Network Code Interoperability and Data Exchange Rules

Data Exchange Workshop

Brussels – 23 April 2013

Agenda

No	Description	Time
1	**Opening (ENTSOG)** > Welcome / Introduction / Structure of Event > Objectives	**10:00-10:15**
2	**Cost Benefit Assessment– Data Exchange (ENTSOG)** > Introduction Data Exchange & draft proposal network code Data Exchange > Cost-Benefit Assessment (framework guidelines, process) – CBA Questionnaire & first results > Q&A	**10:15-11:40**
	Coffee Break	11:40-12:00
3	**Common Network Operation Tool (ENTSOG)** > Business Requirement Specification (BRS) > Maintenance and follow-up > Q&A	**12:00-12:40**
	Lunch	**12:40-13:40**
4	**Example CAM NC – From BRS to EDI message specifications (ENTSOG)**	**13:40-14:10**
5	**Stakeholders view?** (depending on the interest)	**14:10-14:30**
6	**Questions & Answers**	**14:30-15:00**
	Coffee Break	**15:00-15:30**
7	**Closing remarks (ENTSOG)**	**15:30-15:45**

Data Exchange - Agenda

Part 1:

1. **Introduction Cost-Benefit Assessment**
2. CBA Process
3. CBA Results

Part 2:

4. CNOT – Common Network Operation Tool
5. Business Processes Example (CAM)

Part 3:

6. Stakeholder Views
7. Questions & Answers

Data Exchange Harmonisation – Goal and Scope

> Eliminate barriers to the free flow of gas in Europe

- Data exchange rules to harmonise communication among market participants
- To streamline practices and facilitate technical, operational or business-related communications

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> ACER Framework guidelines on harmonisation of data exchange

- All inter-TSO data exchange
- All TSO-counterparty exchange

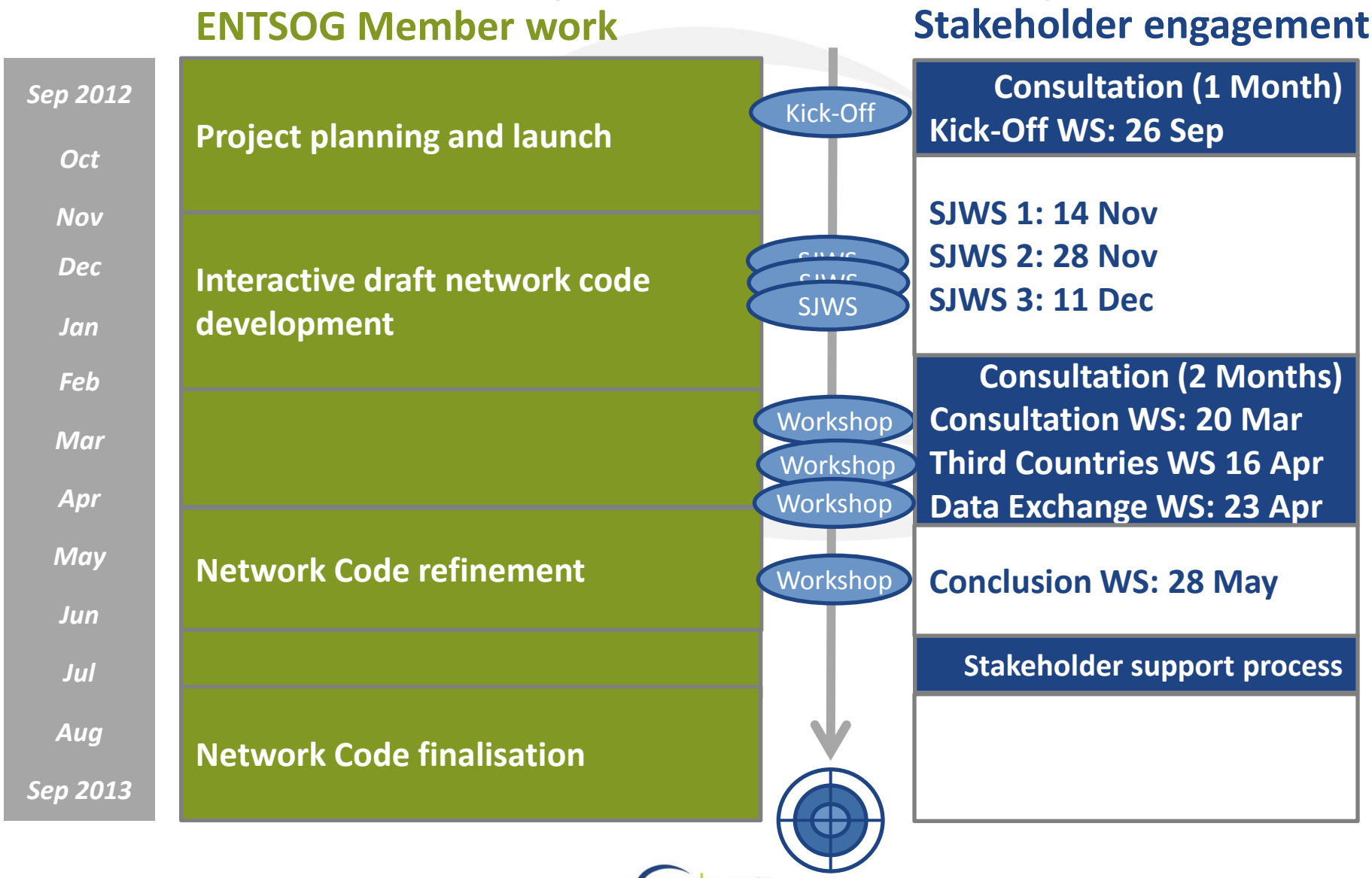
> Counterparties are defined as

- DSO (Distribution)
- SSO (Storage)
- LSO (LNG)
- Network user

ACER requirement: Cost-Benefit Assessment

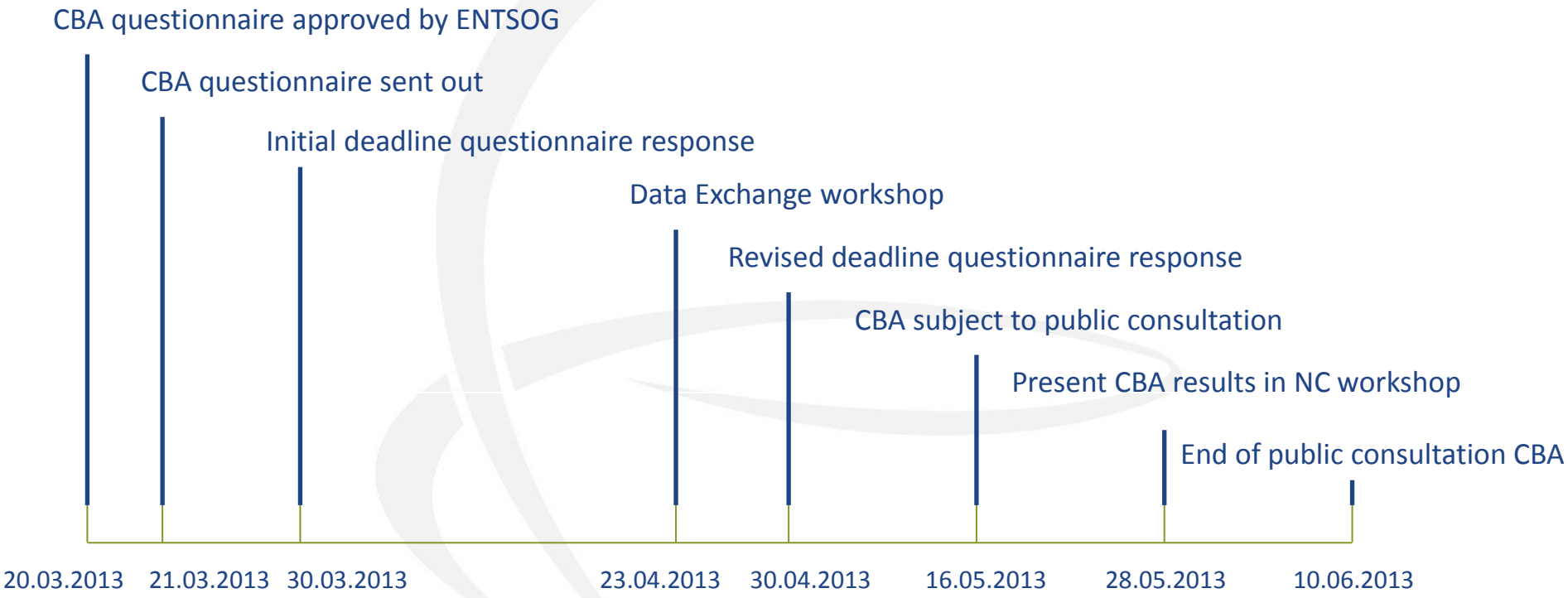
- Cost-Benefit Assessment (CBA) for data exchange (DE) solution required by ACER in framework guidelines
- Components of data exchange solution
  - Data network
  - Data format
  - Data protocol
- Must take into account the following considerations:
  - **best available technologies**, particularly in terms of security and reliability;
  - the actual **spread** (whether the solution considered is widely used) of the solutions considered;
  - the **volume** of data traffic required to transfer information;
  - the **costs** of first introduction and cost of operation;
  - the potential for **discrimination** of small shippers or new market entrants;
  - the **synergies** with current electricity Data Exchange rules;
  - the **compatibility** with counterparties' Data Exchange solutions.
- Subject to public consultation

NC Development Process Steps



Timing Network Code - CBA

> CBA process steps



- The outcome of CBA study will be integrated in the INT NC before stakeholder support process 9-23 July 2013

Data Exchange Solutions

> Components for Data Exchange

- Data Network
- Data Protocol
- Data Format

> ENTSOG defined the following types of Data Exchanges

- Document based
- Integrated
- Interactive

> ENTSOG project goal: Matrix completion

Data exchange type	Data network	Data format	Data protocol
Integrated			
Interactive			
Document based			

Definition: Data Exchange Types

1. Integrated Data Exchange
   - Direct exchange of information between applications
   - Initiator can be the sender or requestor of the information
   - Used for big data volumes & time critical processes
   - Offers flexible query possibilities

2. Interactive Data Exchange
   - Exchanges of information based on an interactive dialog controlled by the initiator of the communication
   - Less automation involved
   - Manually upload or download of files possible
   - Interaction through web browser

3. Document based Data Exchange
   - Document file transfer between IT systems
   - Adheres to the concept of 'loose' coupling
   - Traceability (documents)
   - Typically needs translator software

Data Exchange - Agenda

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CBA Execution

> Conducting CBA is split in two parts

- Technical evaluation is done with DE experts
- Macro-economical evaluation done through questionnaire to gain insight in current DE situation and cost incurred

> Questionnaire content:

- Overview current DE situation (types, volumes, counter parties)
- Cost (current system cost, cost of common data format)
- Expected benefits of a common DE solution
- Synergies & benefits with electricity DE rules

> Publication:

- Available on ENTSOG's website
- To gain maximum exposure the questionnaire was sent to:
  - TSOs
  - Participants SJWS
  - EU representative organisations (DSOs, SSO, LSO, Traders, EFET, EASEE-gas)

CBA questionnaire status

- Questionnaire was sent on 21.03.2013
  - Directly sent to: 100+ companies
  - Deadline 30.03.2013. Reminder sent on 03.04.2013
- Response status (17.04.2013):

EU state	DSO	LSO	NU	TSO	Other	Total
AT				1		1
BE				1		1
DE	4		1			5
FR				2		2
GB				2	1	3
IE				1		1
IT			1	1		2
NL	9	1	1	1		12
PT				1		1
SK				1		1
SP	1		1	1		3
Total	**14**	**1**	**4**	**12**	**1**	**32**

CBA approach

> The CBA is approached in three parts

- Technical evaluation of DE solutions and types
- Macro-economical cost evaluation of document based DE type
- Further evaluation: volumes, discrimination and synergies

Data Network	Data Format	Data Protocol
Technical Evaluation - Integrated DE - Interactive DE - Document-based DE	**Technical Evaluation** - Integrated DE - Interactive DE - Document-based DE	**Technical Evaluation** - Integrated DE - Interactive DE - Document-based DE
Macro-economical Evaluation - Document-based DE	**Macro-economical Evaluation** - Document-based DE	**Macro-economical Evaluation** - Document-based DE

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Data Network – Technical Evaluation (I)

> Alternatives are scored against criteria set by ITC KG (Kernel Group)

> Business requirements

- Accessibility for all parties involved in the international gas business
- Operator independent network connections due to the geographical spread of connected user
- Easy and fast, flexible and worldwide accessibility
- Reliability and up-time of the network

> Technical solutions evaluated

- ISDN (digital telephone lines)
- X25
- Private owned networks
- Internet

Data Network – Technical Evaluation (II)

> Evaluation Matrix

Concept / Criteria	Weighting	ISDN	ISDN weighted score	X25	X25 weighted score	Private network	Private network weighted score	Internet	Internet weighted score
Accessibility	1	5	5	3	3	2	2	5	5
Independent network	1	5	5	4	4	3	3	5	5
Fast network	1	3	3	2	2	5	5	5	5
Reliable	1	4	4	4	4	4	4	4	4
Totals		17	**17**	13	**13**	14	**14**	19	**19**

Scoring (1-5), where 1 is poor and 5 excellent

Data Network – Macro Econ. Evaluation

> Market Spread

Concept

ENTSOG DES CBA - DE Network - Spread

Spread of data exchange network (document based DE)										
Country	*Internet*		*ISDN*		*VPN*		*PN*		*Others*	
AT	X									
BE	X						X			
DE	X		X				X			
FR	X		X				X		X	
GB	X		X		X					
IE	X									
IT	X		X				X			
NL	X		X							
PT	X									
SK	X									
SP	X		X							
	TSO	Non-TSO	TSO	Non-TSO	TSO	Non-TSO	TSO	Non-TSO	TSO	Non-TSO
Used by % of respondents	83%	100%	25%	30%	8%	0%	33%	10%	17%	0%

Results based on answers from ENTSOG questionnaire 2013

Data Network – Preliminary Conclusions

- Questionnaire results show the internet is most widely used as the data network for data exchange

- Internet as data network scores highest on technical evaluation

- Therefore the following solution is proposed for the network code:

Data exchange type	Data network
Integrated	Internet
Interactive	Internet
Document based	Internet

Data Format – Technical Evaluation (I)

> Alternatives are scored against criteria set by ITC KG

> Business requirements

- Content standardisation needs to be possible
- The file format must support an open standard
- Overhead of the file format should be kept within boundaries
- The file format used must be spread throughout the EU gas market
- The file format needs to be readable for human and machine, complexity should therefore be kept at an acceptable level

> Technical solutions evaluated

- CSV
- XLS
- EDIFACT
- XML

Data Format – Technical Evaluation (II)

> Evaluation Matrix

Concept Criteria	Weighting	CSV	CSV weighted score	Excel	Excel weighted score	EDIFACT	EDIFACT weighted score	XML	XML weighted score
Content standardisation	1	1	1	3	3	5	5	4	4
Open content standard	1	3	3	3	3	5	5	5	5
Format overhead	1	5	5	4	4	4	4	3	3
Spread	1	3	3	2	2	3	3	4	4
Complexity	1	2	2	5	5	2	2	4	4
Totals		14	**14**	17	**17**	19	**19**	20	**20**

Scoring (1-5), where 1 is poor and 5 excellent

Data Format – Macro Econ. Evaluation

> Market Spread

Concept

ENTSOG DES CBA - DE Format - Spread

Spread of data exchange formats (document based DE)												
	XML		*CSV*		*Excel*		*EDIFACT*		*Edig@s (XML)*		*Kiss-A*	
Country												
AT									X		X	
BE			X				X		X			
DE							X		X		X	
FR	X		X				X		X			
GB	X								X			
IE	X		X									
IT	X				X		X		X			
NL	X						X		X			
PT					X							
SK					X				X		X	
SP	X		X		X		X		X			
	TSO	Non-TSO	TSO	Non-TSO	TSO	Non-TSO	TSO	Non-TSO	TSO	Non-TSO	TSO	Non-TSO
Used by % of respondents	33%	65%	50%	0%	33%	5%	25%	45%	50%	30%	17%	10%

Results based on answers from ENTSOG questionnaire 2013

Data Format – Preliminary Conclusions

- Questionnaire results show that use of XML is wide-spread
- XML receives highest scores on technical evaluation
- Therefore the following solution is proposed for the network code:

Data exchange type	Data format
Integrated	XML
Interactive	N/A
Document based	XML

Data Protocol – Technical Evaluation (I)

> Alternatives are scored against criteria set by ITC KG

> Technical criteria

- Timing of protocol (message push / pull)
- Security of protocol
- Payload (the actual content of the message)
- Traceability of protocol (message logging)

> Risk criteria

- Expected life cycle
- Maturity of protocol
- Available solutions

> Technical solutions evaluated

- AS2
- ebMS v3
- AS4

Data Protocol – Technical Evaluation (II)

> Evaluation Matrix

Concept

Technology	Weighting	AS2 Score	AS2 weighted score	ebMS v3 Score	ebMS v3 weighted score	AS4 score	AS4 weighted Score
Timing	1	4	4	5	5	5	5
Security	1	4	4	5	5	5	5
Payload	1	4	4	4	4	4	4
Traceability	1	4	4	5	5	5	5
Risk	**Weighting**						
Life cycle	1	3	3	5	5	5	5
Maturity	1	5	5	2	2	2	2
Available solutions	1	5	5	3	3	2	2
Totals		29	**29**	29	**29**	28	**28**

Scoring (1-5), where 1 is poor and 5 excellent

Data Protocol – Macro Econ. Evaluation (I)

> Market spread

Concept

ENTSOG DES CBA - DE Protocols - Spread

Spread of data exchange protocols (document based DE)								
Country	*AS2*	*FTP*	*sFTP*	*HTTP*	*HTTPS*	*SOAP*	*Fax*	*SMTP*
AT	X		X					X
BE	X	X			X	X		
DE	X	X		X	X	X		X
FR	X	X			X	X		
GB	X	X	X	X	X			
IE		X			X		X	X
IT	X	X	X	X	X			X
NL	X	X	X	X	X		X	X
PT		X			X			X
SK	X							X
SP		X	X	X	X	X		X

	TSO	Non-TSO	TSO	Non-TSO	TSO	Non-TSO	TSO	Non-TSO	TSO	Non-TSO	TSO	Non-TSO	TSO	Non-TSO	TSO	Non-TSO
Used by % of respondents	42%	35%	58%	30%	33%	10%	17%	5%	33%	55%	17%	0%	8%	5%	42%	25%

Results based on answers from ENTSOG questionnaire 2013

Data Protocol – Macro Econ. Evaluation (II)

> Average cost of implementation per protocol

- Based on questionnaire responses

Concept

	Setup	Maintenance
AS2 (as-is implementation)	€87.000 (€10.000-€320.000)	€52.000 (€1000-€200.000)
AS2 (expected)	€164.000 (€35.000-€500.000)	€104.000 (€4.000-€500.000)
ebMS v3 (expected)	€232.000 (€35.000-€1.700.000)	€116.000 (€4000-€500.000)
AS4 (expected)	€203.000 (€10.000-€1.700.000)	€123.000 (€4000-€500.000)

- Initial set-up includes hardware, software and configuration
- Maintenance includes license and configuration (annual)

Data Protocol – Macro Econ. Evaluation (III)

> Cost of implementation at one company for common data exchange protocol for document based data exchange

Concept

> Based on the following assumptions:

- Expected total life cycle of 10 years
- Discount rate: 7%
- Benefits kept at €0

Scenario	Net Present Value

Data Protocol – Macro Econ. Evaluation (IV)

> Cost of market wide implementation for a common data exchange protocol for document based data exchange

Concept	AS2		ebMS v3		AS4	
	TSO	Non-TSO	TSO	Non-TSO	TSO	Non-TSO
Number of parties	43	3700	43	3700	43	3700
Market coverage	42%	35%	0%	0%	0%	0%
Individual cost						
Market cost						

Discounted cash flow calculation (NPV) to be executed

Data Protocol – Preliminary Conclusions

- Technical evaluation
  - ebMS v3 and AS4 score highest on technical criteria
  - AS2 scores highest on risk criteria
- Questionnaire shows that AS2 is used for document based DE and HTTP(S)/SOAP are used for integrated DE
- Cost calculation still under evaluation: Scenario calculation needs to take place
- The following solution is proposed for the draft network code:

Data exchange type	Data protocol
Integrated	HTTP(S)/SOAP
Interactive	N/A
Document based	AS4

Further Considerations

> Preliminary conclusions based on technical and macro-economical considerations

> Further ACER requirements to be considered

- Data Volumes
- Potential discrimination
- Synergies

ACER Considerations: Data Volumes

> Average number of messages per day (intensive market = >4000 msgs)

From \ To	TSO	Non-TSO
TSO	3500 (0-20000)	14600 (4100-40000)
Non-TSO	3600 (100-15200)	13900 (4000-15500)

> Average number of messages per day (non-intensive market)

From \ To	TSO	Non-TSO
TSO	300 (0-800)	100 (500-2800)
Non-TSO	400 (0-1000)	800 (100-2300)

> Average annual data volume sent (total market) average message size = 10 kB

	Data volume in GB
TSO	670
Non-TSO	48000

Results based on answers from ENTSOG questionnaire 2013

ACER Considerations: Discrimination

> Avoid discrimination of small shippers and new market entrants

- Keep existing DE solutions in place as long as compliant with the business requirements
- Services offered by service providers avoid big IT investments in DE solutions
- Interactive DE solutions (depending on the application) will allow simple access from a PC via a browser

ACER Considerations: Synergies

- Data network used: Internet
- Data protocol used:
  - Electricity – MADES: Communication via third party (platform)
    - Not all e-TSOs are supporting this solution
    - Hosted solution does not guarantee delivery of data to counter party. Responsibility is not set - but required for TSOs
  - Traders – EFET: business requirements are specific for trading
    - EFET standard (ebXML) includes business practices
- Data format used:
  - XML : Maintenance of protocol for all gas and electricity parties involved creates interdependencies
    - Increased maintenance cost
    - Increased risk for failures
- 91% of questionnaire respondents say no benefits are gained when harmonising gas and electricity DE rules

Data Exchange Harmonisation: Benefits

- Harmonised gas-market DE will remove cross-border trade barriers
- Fewer communication solutions to maintain: reduced costs
- Higher communication reliability with fewer DE solutions in place
- Less expensive transactions due to more intensive use of harmonised data exchanges

Concept

CBA Conclusions

- Based on questionnaire results received by ENTSOG
- Based on technical evaluation with experts
- Based on further considerations set by ACER

- The following preliminary conclusion for the network code is:

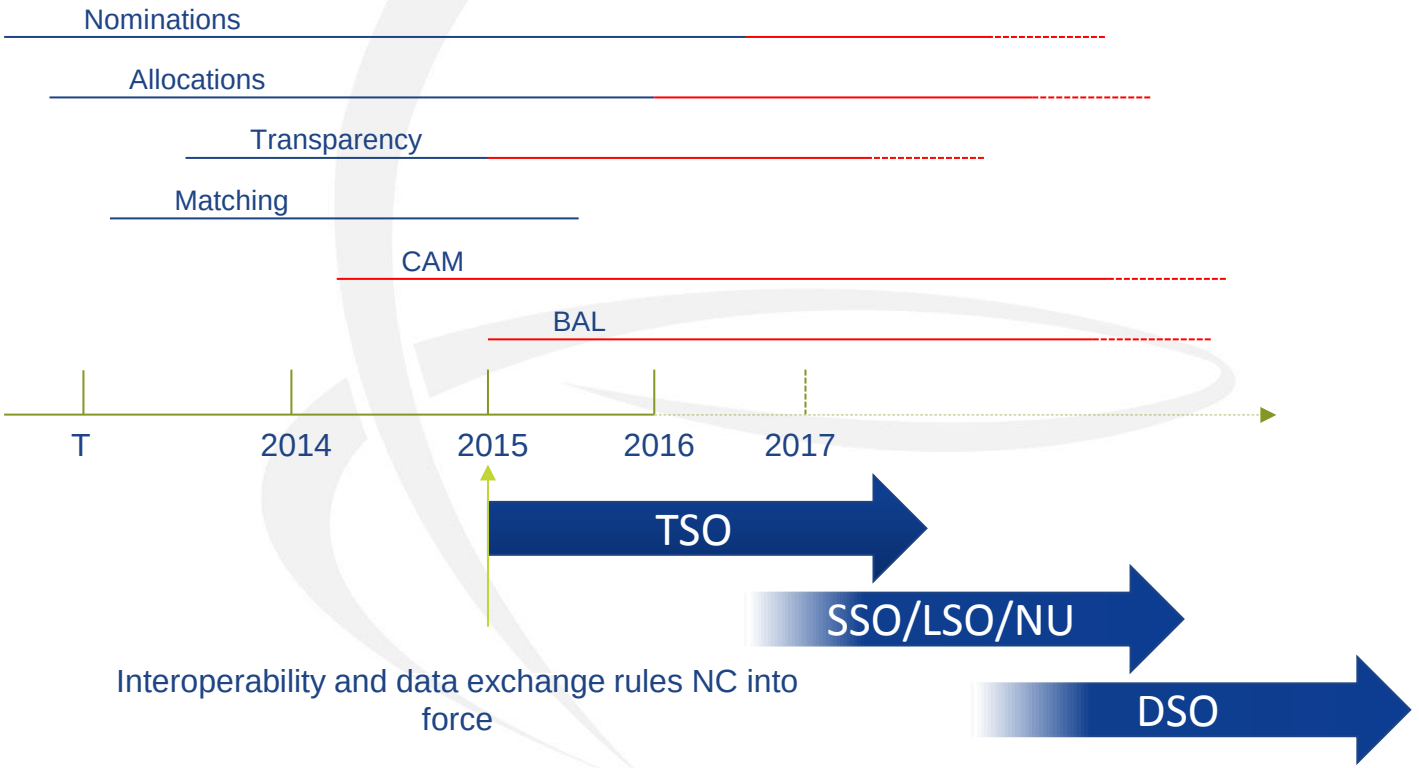
Data exchange type	Data network	Data format	Data protocol
Integrated	Internet	XML	HTTP(S)/SOAP
Interactive	Internet	N/A	N/A
Document based	Internet	XML	AS4

- Based on cost findings a phased approach of DE rules harmonisation is suggested

Implementation Proposal & Timeline

Concept

- Phased approach for DE harmonisation
  - Between TSOs
  - Between TSOs and counter parties



- Subject to the decision of national regulatory authorities

Data Exchange - Agenda

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CNOT – Reg 715/2009

REGULATION (EC) No 715/2009 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 13 July 2009

Article 8

Tasks of the ENTSO for Gas

3. The ENTSO for Gas shall adopt:

(a) common network operation tools to ensure coordination of network operation in normal and emergency conditions, including a common incidents classification scale, and research plans;

Data Exchange in other network codes

Data Exchange for other Business Processes

Art 27 Development process for Data Exchanges of other NCs:

1. Data exchange requirements shall be managed and controlled by ENTSOG

2. ENTSOG shall develop Common Network Operation Tools detailing:
   - the rules to be applied for the development of data exchange requirements
   - business requirement specification(s)
   - the data format release management

3. ENTSOG shall publish all relevant information for the data exchange requirements on its website.

Data Exchange - CNOT

CNOT for Data Exchange

1. **General:**
   - Description of the BRS process
   - Roles and parties
   - Stakeholder involvement

2. **Technical: Data Exchange network code**
   - Defines the **HOW** = define the communication rules between TSOs and their Counterparties
   - Covered by the network code Interoperability and Data Exchange
   - Contains all technical information related to communication interface set-up

3. **Business Processes: Other network codes**
   - Defines the **WHAT** = content of the information that needs to be exchanged between partners during the execution of the business process(es)
   - Business model description and implementation guidelines
   - Contains the Message structure

Development process for network codes

1. Development Network Code

- NC development (ENTSOG & Stakeholders)
- Selection of the appropriate communication tools (ENTSOG)

Network Code

2. Data solution development

→ **Based on NC:** define Business Rules Specifications (BRS)

- Business Process Model (Actors, Systems, Use Case Diagram)
- Business Requirements (Text Document)
- Functional Specification (Sequence & Workflow Diagrams)
- Information model (identify the required business information for every data flow)

→ **Based on the BRS**: develop implementation guideline document

- Define the detailed structures for every data flow (Edig@s-XML)
- Define implementation recommendations
- Update document change log

- **Validation period** (publication draft version on ENTSOG website & stakeholder consultation/workshops)

→ENTSOG (incl. Validation process)

Implementation Guidelines

➔ CNOT

3. Publication of Implementation Guidelines

Data Exchange - Agenda

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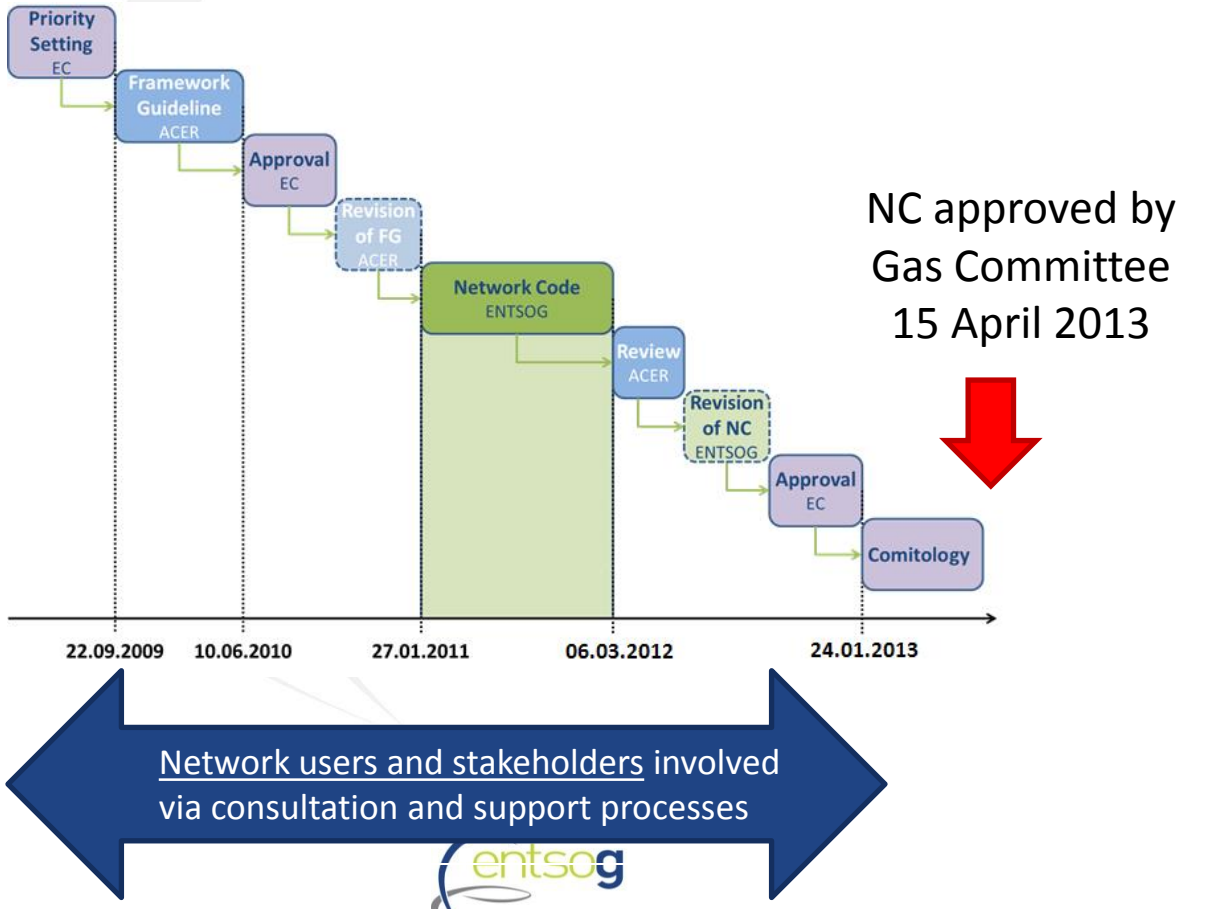
BRS: NC development

Example of BRS (Business Rules Development CAM)

1. **Development Network Code**

- **NC development (ENTSOG & Stakeholders)**
- Selection of the appropriate communication tools (ENTSOG)



BRS: selection of communication tools

Example of BRS (Business Rules Development CAM)

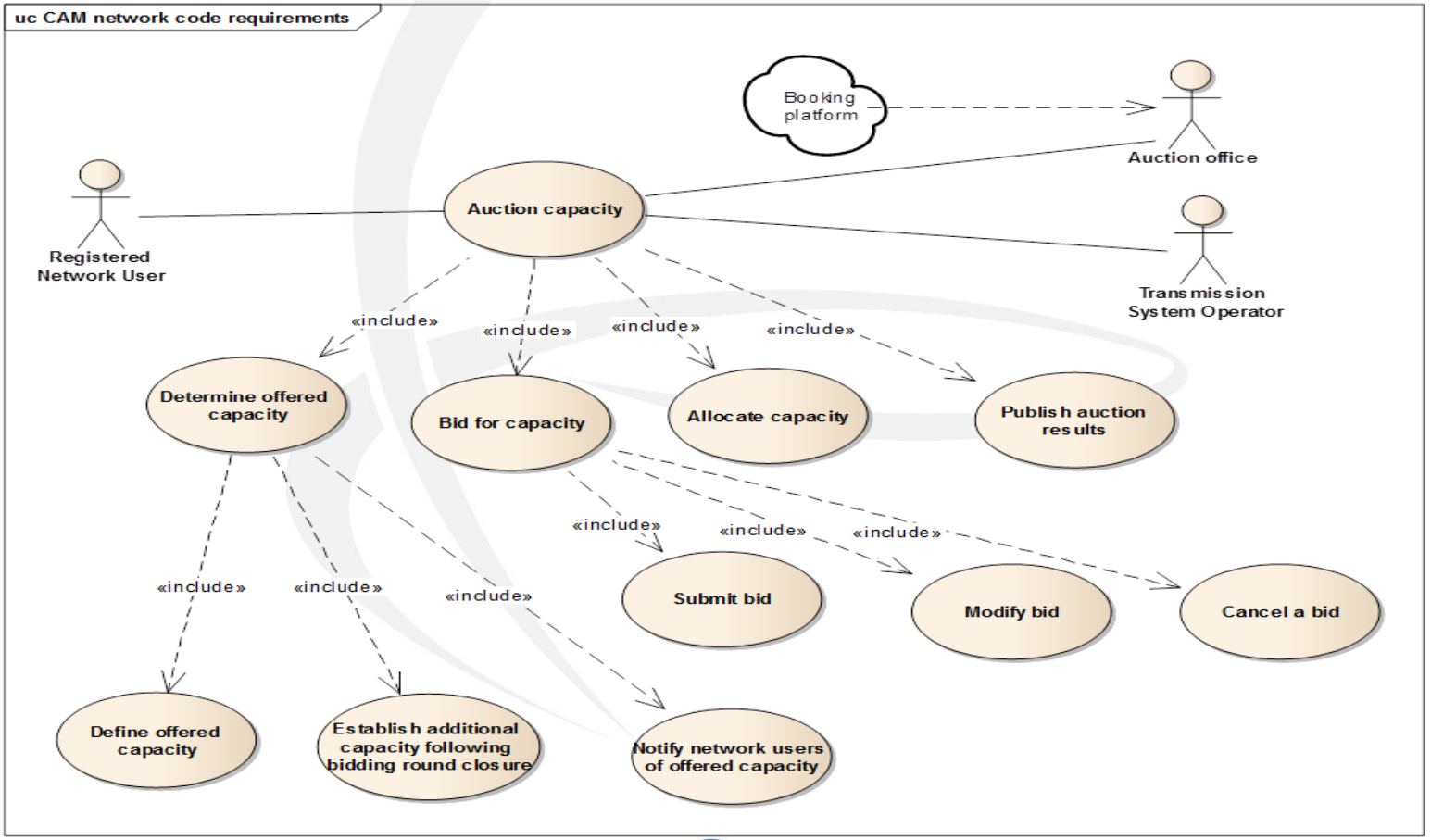
1. **Development Network Code**
   - NC development (ENTSOG & Stakeholders)
   - **Selection of the appropriate communication tools (ENTSOG)**

- CAM NC defines processes for the **harmonised allocation of primary capacity**
- Capacity must be offered as a **bundled product wherever possible**
- NC creates a **clear need for new data solutions**
  - Communication between network users, TSOs, and auction office (e.g. a booking platform)
  - Communication between adjacent TSOs for the offer and allocation of bundled capacity
- **Strong efforts towards early implementation before mandatory deadline of 1 November 2015**
  - Two new platforms
  - Bundling initiatives at large number of IPs
- **ENTSOG members have taken the initiative to discuss moves towards standardised messages**

BRS: Business process model

Example of BRS (Business Rules Development CAM)

1. **Data solution development:** Business Process Model
   (Actors, Systems, Use Case Diagram)

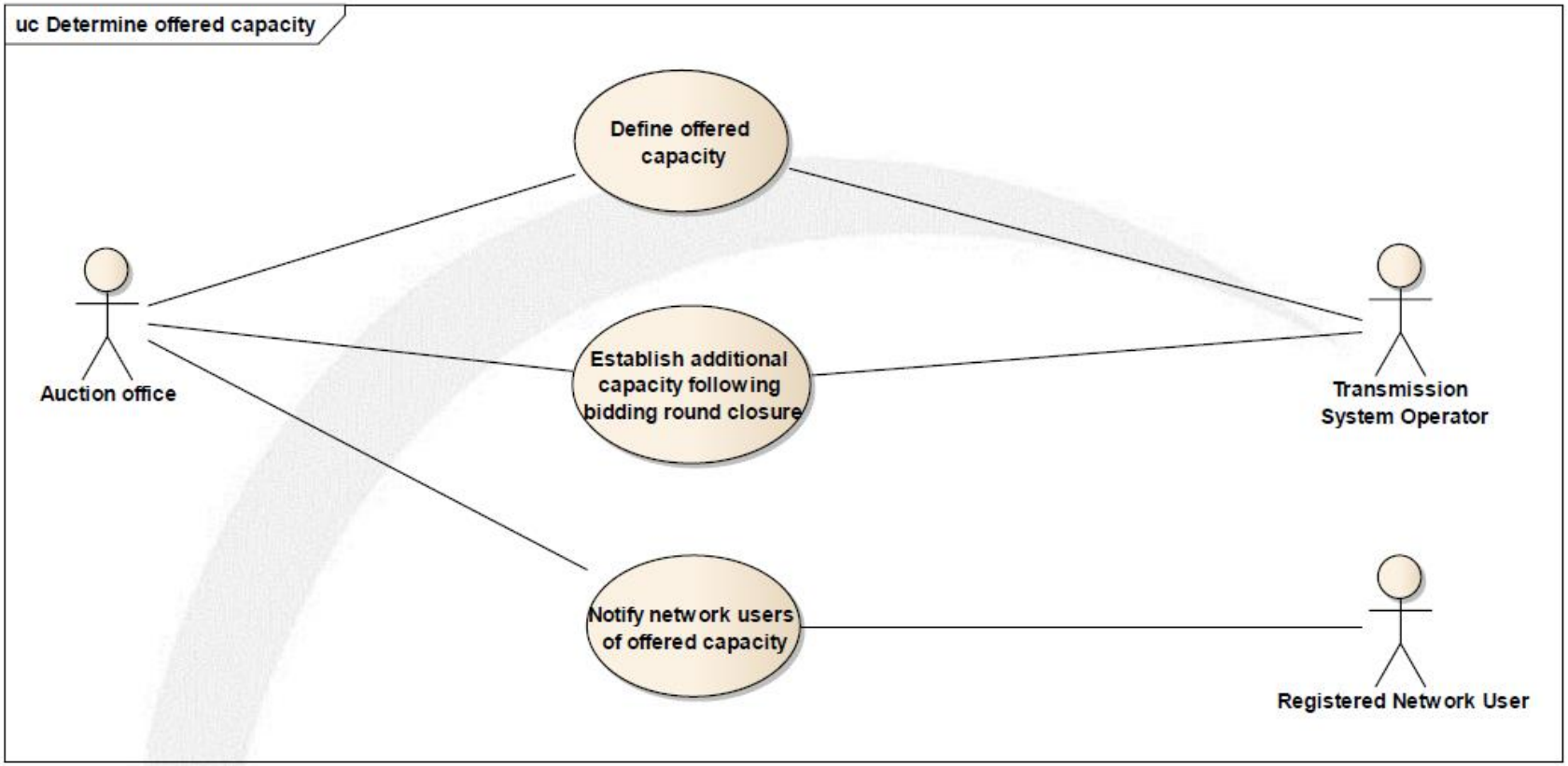


BRS: Business requirements

Example of BRS (Business Rules Development CAM)

2. **Data solution development:** Business Requirements (use case)

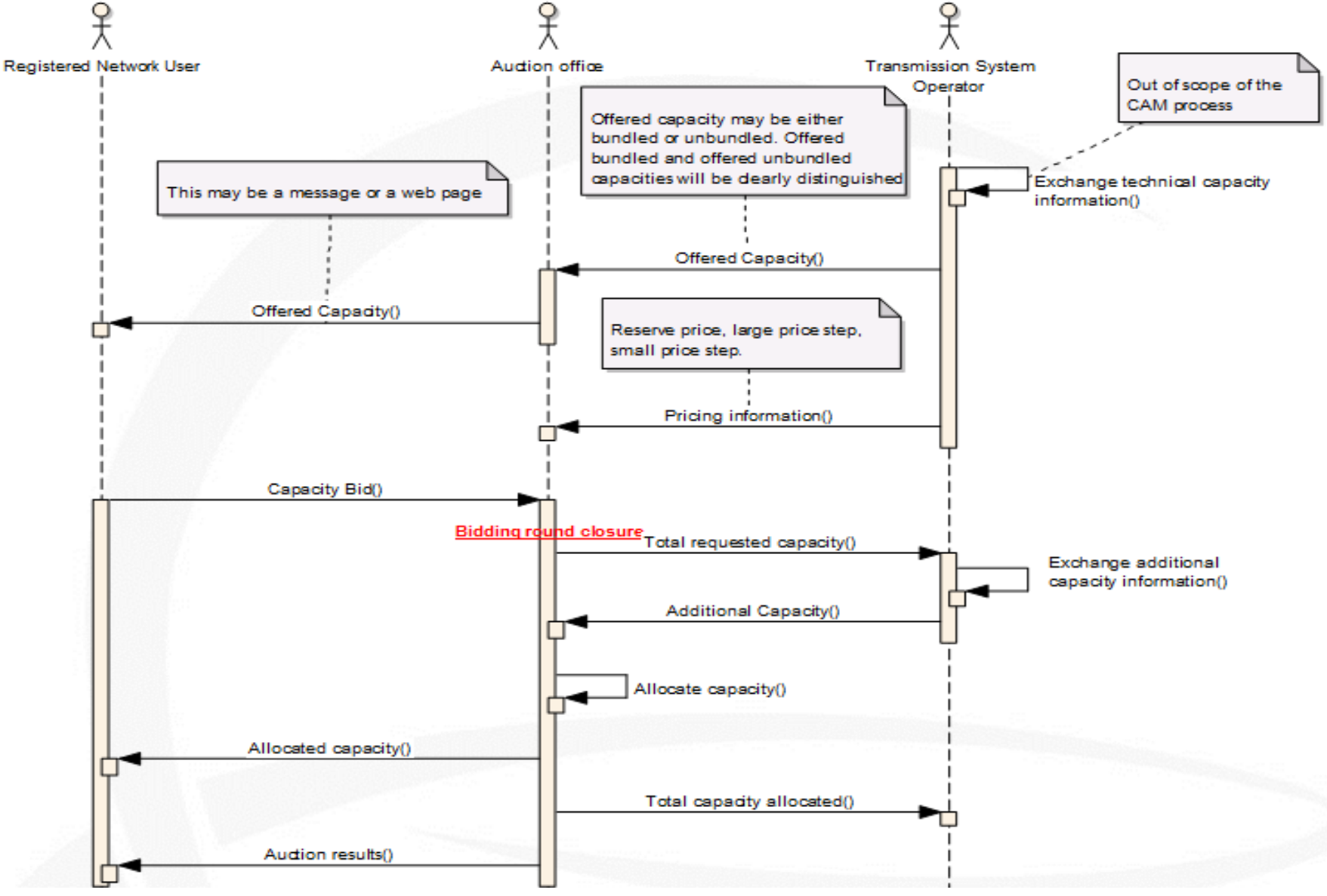
Determine the capacity that is presented to the market for auction.



Data Exchange

Example of BRS (Business Rules Development CAM)

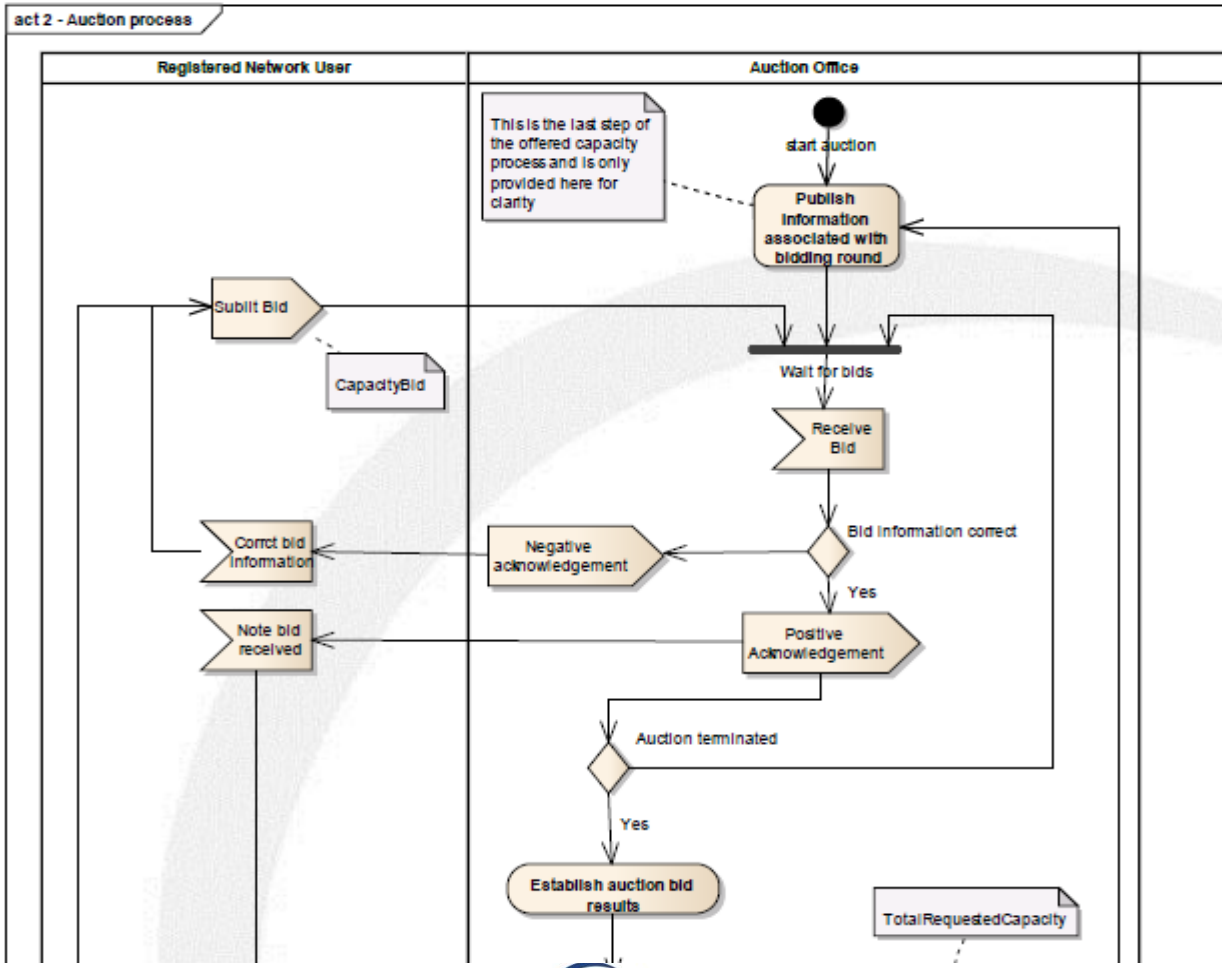
3. **Data solution development:** Sequence Diagram



Data Exchange

Example of BRS (Business Rules Development CAM)

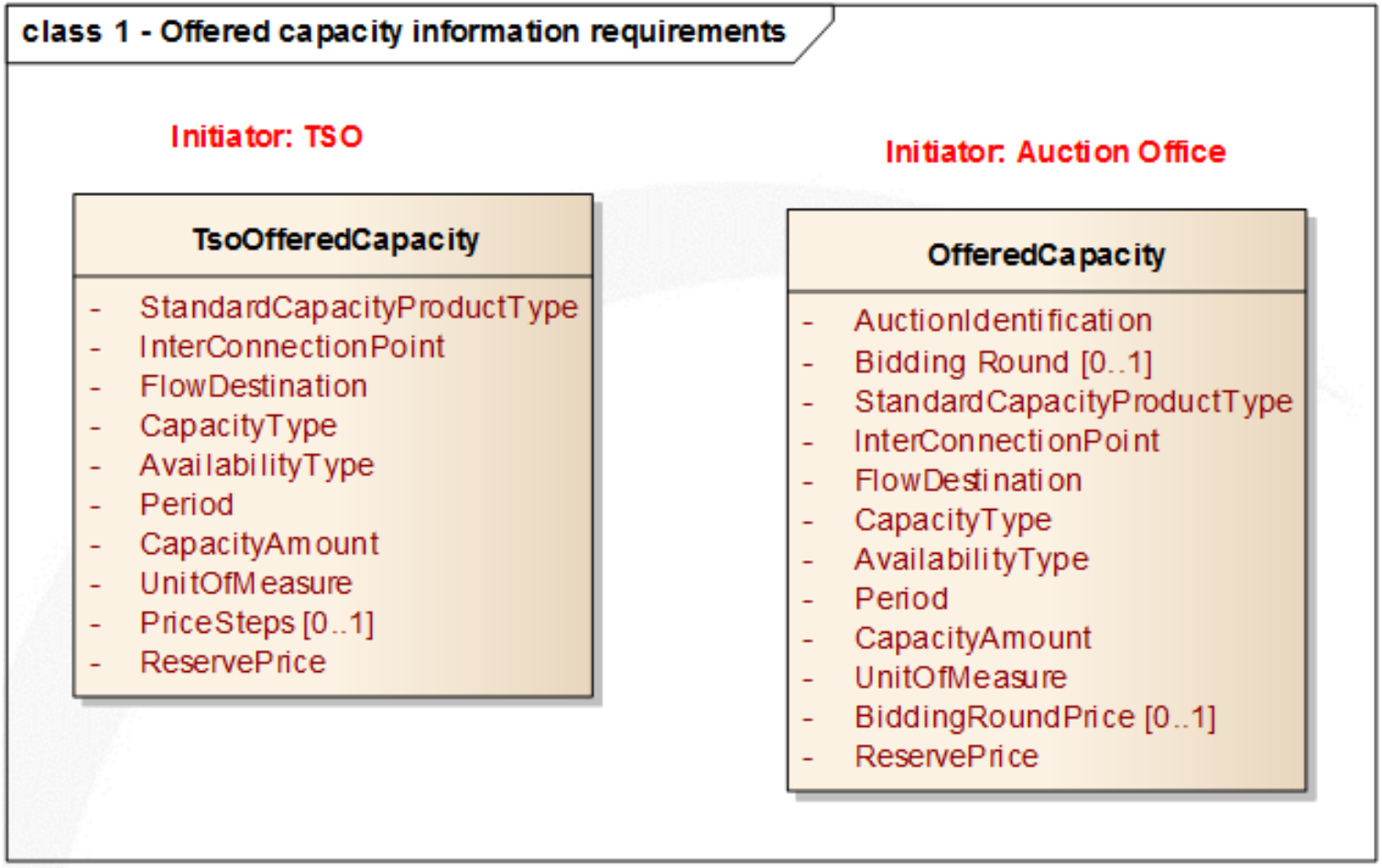
4. **Data solution development:** Workflow diagram



Data Exchange

Example of BRS (Business Rules Development CAM)

5. **Data solution development:** Information model



Data Exchange

> **Data Formats – Example XML format for Nomination**

```
<Nomination Version="EGAS40" Release="2">
    <Identification v="NOMINT1111"/>
    <Type v="01G"/>
    <CreationDateTime v="2012-09-30T11:18:00Z"/>
    <ValidityPeriod v="2012-10-01T04:00Z/2012-10-02T04:00Z"/>
    <ContractReference v="STAIZTSHIPPERACCOUNT"/>
    <ContractType v="CT"/>
    <IssuerIdentification v="SHIPPER" codingScheme="321"/>
    <IssuerRole v="ZSH"/>
    <RecipientIdentification v="TSO" codingScheme="321"/>
    <RecipientRole v="ZSO"/>
    <ConnectionPointInformation>
        <LineNumber v="1"/>
        <ConnectionPoint v="IZT" codingScheme="321"/>
        <AccountIdentification v="AB999" codingScheme="321"/>
        <AccountRole v="ZES"/>
        <Period>
            <TimeInterval v="2012-10-01T04:00Z/2012-10-02T04:00Z"/>
            <Direction v="Z02"/>
            <Quantity v="1000"/>
            <MeasureUnit v="KW1"/>
        </Period>
    </ConnectionPointInformation>
</Nomination>
```

Data Exchange

Example of BRS (CAM)

6. **Next steps**

- Develop the detailed message specifications (ENTSOG & EDIGAS WG)
- Add implementation details
- Produce a complete Implementation Guideline

- **Validate** the Implementation Guideline

- **Publish** the implementation Guideline
  - General overview
  - Functional definition
  - Workflow scenarios
  - References
  - Information model
  - XML implementation
  - Document change log

Data Exchange - Agenda

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6. **Stakeholder Views**
7. Questions & Answers

Data Exchange

Data Exchange workshop

Stakeholders' views

Easee-gas - Edig@s standard

Brussels – 23 April 2013

Electronic Data Interchange - GAS

ENTSOG Data Exchange Workshop
on Network Code Interoperability and Data Exchange Rules,
Brussels, 23 April 2013

Peter Meeuwis

EASEE-gas Executive Committee Chairman

Topics

- History of Electronic Data Interchange – GAS
- LoU ENTSOG – EASEE-gas
- Proces van NC -> BRS -> EDIG@S-message
- Future EDIG@S

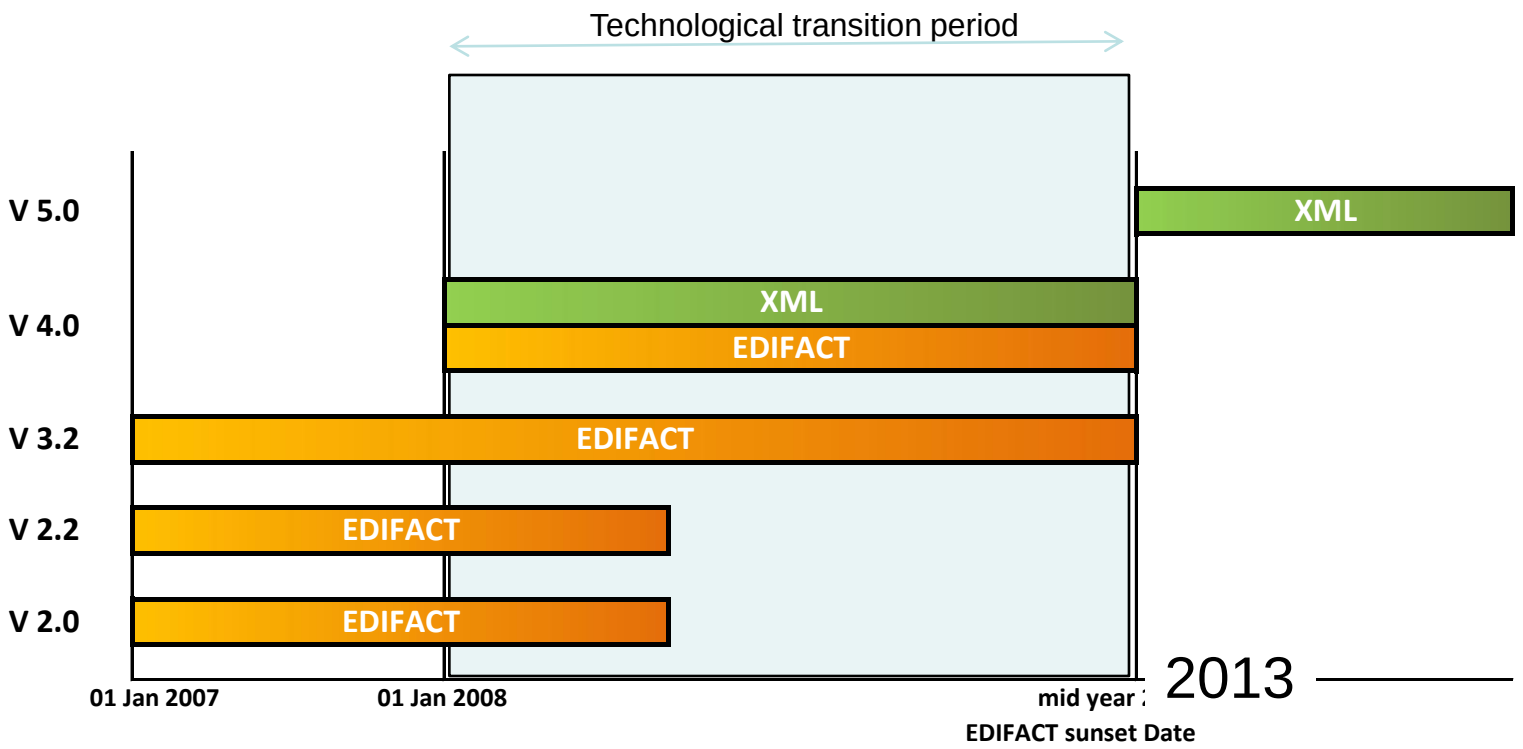
History (1/2)

- 1983 GASNET-protocol
  - Distrigas, Gaz de France, Ruhrgas, Gasunie
- May 1996 international EDI standard for communication
  - Distrigas, Gaz de France, Ruhrgas, Gasunie and Statoil
- End 1996 UN/EDIFACT was chosen as the international standard to be used.
- 1997 - 2005 UN/EDIFACT subsets were published

History (2/2)

- 2002 EASEE-Gas founded
- 2003 Edig@s adopted as Common Business Practise
- 2007 version 4 of Edig@s message set
  - UN/EDIFACT syntax
  - XML syntax.
- 2013 version 5 of the Edig@s: UN/EDIFACT XML syntax (ISO TS 20625)

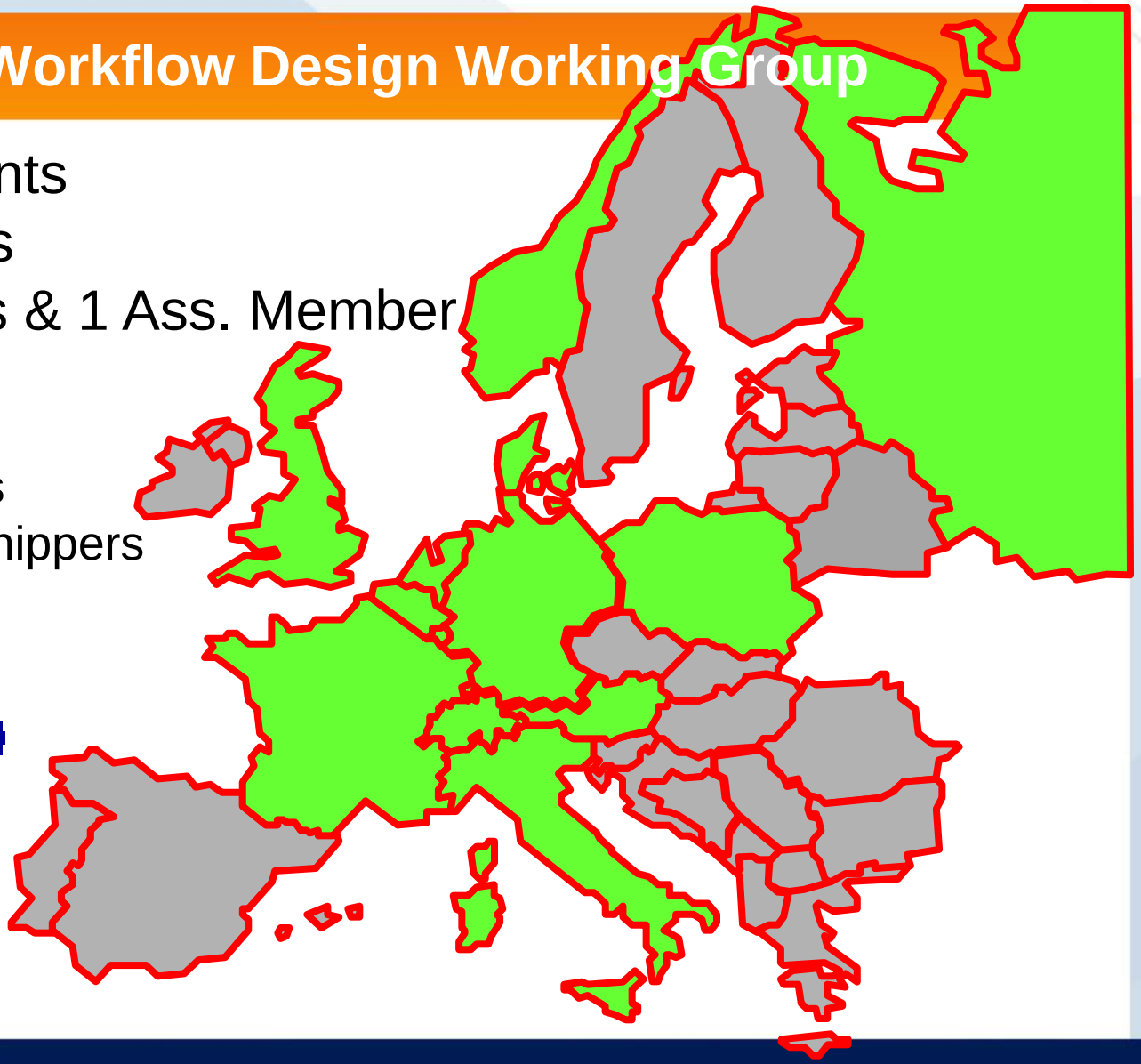
EDIG@S Version Management



Message & Workflow Design Working Group

- 19 Participants
- 12 Countries
- 18 Members & 1 Ass. Member
  - Producers
  - Suppliers
  - Transporters
  - Traders & Shippers
  - LTSOSP

Edig@s



History end

Electronic Data Interchange - GAS
EDIG@S

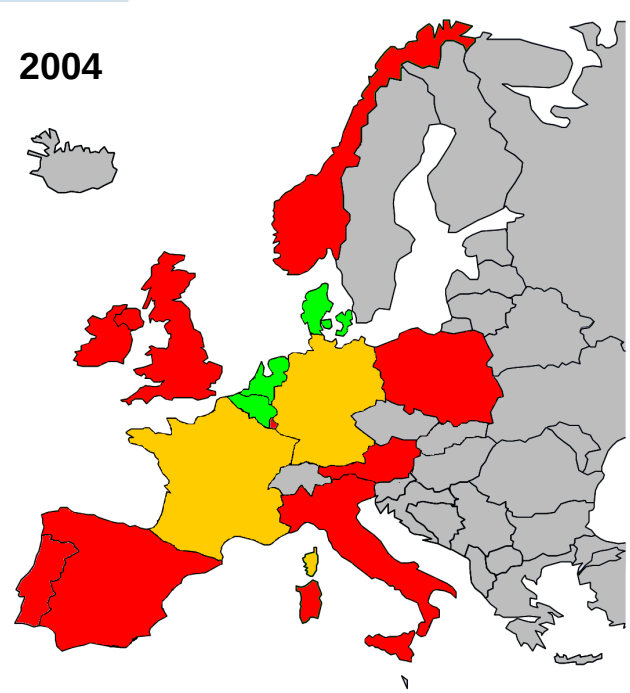
free of use and available for full gas industry

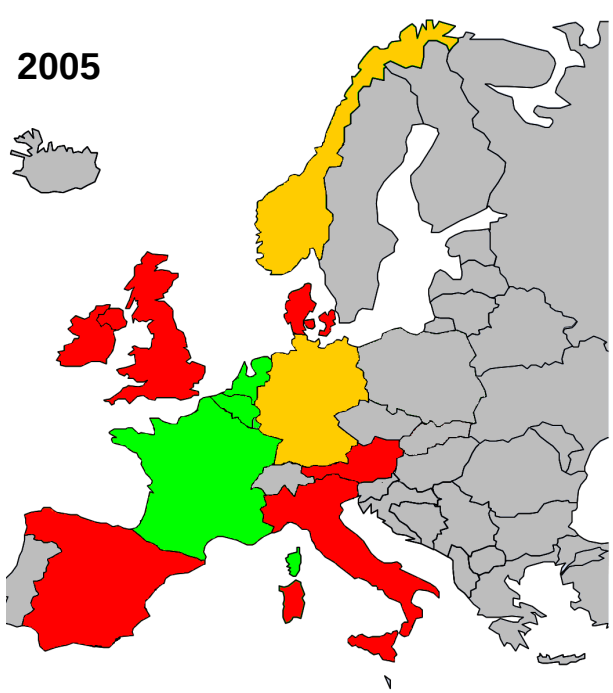
http://www.edigas.org/

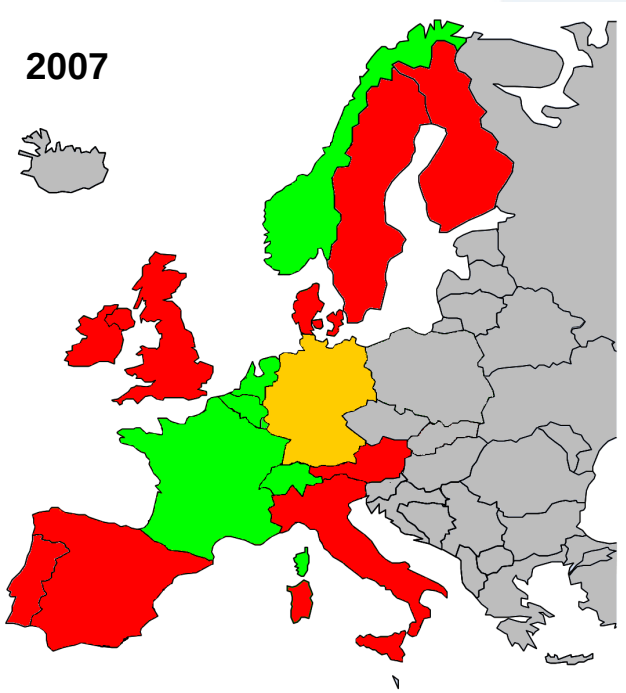
CBP Implementation Survey 2012

- Summer 2012 EASEE-gas conducted a survey on the status of implementation of CBPs
- 65 responses from 15 European Countries
- Feedback from all active EASEE-gas segments
- Full report available on EASEE-gas website

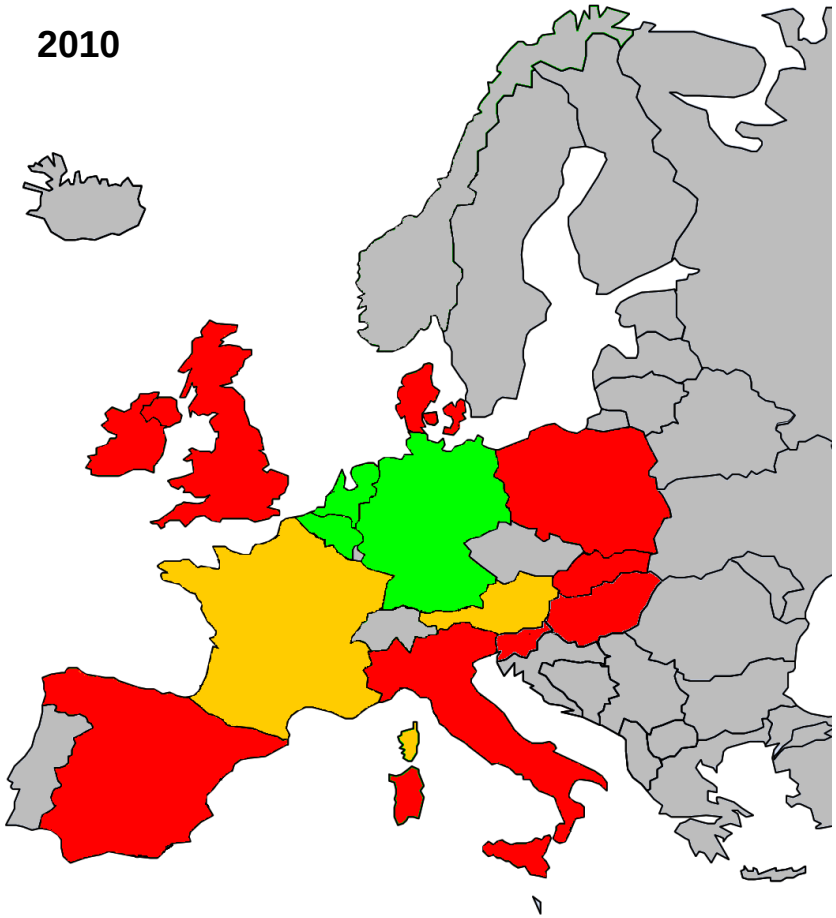
CBP implementation survey 2004-2005-2007

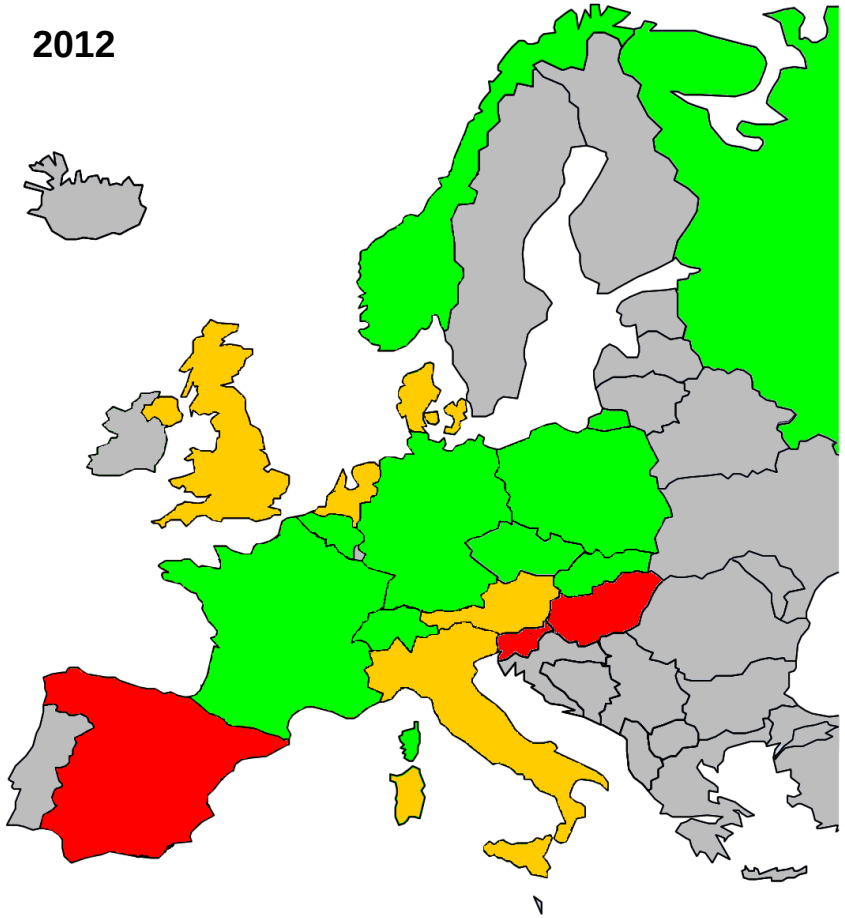






CBP implementation survey 2010 – 2012

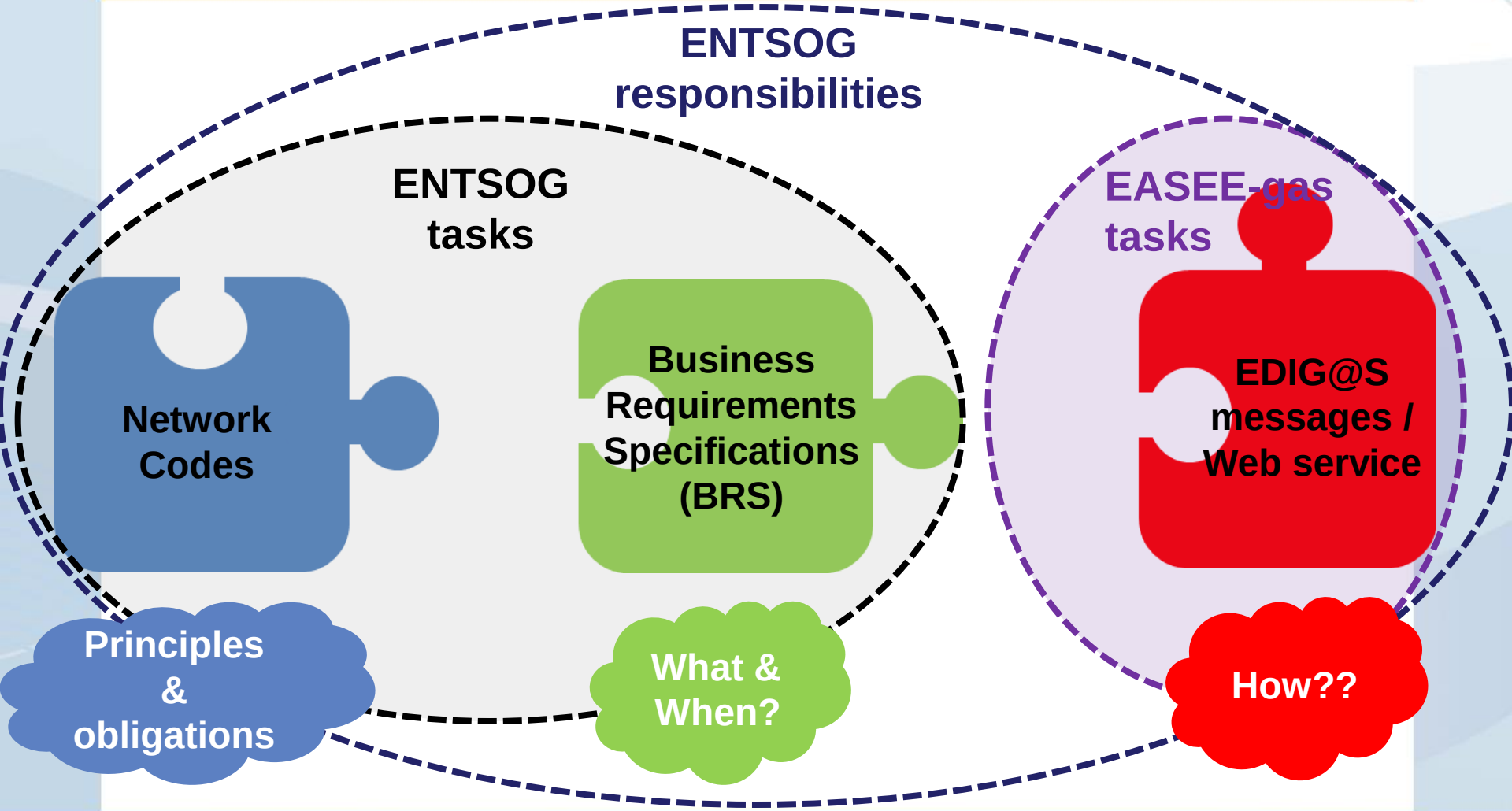




LoU ENTSOG – EASEE-gas (1/2)

- Kick-off meeting held on 31 October 2012
- EASEE-gas developed Edig@s-messages for CAM network code with input from ENTSOG under tight deadlines
- Procedure for messages to be finalised by ENTSOG is on-going

LoU ENTSOG – EASEE-gas (2/2)



Update & new Messages

- everybody can make a request to update or develop new business messages
- Change management procedure
  - business request to EDIG@S WG
  - reviewing task force
  - 1 => 6 months
- New business message
  - business request to EDIG@S WG
  - reviewing task force
  - 2 => 6 months

Future EDIG@S

- Good progress in implementing EDIG@S
- Edig@s Version 5 to come into effect in 2013

Thank you all for your attention !

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Data Exchange - Agenda

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Questions & Answers

Brussels – 23 April 2013

Thank You for Your Attention

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