@S DOCUMENT EXCHANGE

Edig@s document types used by GAZ-SYSTEM:

- **ANW** = Non-daily metered forecast;
- **95G** = Provisional allocation report;
- **96G** = Definitive allocation report;
- **14G** = Imbalance notification;

MARSIT communication scenarios (via AS4):

- Allocation Agent to Transmission System Operator (**ZAA -> ZSO**):
 - **MARSIT / 95G**
 - **MARSIT / 96G**
- System Operator to System Operator (**ZSO -> ZSO**):
 - **MARSIT / ANW**
- Transmission System Operator to Network User (**ZSO -> ZSH**):
 - **MARSIT / 95G**
 - **MARSIT / 96G**
 - **MARSIT / 14G**
 - **MARSIT / ANW**



MARKET BALANCING PROCESS

AS4 MAPPING TABLE FOR MARSIT

Edigas Process Area Value	AS4 Service	AS4 Action	From/Role Code	Party Role Value	To /Role Code	Party Role Value2	Part Property EDIG@S Document Type Code	EDIG@S Document Type Name	Schema Type Value
Edigas 5.1 Market Balancing Process	A13	http://docs.oasis-open.org/ebxml-msg/as4/200902/action	ZSO	Transmission System Operator	ZSH	Registered Network User	ANW	Non-daily metered forecast	MARSIT
Edigas 5.1 Market Balancing Process	A13	http://docs.oasis-open.org/ebxml-msg/as4/200902/action	ZAA	Allocation Agent	ZSO	Transmission System Operator	95G	Provisional allocation report	MARSIT
Edigas 5.1. Market Balancing Process	A13	http://docs.oasis-open.org/ebxml-msg/as4/200902/action	ZSO	Transmission System Operator	ZSH	Registered Network User	95G	Provisional allocation report	MARSIT
Edigas 5.1 Market Balancing Process	A13	http://docs.oasis-open.org/ebxml-msg/as4/200902/action	ZSO	Transmission System Operator	ZSO	Transmission System Operator	95G	Provisional allocation report	MARSIT
Edigas 5.1 Market Balancing Process	A13	http://docs.oasis-open.org/ebxml-msg/as4/200902/action	ZAA	Allocation Agent	ZSO	Transmission System Operator	96G	Definitive allocation report	MARSIT
Edigas 5.1. Market Balancing Process	A13	http://docs.oasis-open.org/ebxml-msg/as4/200902/action	ZSO	Transmission System Operator	ZSH	Registered Network User	96G	Definitive allocation report	MARSIT
Edigas 5.1 Market Balancing Process	A13	http://docs.oasis-open.org/ebxml-msg/as4/200902/action	ZSO	Transmission System Operator	ZSO	Transmission System Operator	96G	Definitive allocation report	MARSIT
Edigas 5.1. Market Balancing Process	A13	http://docs.oasis-open.org/ebxml-msg/as4/200902/action	ZSO	Transmission System Operator	ZSH	Registered Network User	94G	Account position report	MARSIT
Edigas 5.1. Market Balancing Process	A13	http://docs.oasis-open.org/ebxml-msg/as4/200902/action	ZSO	Transmission System Operator	ZSH	Registered Network User	14G	Imbalance notification	MARSIT
Edigas 5.1. Market Balancing Process	A13	http://docs.oasis-open.org/ebxml-msg/as4/200902/action	ZSO	Transmission System Operator	ZSH	Registered Network User	APG	Account synchronisation	MARSIT
Edigas 5.1 Market Balancing Process	A13	http://docs.oasis-open.org/ebxml-msg/as4/200902/action	ZSO	Transmission System Operator	ZSO	Transmission System Operator	APG	Account synchronisation	MARSIT
Edigas 5.1 Market Balancing Process	A13	http://docs.oasis-open.org/ebxml-msg/as4/200902/action	ZSO	Transmission System Operator	ZSO	Transmission System Operator	AOG	Definitive allocation report	MARSIT
Edigas 5.1 Market Balancing Process	A13	http://docs.oasis-open.org/ebxml-msg/as4/200902/action	ZSO	Transmission System Operator	ZSO	Transmission System Operator	16G	Reconciliation notification	MARSIT
Edigas 5.1. Market Balancing Process	A13	http://docs.oasis-open.org/ebxml-msg/as4/200902/action	ZSO	Transmission System Operator	ZSH	Registered Network User	16G	Reconciliation notification	MARSIT
Edigas 5.1. Market Balancing Process	A13	http://docs.oasis-open.org/ebxml-msg/as4/200902/action	ZSO	Transmission System Operator	ZSH	Registered Network User	ANO	Market situation	MARSIT
Edigas 5.1 Market Balancing Process	A13	http://docs.oasis-open.org/ebxml-msg/as4/200902/action	ZSO	Transmission System Operator	ZSO	Transmission System Operator	ANW	Non-daily metered forecast	MARSIT

EDIG@S 5.1 release 5 and 6



CAPACITY TRADING PROCESS

DATA EXCHANGE SOLUTIONS AND DOCUMENT TYPES

ENTSOG **Common Data Exchange Solution** recommend for capacity trading processes:

- Surrender capacity sold – document based
- All other activities – interactive
 - optionally – document based

The different common data exchange solutions shown in column I are defined in the Interoperability Network code Art 21.

"Recommendation" (see column K) is used in cases where communications are identified in the BRS document (business requirement specification) which are not explicitly part of the network code. As such the proposed solution is not enforceable but is to be considered as a "recommendation" to encourage harmonisation, and are to be negotiated bilaterally on a case by case basis.

"Optional" (see column K) is not mandatory but can be offered

"Date of Publication" (see column J) After a **lead time of 12 months** starting from the date of publication, the TSOs or parties "acting on behalf of TSOs" shall make the Common Data Exchange Solution available for use with their counter parties.

Derogations:

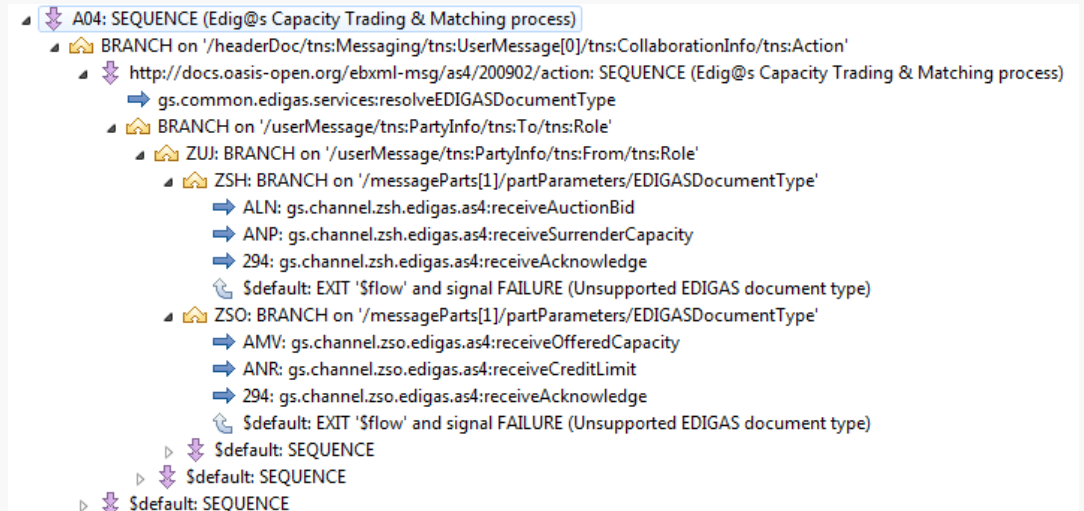
In the case of Member States which are not connected to the interconnected EU network and hold a derogation (re Art 49 of directive 2009/73/EC), the Common Data Exchange Solution should be made available not later than the time of the establishment of the connection with the interconnected EU network (see also Art1 (2) Network code Interoperability)

Process Area Value	BRS	Document Chapter	Document Line Number	Information Flow	From Party Role Value	To Party Role Value	Confidentiality Level	Common Data Exchange Solution	Date of Publication	Optional Data Exchange Solution
Capacity Trading Processes	CAP0554_160726_BRS_CAM+CMP_V19.docx	3.3.1.2	509	Network User Registration	Network User	Transmission System Operator	Private			Recommendation - Interactive
		3.3.1.3	515	Network User Registration to Auction Office	Network User	Auction Office	Private			Recommendation - Interactive
		3.3.1.4	522	Approved Network Users	Auction Office	Registered Network User	Private			Recommendation - Interactive
		3.3.1.5	531	Surrender Capacity Rights	Registered Network User	Auction Office	Private	Interactive		Document Based
		3.3.1.6	551	Offered Capacity	Auction Office	Registered Network User	Public	Interactive	1/11/2016	Document Based
		3.3.1.8	572	Capacity Bid	Registered Network User	Auction Office	Private	Interactive	1/11/2016	Document Based
		3.3.1.9	578	Allocated Capacity	Auction Office	Registered Network User	Private	Interactive	1/11/2016	Document Based
		3.3.1.11	590	Aggregated Auction Results	Auction Office	All	Public	Interactive	1/11/2016	Document Based
		3.3.1.12	601	Surrendered Capacity Sold	Transmission System Operator	Registered Network User	Private	Document Based	1/11/2016	Interactive
		3.3.1.14	614	Reverse Auction Bid	Registered Network User	Auction Office	Private	Interactive	1/11/2016	Document Based
		3.3.1.15	626	Allocate Reverse Auction Results	Auction Office	Registered Network User	Private	Interactive	1/11/2016	Document Based
		3.3.2	643	Secondary Market Sales	Registered Network User	Transmission System Operator	Private	Interactive	1/11/2016	Document Based
		3.3.2	651	Secondary Market Sales	Transmission System Operator	Registered Network User	Private	Interactive	1/11/2016	Document Based
		Nomination and Matching Processes	BAL0453_160622_BRS on nominations_V17.docx	3.3.3.3	282	Nomination Authorisation	Registered Network User	Transmission System Operator	Private	
3.4.1	338			Nomination	Registered Network User	(Initiating) Transmission System Operator	Private	Document Based	1/11/2016	Interactive
3.4.1	338			Nomination	Registered Network User	(Matching)Transmission System Operator	Private	Document Based	1/11/2016	Interactive
3.4.1	347			Forward single sided nomination	(Active) Transmission System Operator	(Passive) Transmission System Operator	Private	Document Based	1/11/2016	Interactive
3.4.1	354			Processed Quantities	(Initiating) Transmission System Operator	(Matching)Transmission System Operator	Private	Document Based	1/11/2016	Interactive
3.4.1	362			Matching Results	(Matching)Transmission System Operator	(Initiating) Transmission System Operator	Private	Document Based	1/11/2016	Interactive
3.4.1	367			Confirmation Notice	(Initiating) Transmission System Operator	Registered Network User	Private	Document Based	1/11/2016	Interactive
3.4.1	367			Confirmation Notice	(Matching)Transmission System Operator	Registered Network User	Private	Document Based	1/11/2016	Interactive
3.4.1	375			Interruption Notice	(Initiating) Transmission System Operator	Registered Network User	Private	Document Based	1/11/2016	Interactive
3.4.1	375			Interruption Notice	(Matching)Transmission System Operator	Registered Network User	Private	Document Based	1/11/2016	Interactive

CAPACITY TRADING PROCESS

EDIG@S IMPLEMENTATION IN GAZ-SYSTEM SYSTEMS

- **Capacity Trading Process** – TSOs / Shippers connected through AS4 data exchange with using edig@s documents
- **Edig@s document types** - GSA Platform supports edig@s data exchange via AS4:
 - ✓ **OFFCAP** – information about an offer to sell capacity (OFFERed CAPacity);
 - ✓ **AUCBID** – information about the willingness to buy a specific capacity on auction (AUCtion BID)
 - ✓ **AUCRES** – information about the status/result of auction (AUCtion RESults)
 - ✓ **SURCAP** – information about capacity surrender
 - ✓ **CRELIM** – information about available financial credibility
 - ✓ **ACKNOW** - acknowledgement message used universally across Edig@s



CAPACITY TRADING PROCESS

DATA EXCHANGE SOLUTIONS AND DOCUMENT TYPES

Edig@s-XML specifications for the capacity processes :

More than one message of the same structure is often envisaged:

- **OFFCAP/AMV** – request to create/modify/remove an offer to sell (auction). The messages directed by the **TSO to the auction platform**
- **OFFCAP/AMW** and **OFFCAP/AMX** – **notification of Network User** of the publication of capacity sell offer (auction), sent through the auction platform at the time of auction publication. **Information sent through the auction platform to Network Users** upon closing a round of ascending clock auction, when the auction has not been closed yet (information about next round). **Information sent through the auction platform to TSOs** at the time of creation, modification or removal of offer, depending of Edig@s version.
- **AUCBID/ALN** – submission of an offer to buy a specific capacity (bid), message sent **by Network User to the auction platform**
- **AUCRES/ANA** – auction results **sent by the auction platform to Network Users** who have taken part in the auction
- **AUCRES/ANB** – auction result. Sent **to Network Users by the auction platform** following auction closing (contains aggregated information concerning auction results).
- **AUCRES/ANT** – auction result. **Sent to TSOs by the auction platform** following auction closing (detailed information concerning auction results)
- **SURCAP/ANP** – capacity surrender request **sent to auction platform by Network User**
- **SURCAP/ANQ** – information about sold capacity from surrender request, **sent to Network User** only if any capacity from his surrender request has been sold; **message sent by TSO (TSO-back end system)**
- **CRELIM/ANR** – information about Network User's available financial credibility, **sent to auction platform by TSO.**

AS4 IN PROCESSES NOT COVERED BY EDIG@S

SHARING MEASUREMENT DATA WITH CUSTOMERS OF GAZ-SYSTEM

Measurement Data Request document:

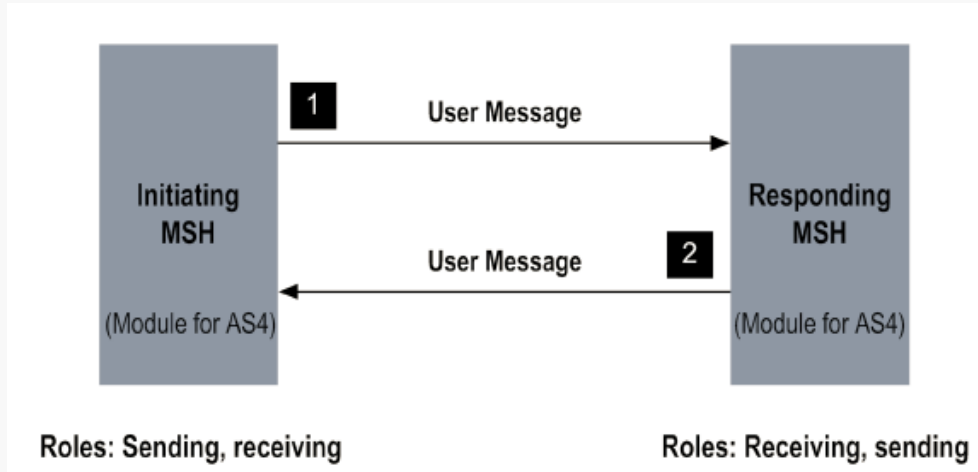
- archived data (including raw data from flow computers)
- alarm data
- operative aggregates
- billing aggregates

XML path	Required?	Data type	Description
measurementDataRequest/ddataType	Yes	xs:string, enum: [ARCH_COR, ARCH_SRC, ALRM_COR, ALRM_SRC, AKDG_COR_HOUR, AKDG_COR_ORP]	Returned data type: ARCH_COR – processes archived data ARCH_SRC – source archived data ALRM_COR – processed alarm data ALRM_SRC – source alarm data AKDG_COR_HOUR – billing aggregates data AKDG_COR_ORP – operative aggregates data
measurementDataRequest/deviceIds	No	Id list	Devices id list (CentID) Required when dataType = ARCH_COR or ARCH_SRC or ALRM_COR or ALRM_SRC
measurementDataRequest/deviceIds/deviceId[n]	Yes	xs:string	Device id (CentID)
measurementDataRequest/deviceSetIds	No	deviceSetId list	Systems id list (CentID) Required when dataType = AKDG_COR_HOUR or AKDG_COR_ORP
measurementDataRequest/deviceSetIds/deviceSetId[n]	Yes	xs:string	Device id (CentID)
measurementDataRequest/dateFrom	Yes	xs:dateTime	Date and time "from" the scope of data download
measurementDataRequest/dateTo	Yes	xs:dateTime	Date and time "to" the scope of data download
measurementDataRequest/ dataFields	No	dataField list	The list of data fields names to be returned in the inquiry result
measurementDataRequest/ dataFields/dataField[n]/name	Yes	xs:string	Data field name to be returned Names of available field will be transferred to GAZ-SYSTEM.

AS4 IN PROCESSES NOT COVERED BY EDIG@S

ADDITIONAL AS4 MESSAGE EXCHANGE PATTERNS (MEP)

Two-Way/Sync MEP

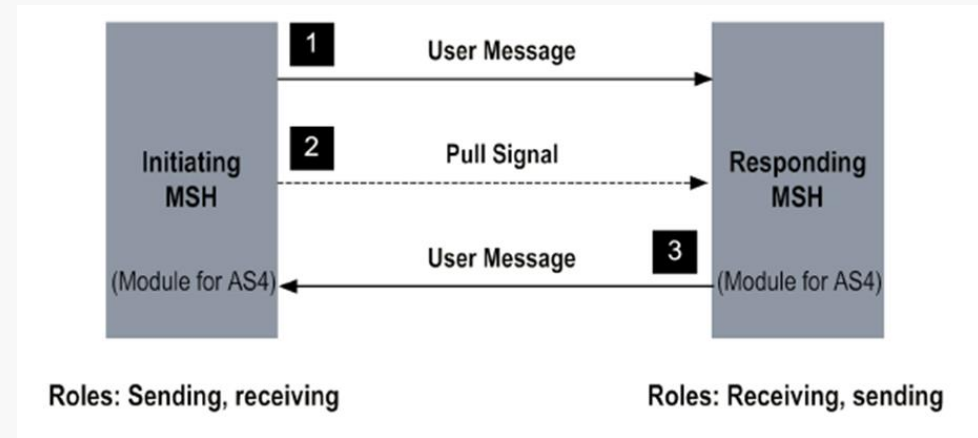


Synchronous –

recommended for requests with a small amount of data.

Initiating partner (Initiating MSH - 1) in a feedback message from the responding partner (Responding MSH - GAZ-SYSTEM - 2), receives a synchronous result of the submitted request (basic request-reply communication).

Two-Way/Push-Pull MEP



Asynchronous –

recommended for requests with a large amount of data.

Initiating partner (Initiating MSH - 1) sends a request to the responding partner (responding MSH - GAZ-SYSTEM) and receives only information about the request acceptance (response status HTTP). Then the initiating partner (Initiating MSH - 2) asks the responding partner (responding MSH – GAZ- SYSTEM) about the availability of the request result. If the request result is available, it is returned (only once) by the responding partner (responding MSH – GAZ-SYSTEM - 3), synchronously (in relation to the request ID).

THANK YOU





Lunch Break until 14:00



@Storengy

**Edig@s version 6 by Message and workflow design
working group**

Capacity Allocation Process

Capacity Allocation Process

Andreas Keil
GASCADE Gastransport GmbH



Capacity Allocation – General Background

- NC CAM (Regulation No. 984/2013 - Network Code on Capacity Allocation Mechanism....)
- Congestion Management Procedures Guidelines (Annex I to Regulation (EC) No 715/2009)
- Business Requirements Specification for the Capacity Allocation Mechanism (CAM) Network Code and the Congestion Management Procedures (CMP) Guidelines
- EASEE-gas role model gas

Capacity Allocation – Package Structure

Initialisation Process

- Credit Limits Document (CRELIM)
- Surrender Capacity Document (SURCAP)
- TSO Offered Capacity Document (OFFCAP)
- Market Offered Capacity Document (MAOCAP)

Auction

- Auction Bid Document (AUCBID)
- Auction Result Document (AUCRES)

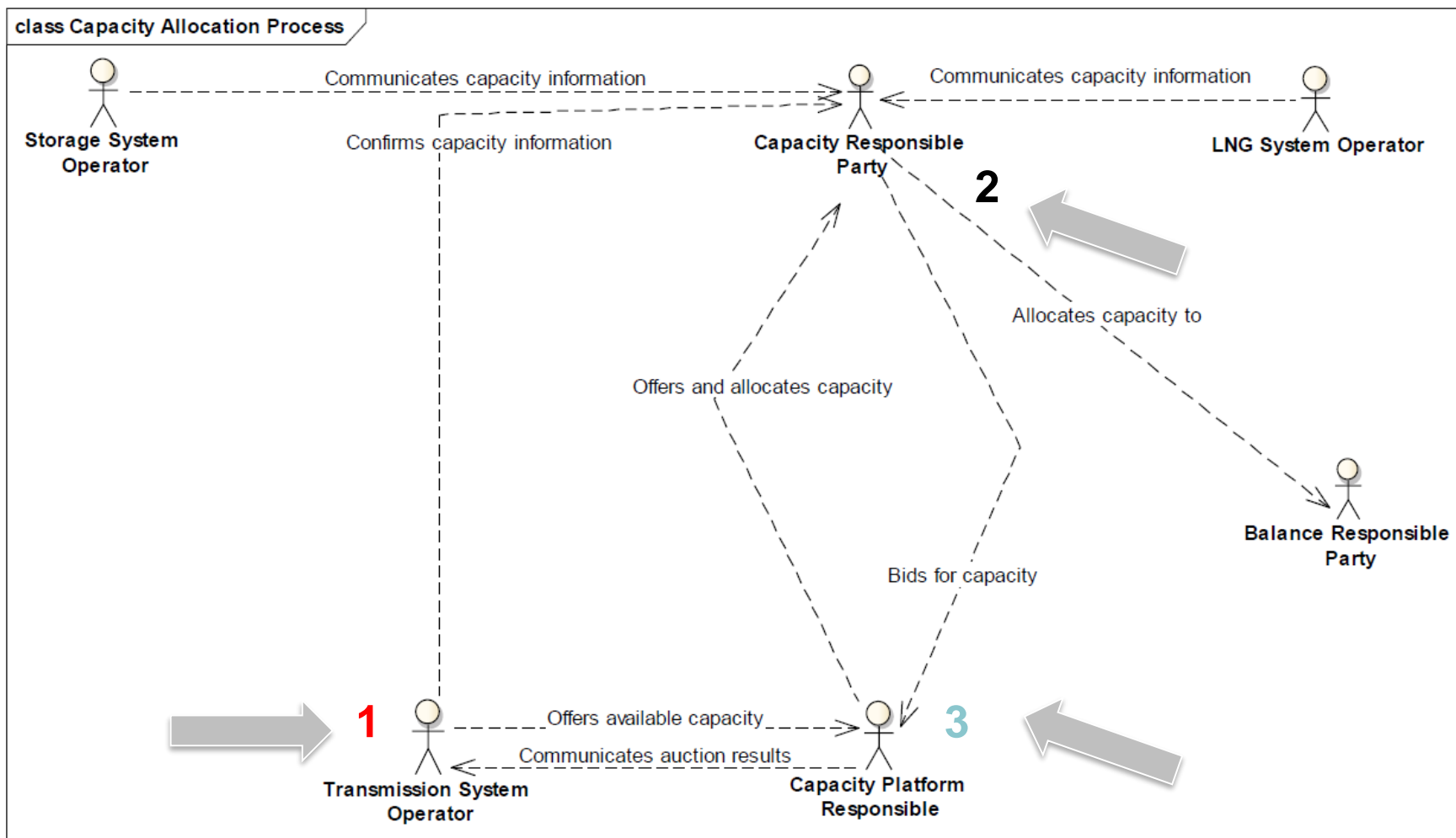
Reverse Auction

- Reverse Auction (REVAUC)

Capacity Information & Secondary Market

- Capacity Document (CAPDOC)
- Transfer Advice Document (TRAADV)

Involved Partys and Roles



Package Structure Edig@s 5: Capacity Allocation

- ④ CREDIT LIMIT DOCUMENT (CRELIM)
- ④ SURRENDER CAPACITY DOCUMENT (SURCAP)
- ④ TSO OFFERED CAPACITY DOCUMENT (OFFCAP)
- ④ MARKET OFFERED CAPACITY DOCUMENT (MAOCAP)
- ④ AUCTION BID DOCUMENT (AUCBID)
- ④ AUCTION RESULTS DOCUMENT (AUCRES)
- ④ REVERSE AUCTION REQUEST DOCUMENT (REVAUC)
- ④ CAPACITY DOCUMENT (CAPDOC)
- ④ TRANSFER ADVICE DOCUMENT (TRAADV)

Package Structure Edig@s 6: Capacity Allocation

- ④ CREDIT LIMIT DOCUMENT (CRELIM)
- ④ SURRENDER CAPACITY DOCUMENT (SURCAP)
- ④ TSO OFFERED CAPACITY DOCUMENT (OFFCAP)
- ④ MARKET OFFERED CAPACITY DOCUMENT (MAOCAP)

- ④ **AUCTION DOCUMENT**
 - ④ **AUCTION BID DOCUMENT (AUCBID)**
 - ④ **AUCTION RESULTS DOCUMENT (AUCRES)**

- ④ REVERSE AUCTION REQUEST DOCUMENT (REVAUC)
- ④ CAPACITY DOCUMENT (CAPDOC)
- ④ TRANSFER ADVICE DOCUMENT (TRAADV)

Main changes – Wording

Edig@s 5

- ➔ **Network User**
- ➔ **Transmission System Operator**
- ➔ **Auction Office**
- ➔ **Capacity Trading Process**

Edig@s 6

- ➔ **Capacity Responsible Party**
- ➔ **System Operator**
- ➔ **Capacity Platform Responsible**
- ➔ **Capacity Allocation Process
(Role Model Gas)**

Credit Limit Document (CRELIM)

Affected Roles		
System Operator	Capacity Platform Responsible	Capacity Responsible Party
Use Cases		
1a	System operator sends CRP's Credit Limit to Platform.	
1b	System operator sends used Limit to Platform.	
2	Platform sends used limits to System Operator.	

Surrender Capacity Document (SURCAP)

Affected Roles		
System Operator	Capacity Platform Responsible	Capacity Responsible Party
Use Cases		
1.	A Capacity Responsible Party submits the System Operator and the Platform surrender capacity for resale.	
2.	Transfer of the surrender request for validation (Platform to System Operator).	
3.	Submission request results (sale results, System Operator to CRP).	



TSO Offered Capacity Document (OFFCAP)

Affected Roles		
System Operator	Capacity Platform Responsible	Capacity Responsible Party
Use Cases		
1	System operator sends offered capacity (and more detailed information) for an auction to Platform.	
2	Platform sends capacity (...etc.) to be auctioned to System Operator.	



Market Offered Capacity Document (MAOCAP)

Affected Roles

System Operator	Capacity Platform Responsible	Capacity Responsible Party

Use Cases

1. Capacity Platform Responsible offered capacity for an auction (Capacity Platform Responsible to Capacity Responsible Party and System Operator).

Auction Bid Document (AUCBID)

Affected Roles

System Operator	Capacity Platform Responsible	Capacity Responsible Party

Use Cases

1. Auction bid from Capacity Responsible Party to the Capacity Platform Responsible for an auction product.

Auction Result Document (AUCRES)

Affected Roles

System Operator	Capacity Platform Responsible	Capacity Responsible Party

Use Cases

1. Capacity Platform Responsible sends the allocated capacity for the Capacity Responsible Party (CPR to CRP).
2. Capacity Platform Responsible sends aggregated auction results to the Capacity Responsible Party (CPR to CRP).
3. Capacity Platform Responsible sends the detailed auction results to the System Operator (CPR to System Operator).

Reverse Auction (REVAUC)

Affected Roles

System Operator	Capacity Platform Responsible	Capacity Responsible Party

Use Cases

1. The System Operator sends a reverse auction request to the platform (using the REVAUC Request Document).
2. Platform transmit the information through a REVAUC Specification Document to the parties (CRP).



Capacity Document (CAPDOC)

Affected Roles		
System Operator	Capacity Platform Responsible	Capacity Responsible Party
Use Cases		
1.	Information of changed capacity (System Operator to CPR and/ or adjacent System Operator).	
2.	Information of total available capacity (System Operator to CPR and/or adjacent System Operator).	

Transfer Advice Document (TRAADV)

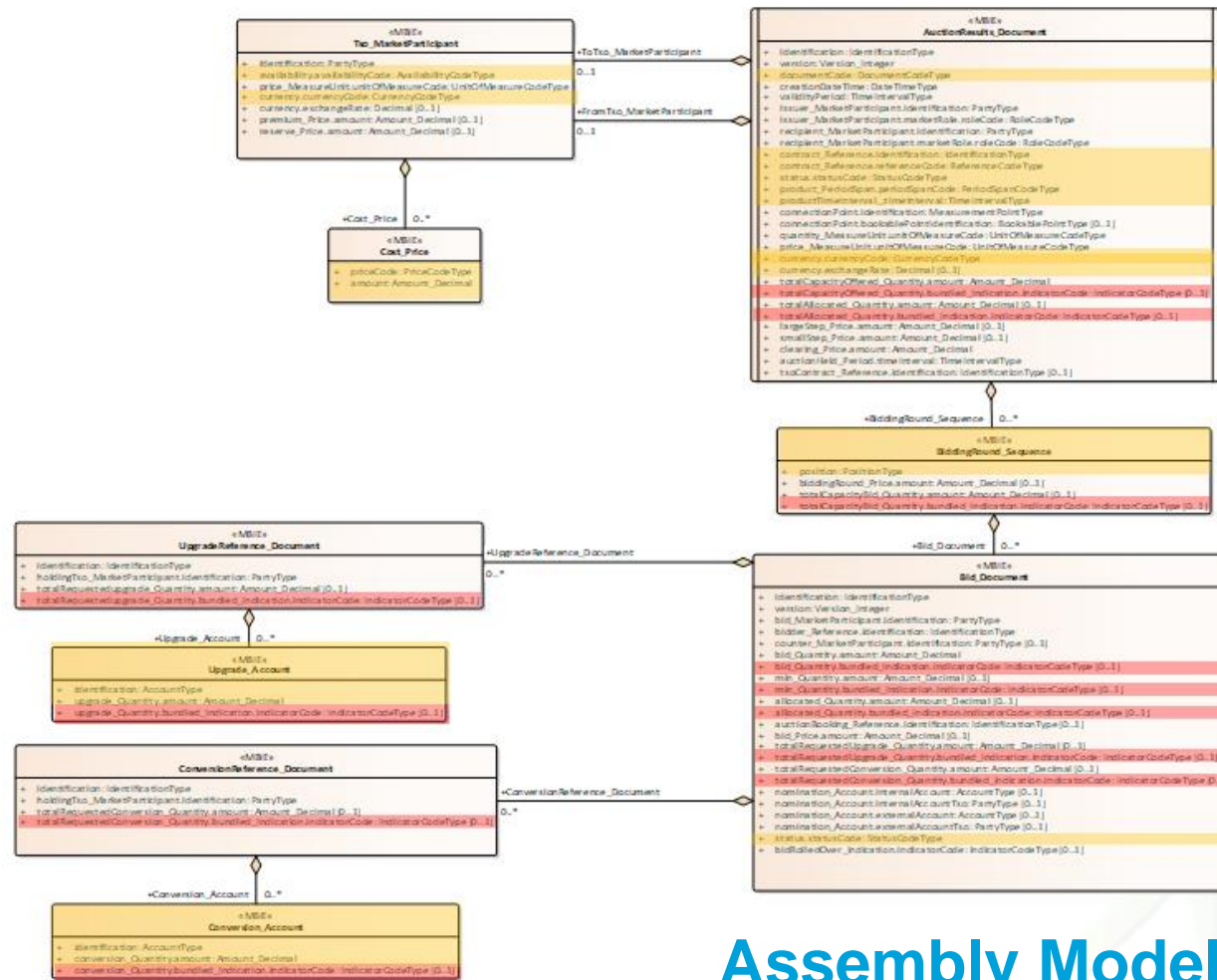
Affected Roles

System Operator	Capacity Platform Responsible	Capacity Responsible Party

Use Cases

- Both CRPs (Holder and Receiver) informs the System Operator of the transfer of capacity rights. In case the information is verified (account exists, codes valid, capacity available) and matched (deal-id, originator of the deal,), the System Operator sends a confirmation to both parties.
Confirmation and Rejection will be submitted with ACKNOW.

AUCRES Edig@s Version 6

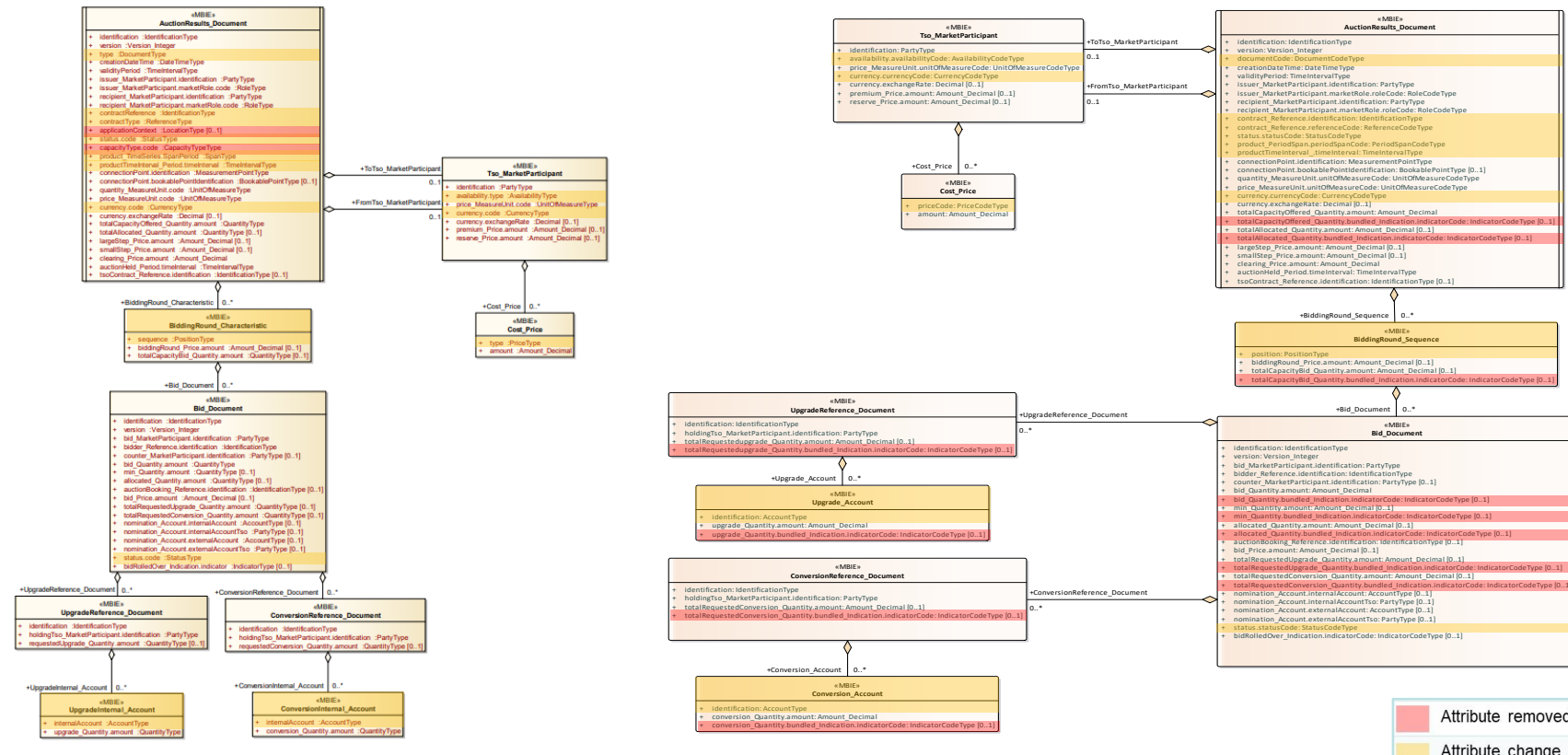


Assembly Model View

Capacity Allocation – AUCRES

Version 5

Version 6



Changes AUCRES 6

Attribute changes in version 6

➔ totalAllocated_Quantity.bundled_Indication	New
➔ totalCapacityOffered_Quantity.bundled_Indication	New
➔ totalCapacityBid_Quantity.bundled_Indication	New
➔ totalRequestedUpgrade_Quantity.bundled_indication	New
➔ upgrade_Quantity.bundled_indication	New
➔ totalRequestedConversion_Quantity.bundled_indication	New
➔ conversion_Quantity.bundled_indication	New
➔ allocated_Quantity.bundled_indication	New
➔ bid_Quantity.bundled_indication	New
➔ Min_Quantity.bundled_indication	New
➔ capacityType	Removed
➔ applicationContext	Removed

Changes AUCRES 6

Attribute changes in version 6

- | | |
|-------------------------------------|---------|
| ➤ Type (DocumentType) | Changed |
| ➤ documentCode | |
| ➤ contractReference | Changed |
| ➤ contract_Reference.Identification | |
| ➤ contractType | Changed |
| ➤ contract_Reference.referenceCode | |
| ➤ status.code | Changed |
| ➤ status.statuscode | |
| ➤ product_TimeSeries | Changed |
| ➤ product_PeriodSpan | |
| ➤ ProductTimeInterval_Period | Changed |
| ➤ productTimeInterval_timeInterval | |

Changes AUCRES 6

Attribute changes in version 6

- | | |
|---------------------------------|---------|
| ➤ currency.code | Changed |
| ➤ currency.currencyCode | |
| ➤ availability.type | Changed |
| ➤ availability.availabilityCode | |
| ➤ type | Changed |
| ➤ priceCode | |
| ➤ biddingRound_Characteristics | Changed |
| ➤ biddingRound_Sequence | |
| ➤ sequence | Changed |
| ➤ position | |
| ➤ status.code | Changed |
| ➤ status.statusCode | |

Changes AUCRES 6

Attribute changes in version 6

- ConversionInternal_Account Changed
 - Conversion_Account
- internalAccount Changed
 - Identification
- UpgradeInternal_Account Changed
 - Upgrade_Account





Troll A, Equinor by Oyvind Hagen

Thank you for your attention

For more information:

www.easee-gas.eu





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**Edig@s version 6 by Message and workflow design
working group**

Nomination and Matching

Nomination and Matching

Jarle Rønnevik

Equinor ASA

Chairman of Message and Workflow Design working group



Nomination and matching divided into two Message Implementation Guidelines.

1. BRP nomination and matching document:

- Nomination authorisation document
 - Used for authorising single sided nominations.
- Nomination document
 - Used to nominate transport/supply to System Operators (TSO,SSO, LSO) or trades to Area Coordinators.
 - Different types to make it explicit no need for dummy data:
 - Connection point (“01G” in documentCode)
 - VTP OTC (“02G” in documentCode)
 - VTP Exchange (“03G” in documentCode)
 - Non matching connection points (“04G” in documentCode)
- Nomination response document
 - Used to inform about the confirmed quantity (“08G” in documentCode).
 - Used to provide information about a interruption (“AND” in documentCode).

Nomination and matching divided into two Message Implementation Guidelines.

2. TSO nomination and matching document:

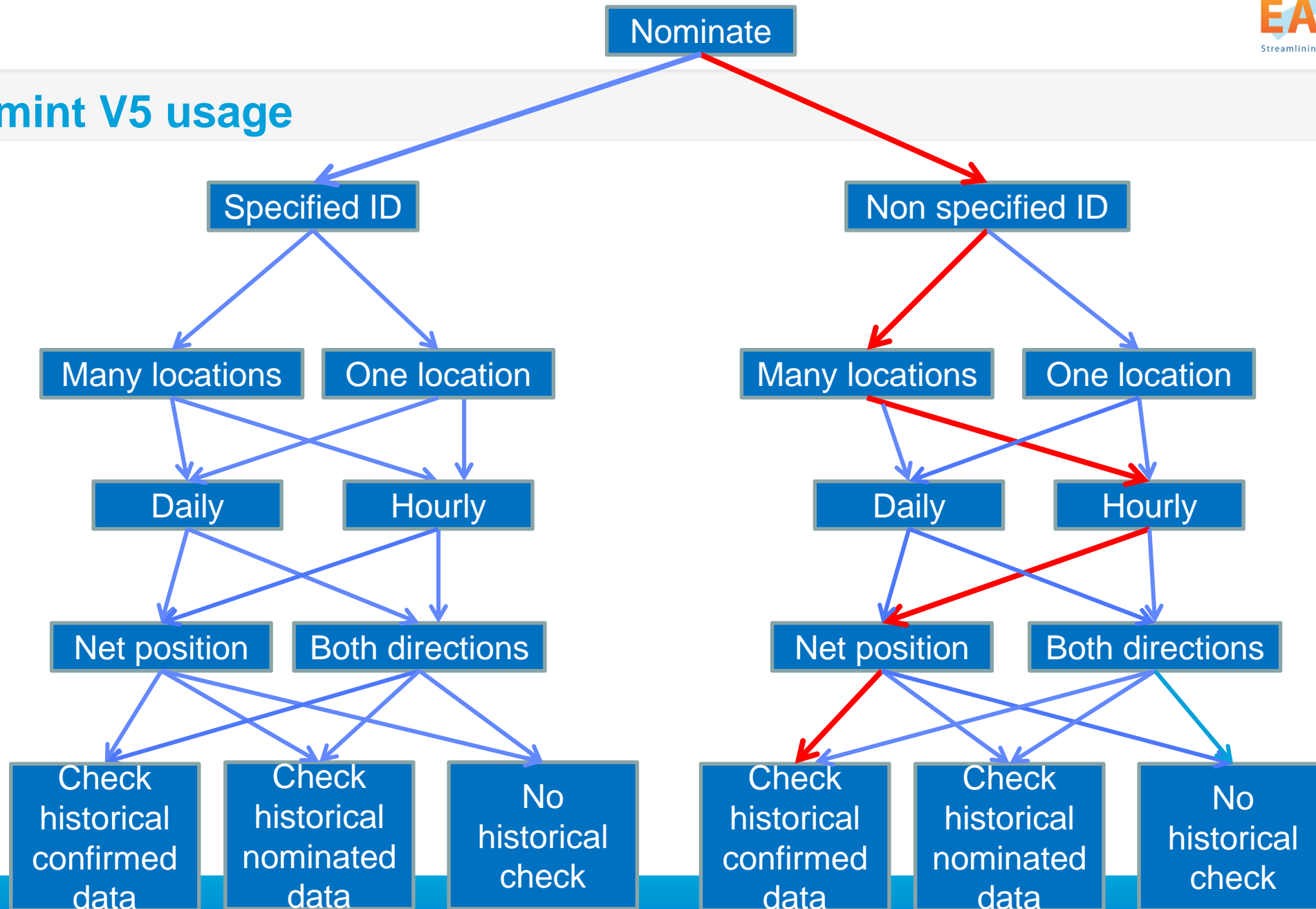
- Delivery order (DELORD)
 - Used for matching flows between two system operators (“26G” DocumentCode)
 - Used to transmit single sided nominations (“ANC” DocumentCode)
- Delivery response (DELRES)
 - Used for confirming (or not) the flows sent in the DELORD (“27G” DocumentCode)

Nomination and Matching

Reasons for carrying out the changes:

- Attributes removed because they are misused or other possibilities are available.
- Attributes are changed to make them more explicit.
- Datatypes are changed to harmonise
- Structure changed to support decisions made based on analyses, consultation and to further harmonisation.

Nomint V5 usage

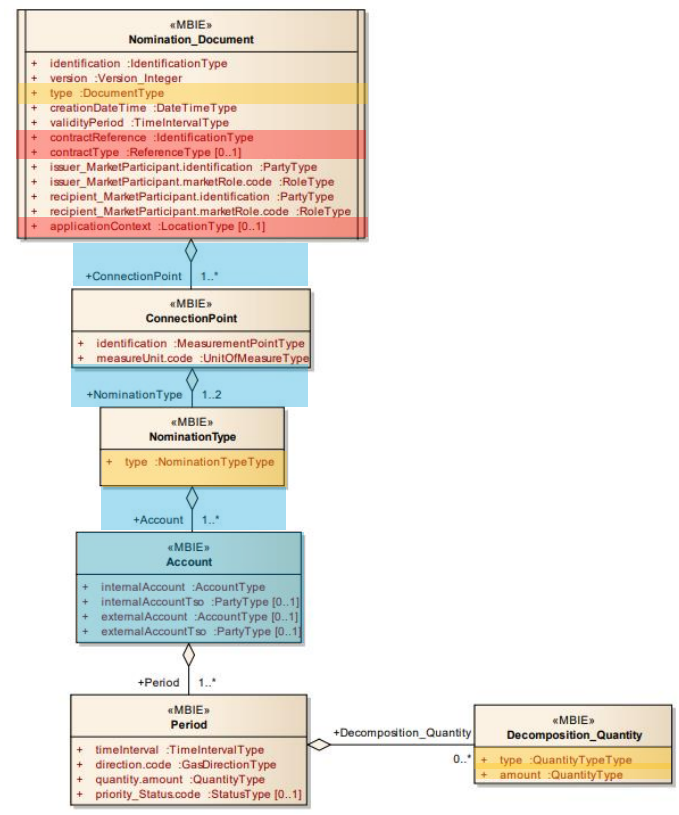


- Attribute removed
- Attribute change
- Structural change

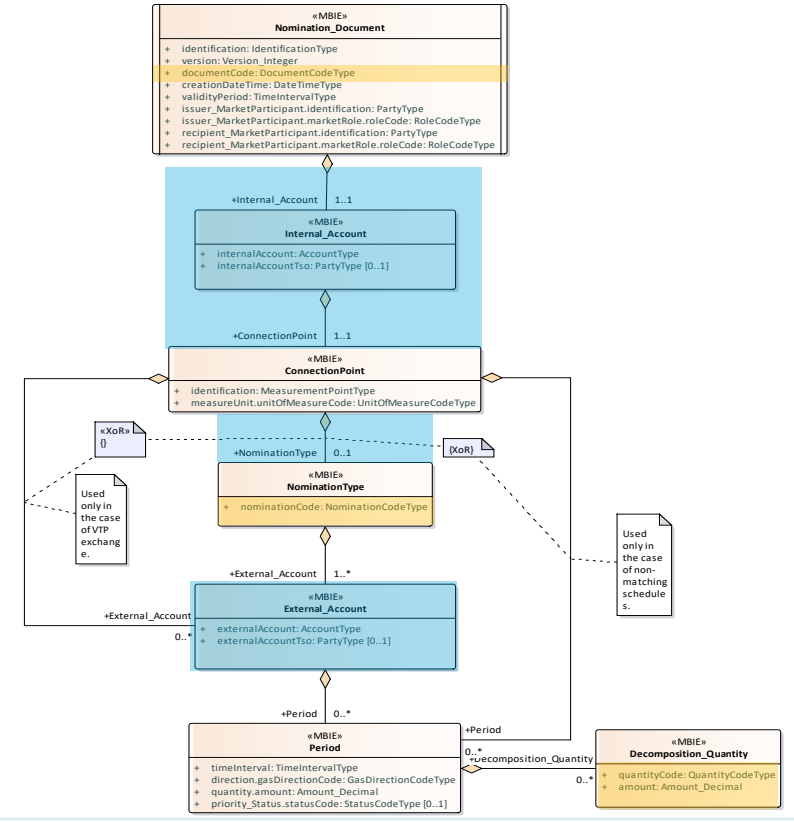
- Business Area**
- 01 Capacity Allocation
 - 02 Gas Trading
 - 03 Nomination & Matching
 - 04 Balancing & Settlement
 - 05 Remit & Transparency
 - 06 General

Nomination & Matching – NOMINT

Version 5



Version 6



Nomination (NOMINT)

Attribute naming convention changed to make it more harmonised.

Attribute changes:

- | | |
|-------------------------------|---------|
| ➔ contractReference | removed |
| ➔ contractType | removed |
| ➔ applicationContext | removed |
| ➔ Datatype DocumentType | changed |
| ➔ DocumentCodeType | |
| ➔ Datatype NominationTypeType | changed |
| ➔ nominationCodeType | |

Nomination (NOMINT)

Attribute changes:

- QuantityType changed
 - Amount_Decimal

- Datatype QuantityTypeType changed
 - QuantityCodeType

Structural changes:

- Message changed to only allow one connection point per message.

- Account class split in two classes internal and external to support only one internal account per message.

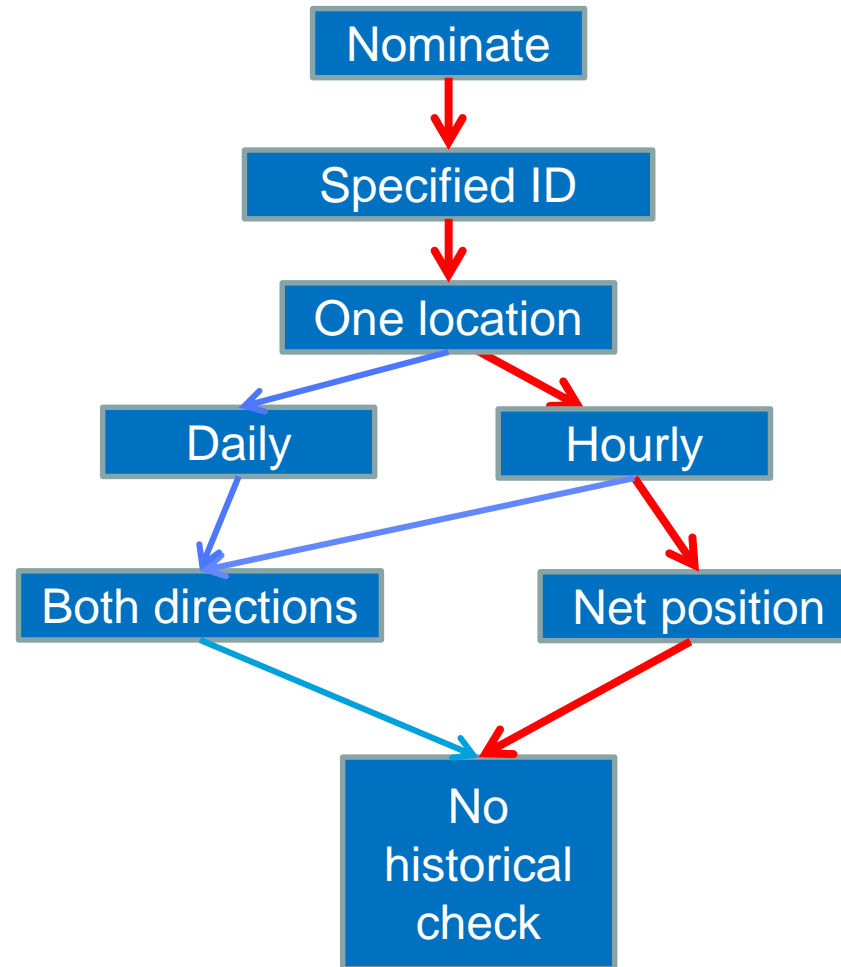
Nomination (NOMINT)

Structural changes:

- Introduced several nomination types (only one allowed per nomination):
 - Connection point (documentCode “01G”):
 - To be used where there is matching between two System Operators.
 - VTP OTC (documentCode “02G”)
 - To nominate to VTP, no matching System Operator.
 - VTP exchange (documentCode “03G”)
 - Nomination from the Clearing House to the Area Coordinator
 - Non matching (documentCode “04G”)
 - Used for connection points where no matching exists such as end user points.

NOMINT V6 usage

Target:





Troll A, Equinor by Oyvind Hagen

Thank you for your attention

For more information:

www.easee-gas.eu





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working group**

Gas Trading Document

Edig@s version 6

Olivier Termont

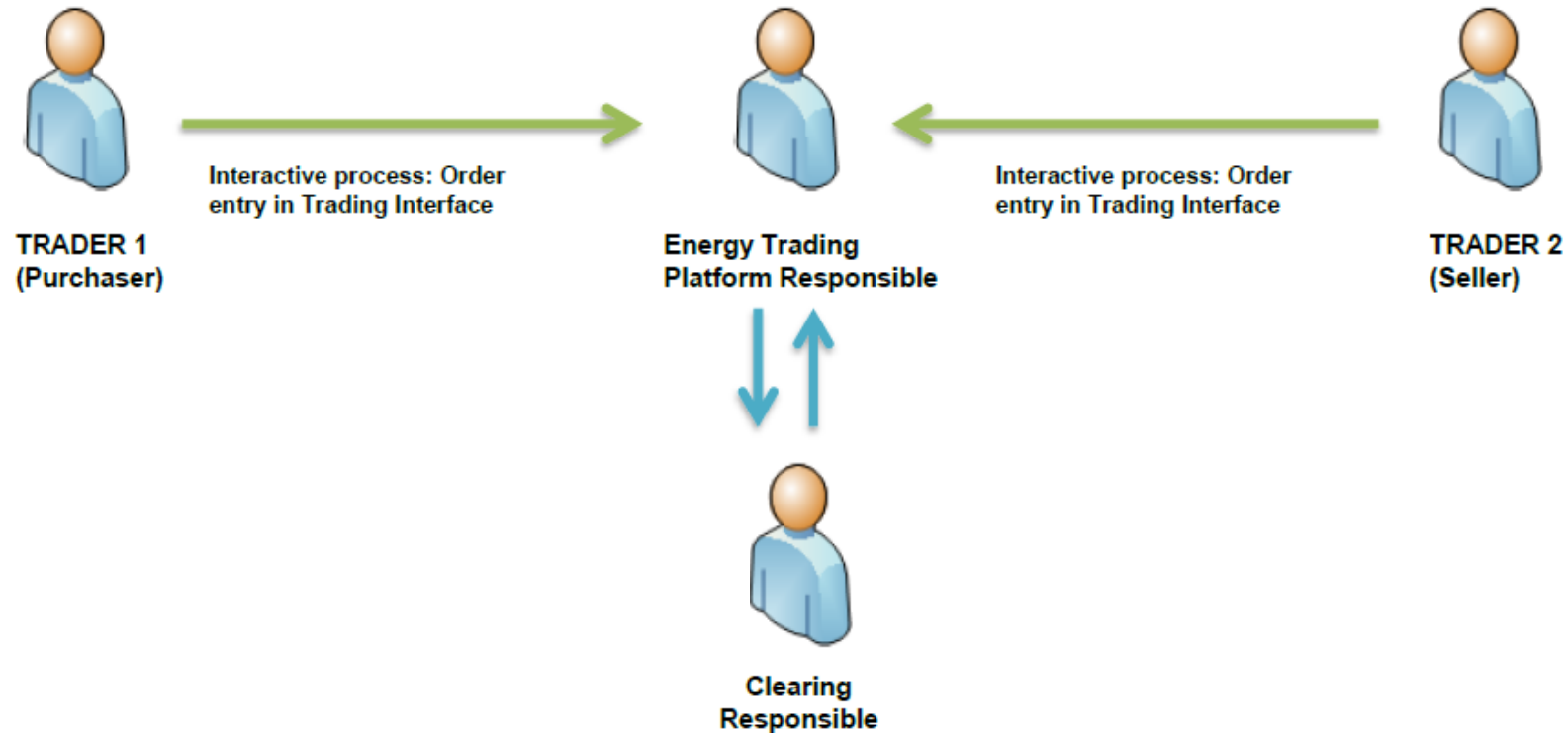
Eni Spa

Member of Message and Workflow Design working group



Exchange Gas Trading

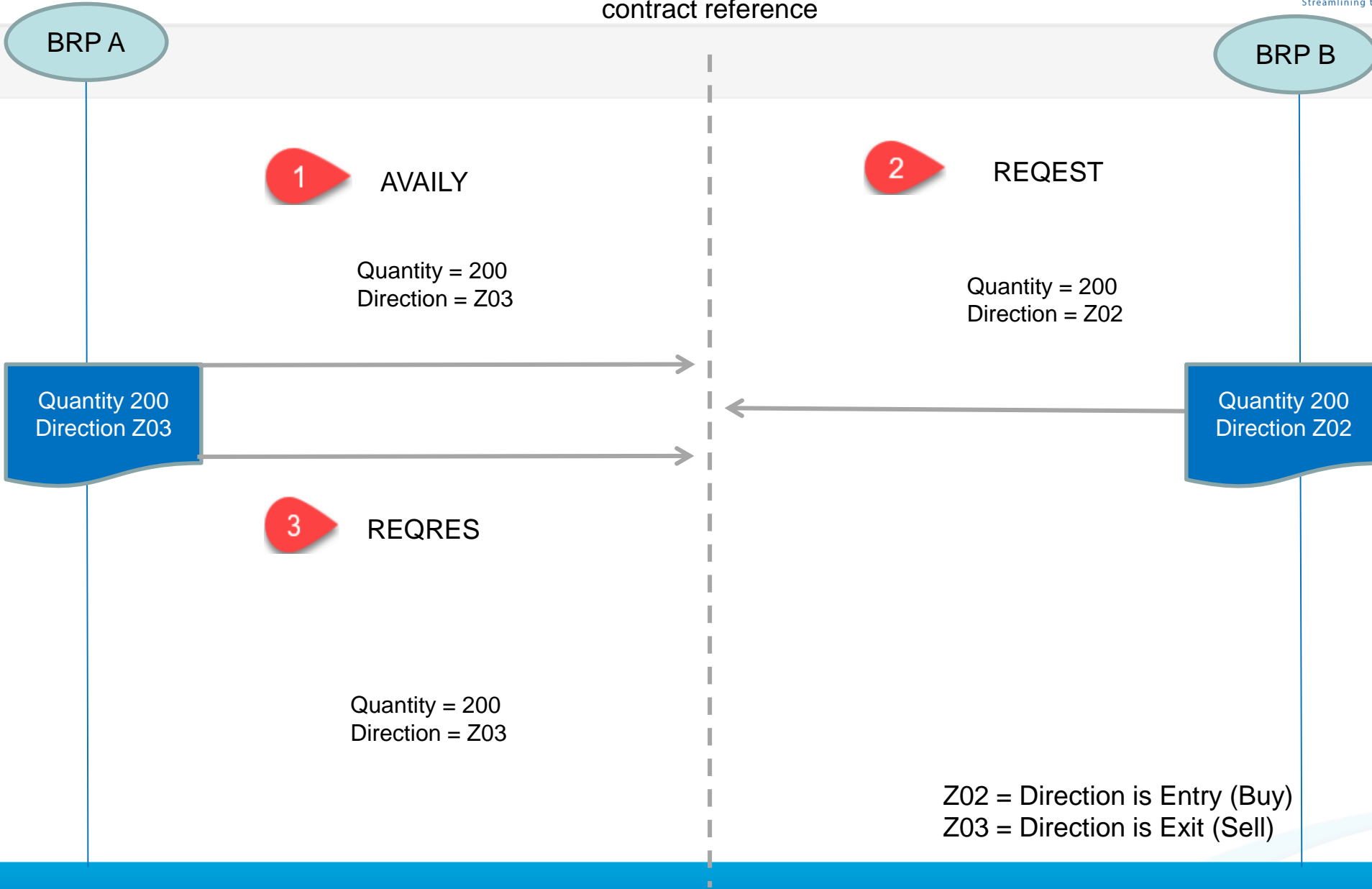
No harmonised messaging between Traders – Interactive Communication to the Energy Trading Platform



OTC Gas Trading



Messages should contain the contract reference



Z02 = Direction is Entry (Buy)
Z03 = Direction is Exit (Sell)

Gas Trading OTC

BRP sends AVAILY to his counterparty:

- Availability:
 - Message is sent to inform the bilateral counter party of the gas available
 - Content of the message
 - Quantity of Gas available to be sold to a counterparty (BRP's) from the gas owner to gas purchaser

BRP's exchange REQUEST/REQRES messages

- Buyer sends his Request to the seller
- Seller sends Request Response to the buyer for confirmation
- Any differences should be taken into consideration before the BRP's send their NOMINT to the TSO

Gas Trading – Message Overview

Message Description

OFFERS: Information is sent from Gas Owner to Gas Purchaser and vice-versa

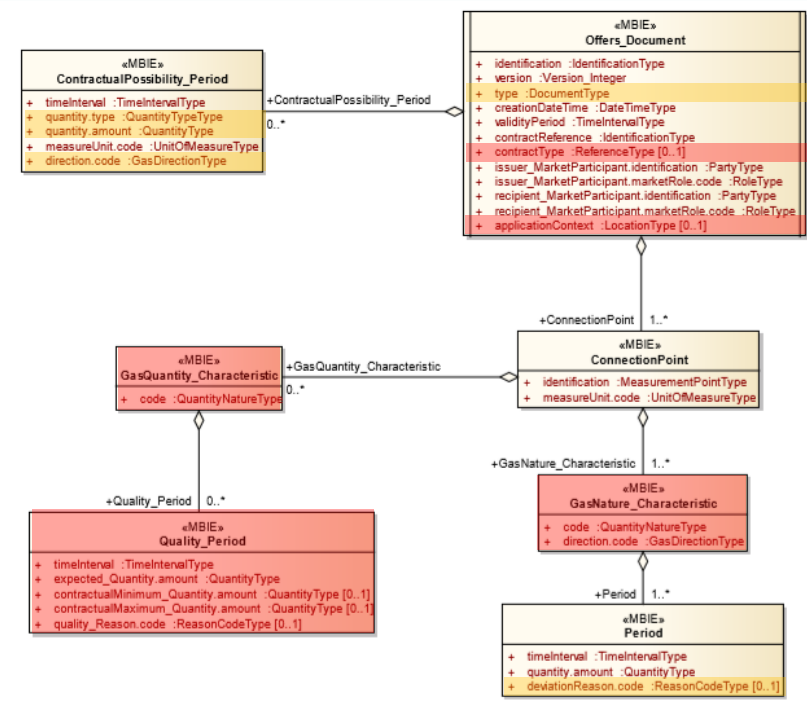
1. AVAILY Gas Owner informs of the available gas quantity
2. REQUEST Gas purchase or sale notice document
3. REQRES Gas purchase or sale confirmation of the REQUEST

Attribute removed
Attribute change
Structural change

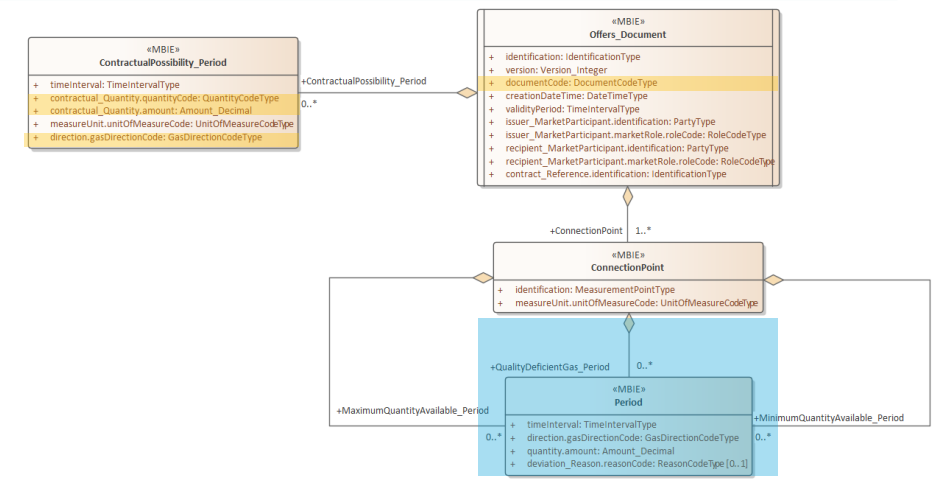
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Gas Trading – OFFERS

Version 5



Version 6



Gas Trading – OFFERS

Attribute Changes	Type	Change
type (DocumentType)	Changed	documentCode (DocumentCodeType)
contractReference	Changed	contract_Reference.Identification
contractType	Removed	
applicationContext	Removed	
quantity.type	Changed	contractual_Quantity.quantityCode
quantity.amount	Changed	contractual_Quantity.amount
direction.code	Changed	direction_gasDirectionCode
code	Changed	quantityNatureCode
GasNature_Characteristics	Removed	
GasQuantity_Characteristics	Removed	
deviationReason.code	Changed	deviation_Reason.reasonCode

Structural Changes

GasNature and GasQuantity removed, and the QualityPeriod quantities (Maximum, Minimum, QualityDeficiency) are replaced by separate connections between Period and ConnectionPoint.

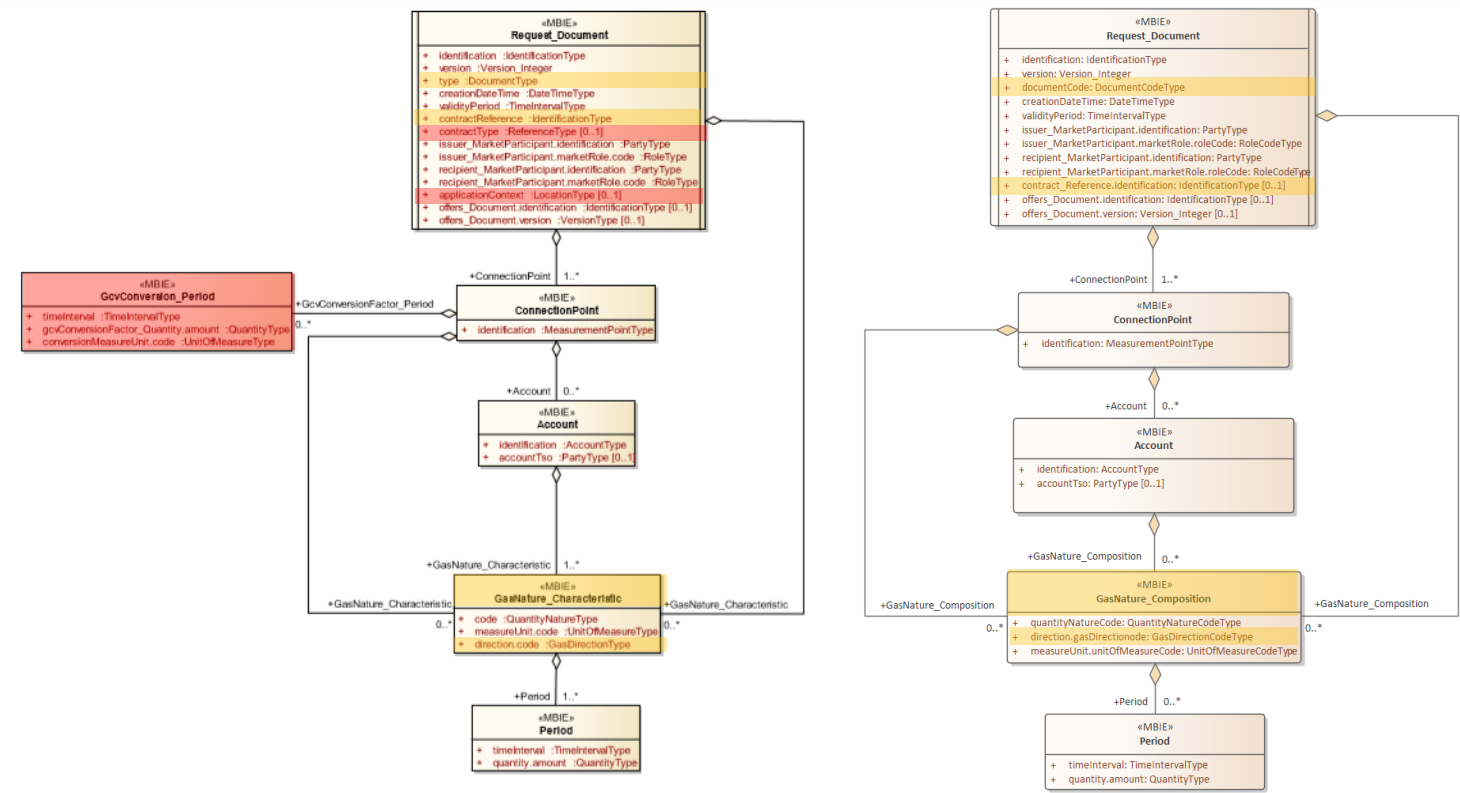
Attribute removed
Attribute change
Structural change

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Gas Trading – REQUEST

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Gas Trading – REQUEST

Attribute Changes	Type	Change
type (DocumentType)	Changed	documentCode (DocumentCodeType)
contractReference	Changed	contract_Reference.Identification
contractType	Removed	
applicationContext	Removed	
direction.code	Changed	direction.gasDirectionCode
GCV_ConversionPeriod	Removed	
GasNature_Characteristics	Changed	GasNature_Composition

Structural Changes

<None>

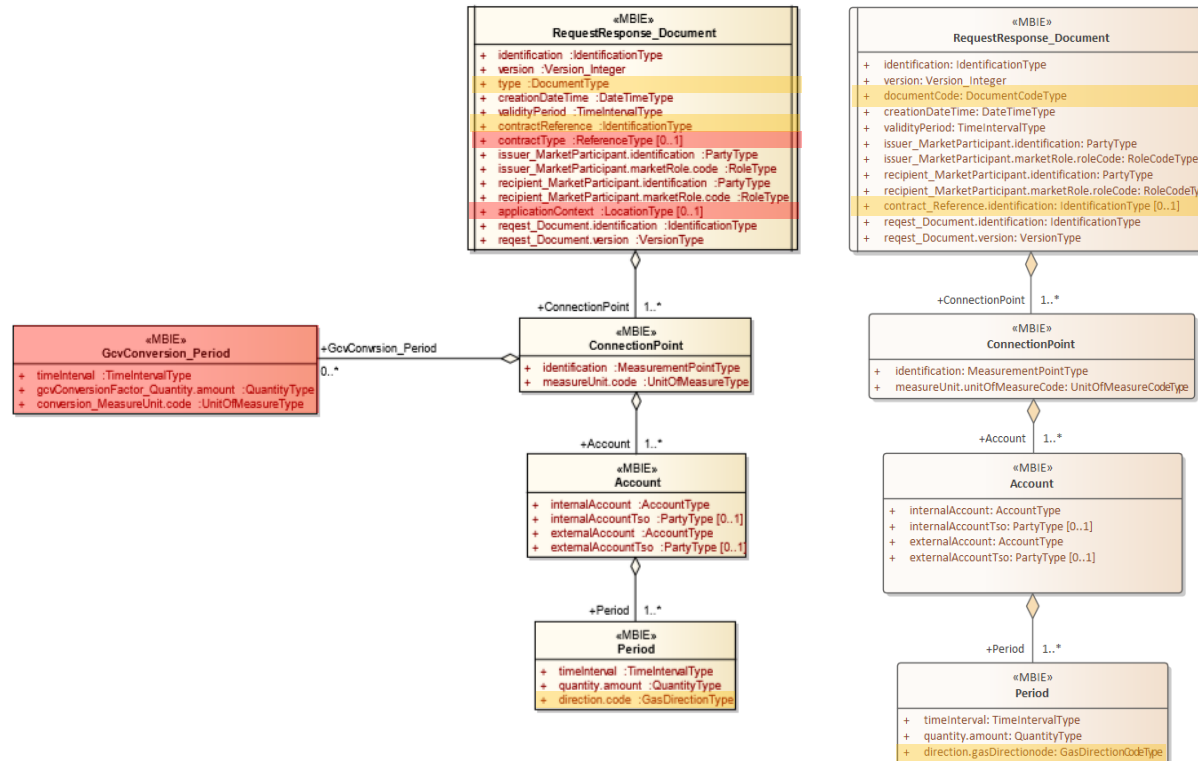
Attribute removed
Attribute change
Structural change

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Gas Trading – REQRES

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Gas Trading– REQRES

Attribute Changes	Type	Change
type (DocumentType)	Changed	documentCode (DocumentCodeType)
contractReference	Changed	contract_Reference.Identification
contractType	Removed	
applicationContext	Removed	
direction.code	Changed	direction.gasDirectionCode
GCV_ConversionPeriod	Removed	

Structural Changes

<None>



Troll A, Equinor by Oyvind Hagen

Thank you for your attention

For more information:

www.easee-gas.eu





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**Edig@s version 6 by Message and workflow design
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Balancing and Settlement

Balancing and Settlement process

Svetlana Pozdysheva
Engie SA



Why change

Balancing process described in Edig@s 5 is out-of-date regarding current market situation and NC BAL obligations :

- ➔ Locally managed messages (i.e. PRODOC/PROCON)
- ➔ TSO specific balancing processes (i.e. BPL for GTS)
- ➔ Difficulties to respect NC BAL, article 32 & 36 on information provision

CHAPTER VIII
INFORMATION PROVISION
Article 32
Information obligations of transmission system operators towards the network users

The information provided to network users by the transmission system operator shall refer to:

- (1) the overall status of the transmission network in accordance with point 3.4(5) of Annex 1 to Regulation (EC) No 715/2009;
- (2) the transmission system operator's balancing actions referred to in Chapter III;
- (3) the network user's inputs and off-takes for the gas day referred to in Articles 33 to 42.

Article 36
Non daily metered off-takes

1. Where the information model base case is applied:
 - (a) on gas day D-1, the transmission system operator shall provide network users with a forecast of their non daily metered off-takes for gas day D no later than 12:00 UTC (winter time) or 11:00 UTC (daylight saving);
 - (b) on gas day D, the transmission system operator shall provide network users with a minimum of two updates of the forecast of their non daily metered off-takes.
2. The first update shall be provided no later than 13:00 UTC (winter time) or 12:00 UTC (daylight saving).
3. The time of the second update provision shall be defined upon approval by the national regulatory authority and published by the transmission system operator. This shall take into consideration the following:
 - (a) access to short term standardised products on a trading platform;
 - (b) accuracy of the forecast of a network users non daily off-takes as compared to the time of its provision;

- (c) time when the re-nomination period ends, as provided in Article 15(1);
- (d) time of the first update of the forecast for a network user's non daily metered off-takes.
4. Where the information model variant 1 is applied, on gas day D, the transmission system operator shall provide network users with a minimum of two updates of their apportionment of measured flows for at least the aggregate non daily metered off-takes as referred to in Article 35.
5. Where the information model variant 2 is applied, on gas day D-1, the transmission system operator shall provide network users with a forecast of their non daily metered off-takes for gas day D as referred to in paragraph 1(a).

Scope Review

Balancing

The Balancing process usually starts the day before the delivery and ends the day after. It may last as long as the Balance Responsible Party may adjust his daily position.

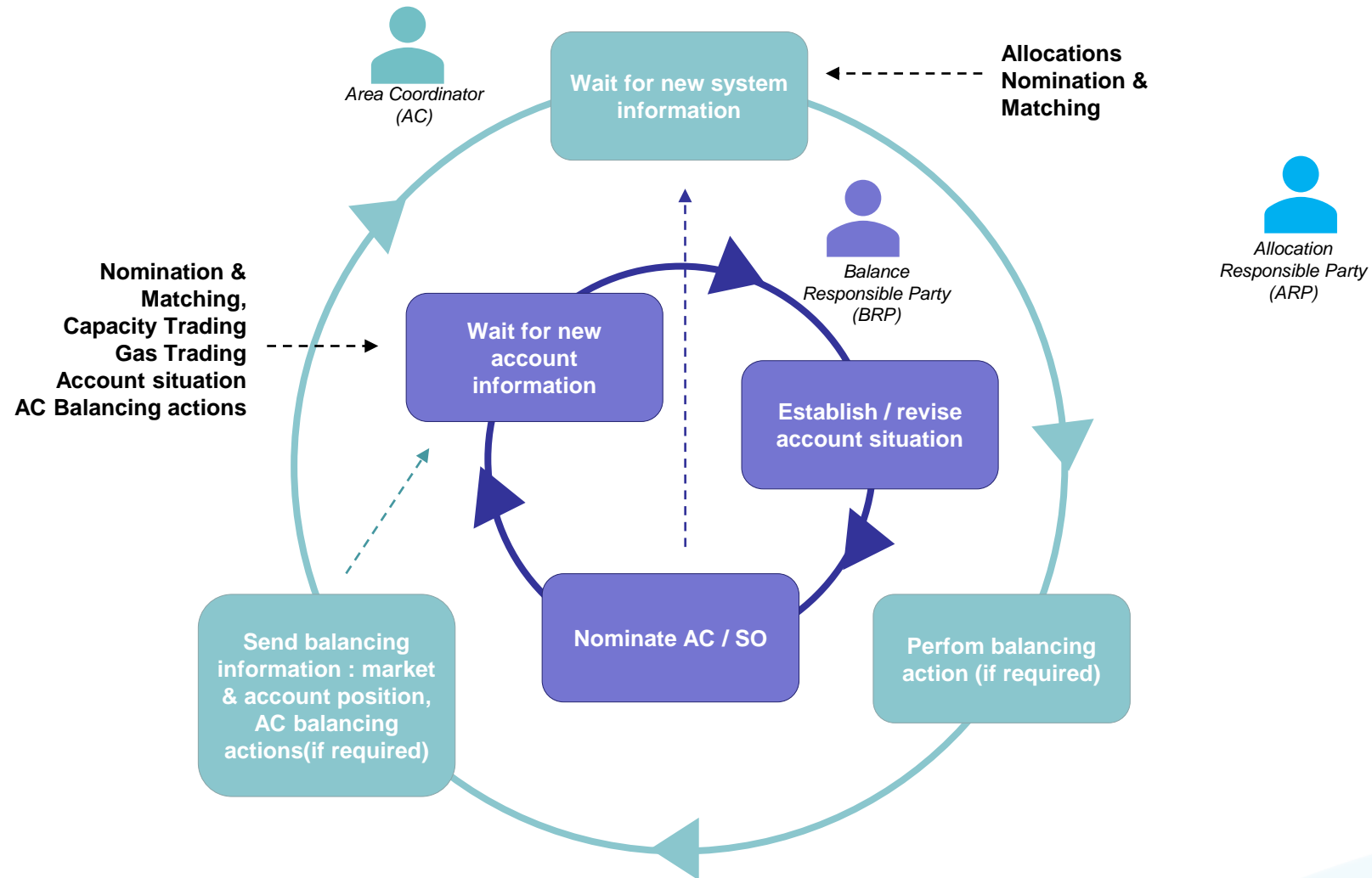


Settlement

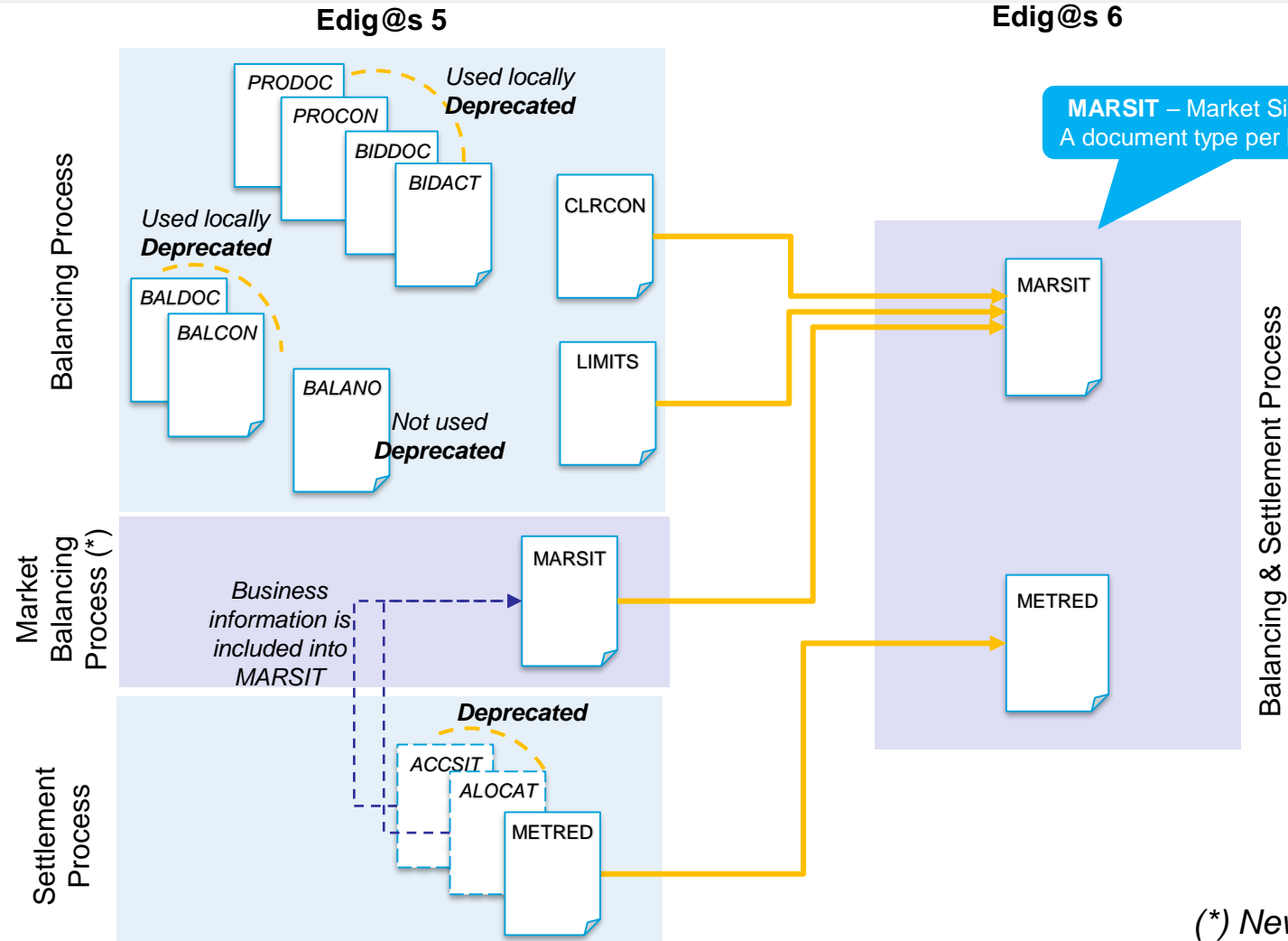
The Settlement process takes over immediately after the end of the balancing process and generally terminates once all disagreements have been resolved or after a finite time that is determined by local market rules.



Balancing overview



Resulting Documents



(* New in version 5

Document type per Business process

Balancing

- AC -> BRP
MARSIT (ANW)
Non-daily Metered Forecasts
- AC -> BRP
MARSIT (AOB)
Market Area Position
- AC -> BRP
MARSIT (94G)
Account Position
- AC -> BRP
MARSIT (ANY)
WD Balancing Action Forecast
- AC -> BRP
MARSIT (ANZ)
WD Balancing Action Results
- AC -> TSO
MARSIT (AOG)
Operational Balancing Account situation

Settlement

- AC -> BRP
MARSIT (AOA)
EOD Imbalance Settlement
- RR -> BRP
MARSIT (16G)
Reconciliation Notification

Allocation*

- AR -> BRP, AC, TSO, DSO
MARSIT (95G)
Provisional Allocation Report
- AR -> BRP, AC, TSO, DSO
MARSIT (96G)
Definitive Allocation Report

Metering*

- AR, TSO -> BRP, AC, TSO, EU
METRED (87G)
Validated Measured Data

() Allocation is a subprocess used both by Balancing (in particular, Provisional Allocation Report) and Settlement.
Metering is a sub-processed used by Allocation.*

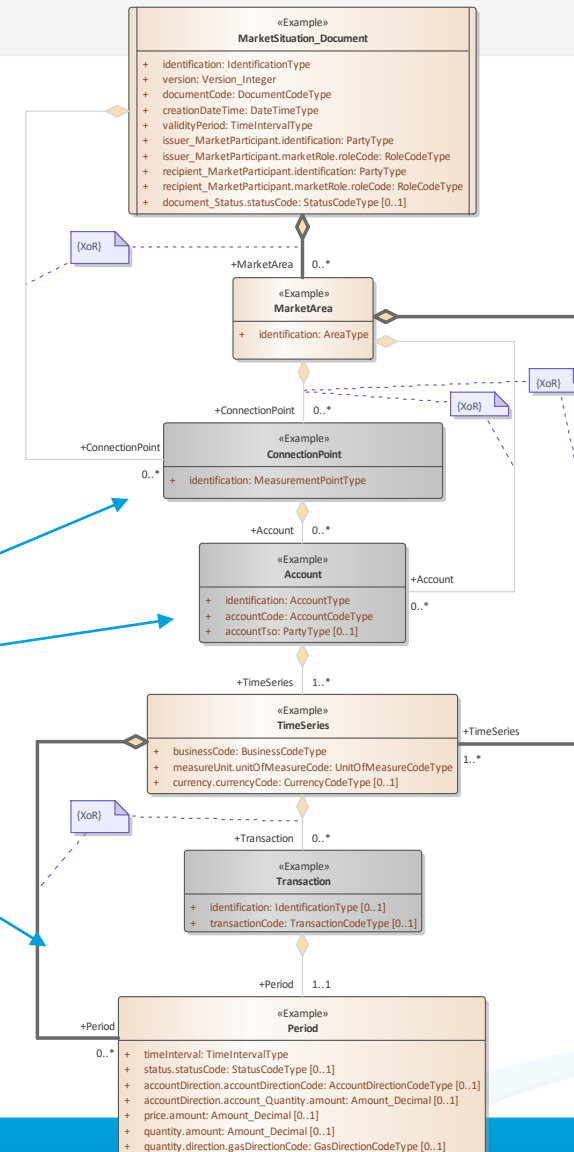
New document types

Message Implementaion Guidelines (MIG)

MIG example :

The Market Situation Document can be decomposed into several specific structures depending on the business use-case (document type). Each structure use is described in the MIG to avoid any interpretation. For instance, in the Market Area Position document :

- MarketArea is mandatory but ConnectionPoint & Account are not applicable. The document indicates this by graying out applicable segments of the MARSIT Assembly Model.
- Transaction is not used and therefore also grayed out
- The applicable links are highlighted by using a thicker line

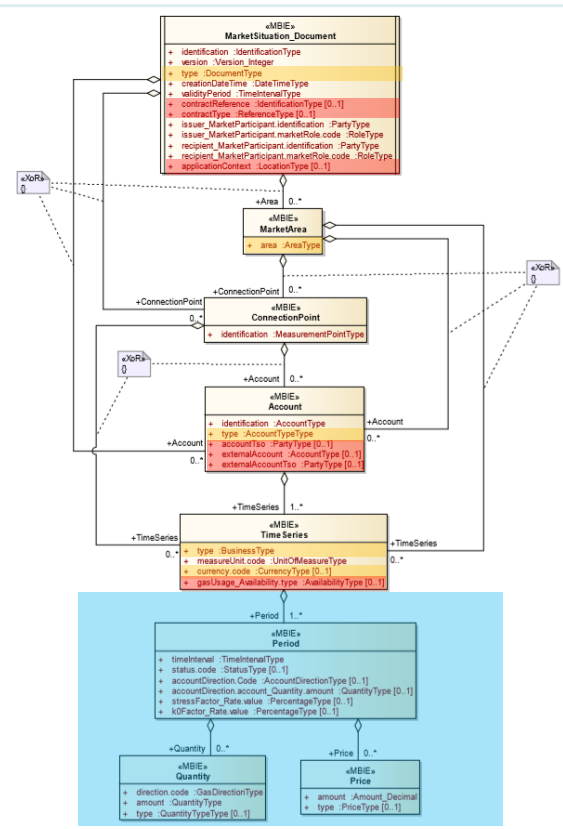


■	Attribute removed
■	Attribute change
■	Structural change

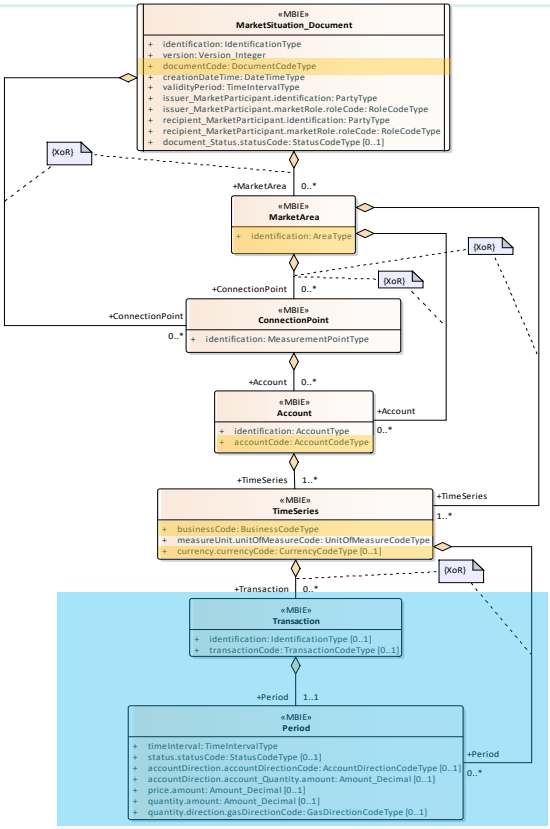
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Balancing & Settlement – Example MARSIT

Version 5



Version 6



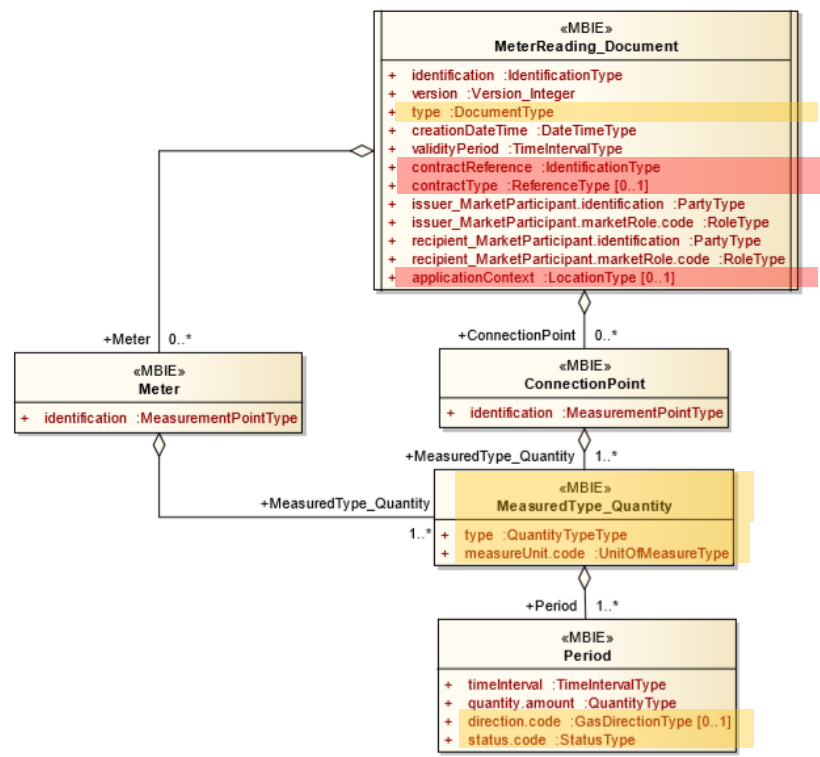
Introduction of TRANSACTION (for Balancing Action Results)

Attribute removed
Attribute change
Structural change

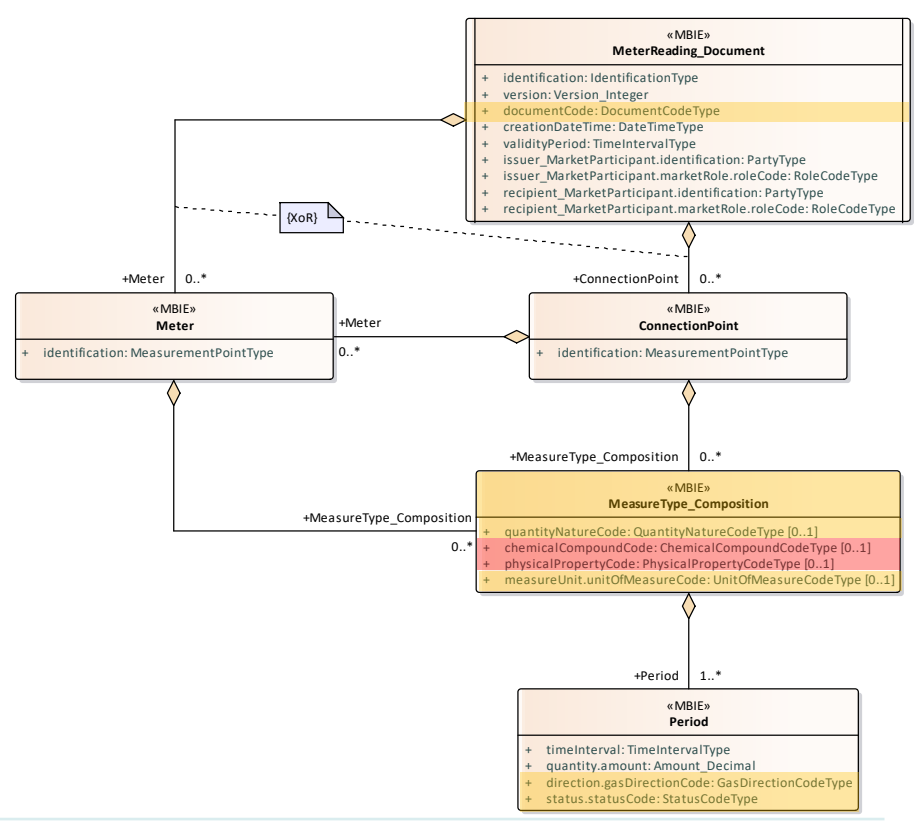
Business Area
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Balancing & Settlement – Example METRED

Version 5



Version 6





Troll A, Equinor by Oyvind Hagen

Thank you for your attention

For more information:

www.easee-gas.eu





9. Questions & Answers

Questions and Answers





Coffee Break until 15:30



10. FUNC Issue on common format for booking platforms

Marin Zwetkow

Interoperability Subject Manager

Functionality Process goals



The purpose of the Functionality process

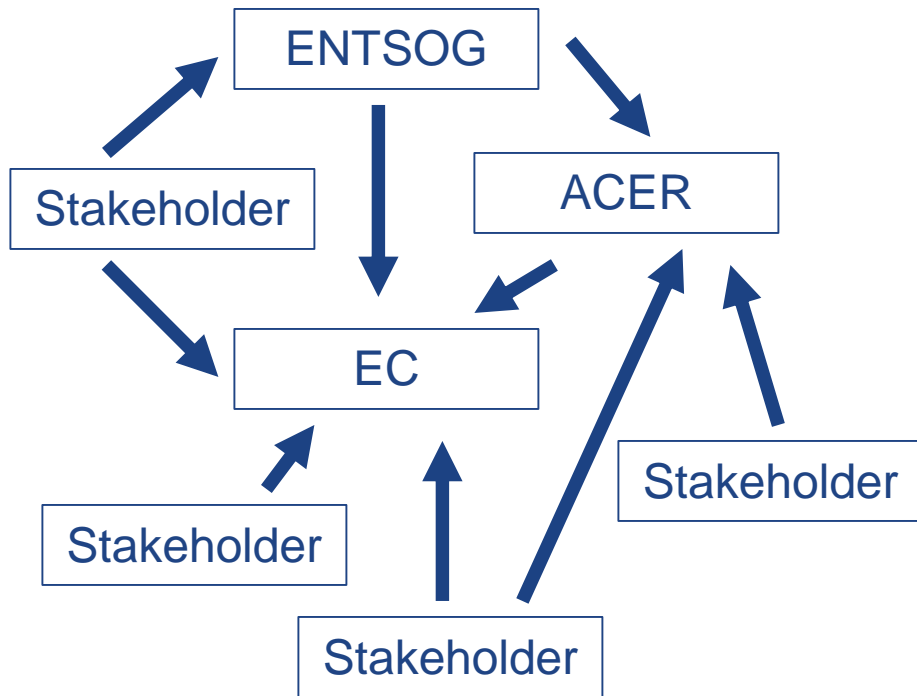
- Option for stakeholders to provide input on their concerns with the existing gas-related legislation*
- Any issues associated with the NCs and GLs can be raised
- Ensure ENTSOG and ACER are working side by side with equal mandate in such discussions about gas-related legislation
- Issue solution(s)
- Run jointly by ACER and ENTSOG, supported by EC



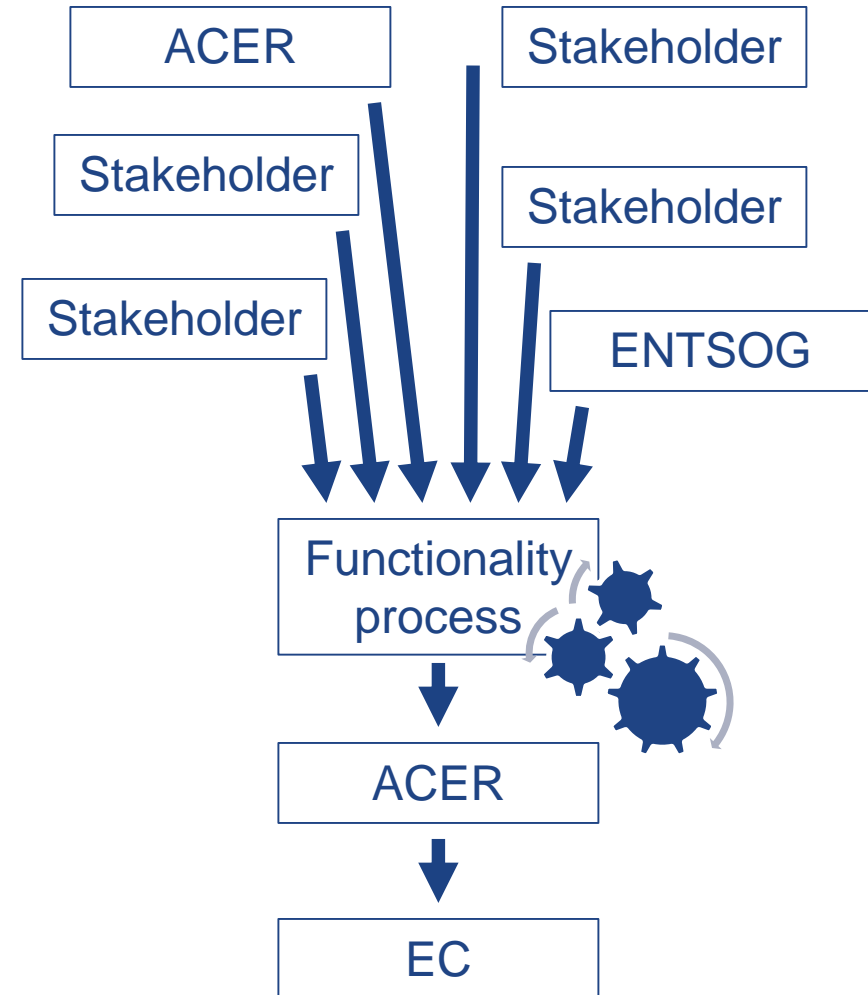
**The application of Reg. 713/2009 and Reg. 715/2009 is not affected.*

This process is without prejudice to the existing obligations and powers of TSOs and NRAs.

Robust Transparent Conceptual Process



VS



FUNC issue – common interface for booking platforms

Main Figures

- Joint Functionality Process was set up jointly by the Agency and ENTSOG with the support of the European Commission in February 2016. In August 2017 platform has a broader scope.
- FUNC has approx. 170 registered users and 17 reported issues.
- In terms of website visits:
 - Since the platform was established: 7000+ unique visitors, 30000+ page views, users from 91 countries (first five: DE, UK, BE, US, IT).
 - In 2019: 1700+ unique visitors, 5300+ page views from 64 countries (first five: DE, BE, UK, IT, PL).
- 71% come directly (putting gasfunc address into browser)
- Most popular pages:
 - “List of registered issues”

FUNC issue – common interface for booking platforms



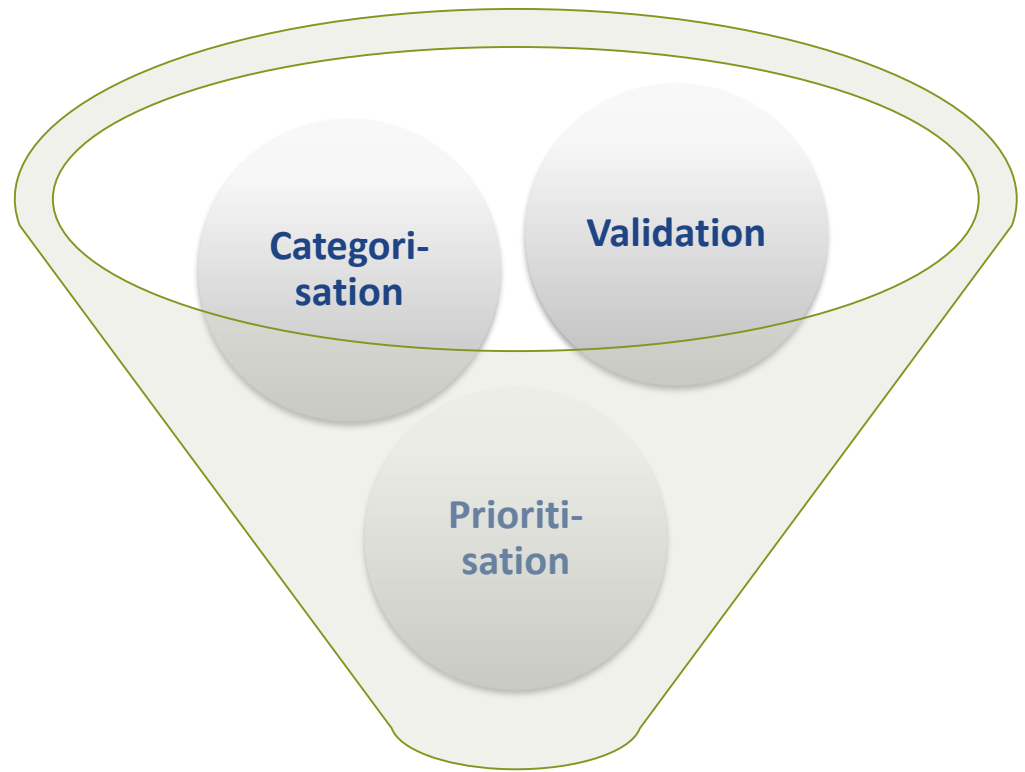
Missing harmonisation of interfaces on capacity booking platforms (notified by Equinor SA and Engie)

- The capacity booking platforms GSA, PRISMA and RBP as well as some TSO use different interfaces and data exchange solutions for capacity trading (and other processes)
- Shippers active in different markets have to develop and maintain different interfaces which creates avoidable costs
- Equinor and Engie would prefer a document-based data exchange solution for capacity trading (data format: Edig@s) while according to the ENTSOG CNOT an interactive data exchange solution should be used

FUNC issue – common interface for booking platforms



Assessment of the case



Valid, European issue of medium priority



FUNC issue – common interface for booking platforms

Current status

- 1st Stakeholder meeting 24/09/19
 - Participants: all Capacity Booking Platforms, the issue reporting parties, EFET, ACER, ENTSOG, ENTSOG members
- Agreement to launch a public consultation before the end of 2019
 - Analyse the current situation
 - Acceptance regarding introducing a common format
 - Preference for a common protocol to be used for this process
- Timeline:
 - Public Consultation launch: December 2019
 - Public Consultation closure: End of January 2020
 - Analysis of the results
 - Propose and review to potential solution: ACER, ENTSOG, relevant Stakeholders



FUNC issue – common interface for booking platforms



Questions for the Public Consultation

- Analysing the current situation
 - Used protocols and format for the communication to counterparties
 - “Size” of companies participating – activities on how many markets
 - Current usage of the format Edig@s and the protocol AS4
- Preferences for the future solution
 - Is it an advantage to have a common format for the processes mentioned in the Common Data Exchange Solution Table?
 - Possible implementation period of a common format
 - Potential requests for more functionalities to be covered by the Edig@s format
 - Preferred protocol with elaboration on the Pros and Cons

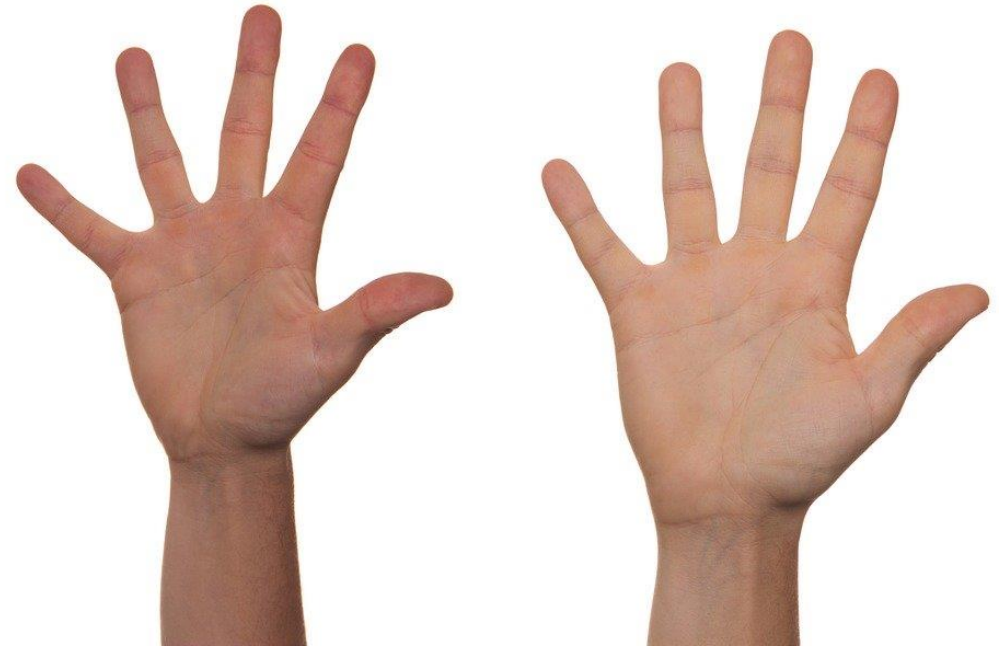


FUNC issue – common interface for booking platforms



Public Consultation

- Do you want to be informed about the launch?
- Please get in touch with ENTSOG to be added to the contact list
- Marin.Zwetkow@entsog.eu





10. Closing

Hendrik Pollex, System Operations Director

hendrik.pollex@entsog.eu

Closing Remarks



Future outlook

- Harmonisation of Gas Data Exchange is not finalised yet
- Dynamics on the Gas Market
- Topics to be discussed in the near future
 - Possible evaluation of the used protocols
 - Initiative for Europewide cooperation regarding technical specifications
- Future of the Energy market
 - Collaboration with the electricity market
- Cyber Security
 - Follow-up on the process of introducing a Network Code for Cyber Security



Links



> ENTSOG

- Interoperability Network Code
 - <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015R0703&from=EN>
- Common Network Operation tools
 - <https://www.entsog.eu/interoperability-and-data-exchange-nc#common-network-operation-tools>
- AS4 documents for implementation
 - <https://www.entsog.eu/interoperability-and-data-exchange-nc#as4-documents-for-implementation>
- ENTSOG's Website: <https://www.entsog.eu>

> EASEE-Gas

- Information about the format Edig@s: <https://easee-gas.eu/edig-s>
- Common Business Practices (CBPs): <https://easee-gas.eu/latest-cbps>
- Edig@s Website: <https://www.edigas.org>



Thank You for Your Attention

Marin Zwetkow
Subject Manager – Interoperability & Data Exchange

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