

Cross-Border Intraday Market Project

1st User Group Meeting

Brussels, 25.11.2014





Agenda

TIME	AGENDA ITEM	PRESENTER
10:00 – 10:30	Registration, coffee	
10:30 – 10:50	Welcome, Introduction a. Vision b. Complexity and challenges c. Progress to date	Mark Pickles (TSO Project Manager)
10:50 – 11:05	Terms of Reference for User Group	Mark Pickles
11:05 – 11:35	Project Context a. Governance structure b. Three-layers project approach c. Overall plan (high-level plan) d. Local Implementation Projects (LIPS) e. Q&A	Katja Birr-Pedersen (Energinet.dk)
11:35 – 12:30	XBID Solution, Part 1 a. Overview b. SOB and CMM incl. explicit MP	Peter van Dorp (APX), Martine Verelst (Elia)
12:30 – 13:30	Lunch Break	
13:30 – 14:50	XBID Solution, Part 2 c. Shipping and nomination d. System performance e. Q&A	Katja Birr-Pedersen, Peter van Dorp
14:50 – 15:00	Coffee Break	
15:00 – 15:40	Feedback session a) Questionnaire b) Open Q&A c) Expectations for future User Group meetings	Oscar Tessensohn (TenneT B.V.)
15:40 – 16:00	Closing remarks a) Reflections on the day b) Outlook	Mark Pickles



Agenda

- 1. Welcome, Introduction
- 2. Terms of Reference for User Group
- 3. Project Context
- 4. XBID Solution
- 5. Feedback Session
- 6. Closing Remarks





Content

Welcome, Introduction

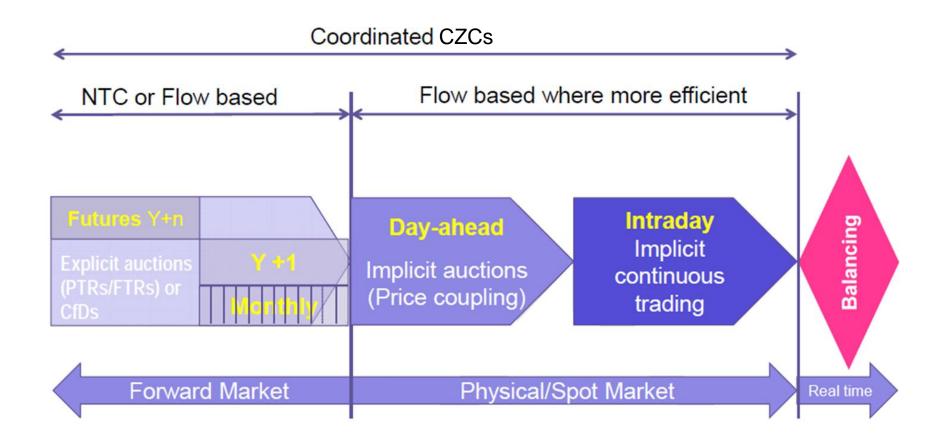
- a. Vision
- b. Complexity and challenges
- c. Progress to date

Mark Pickles

TSO Project Manager



CACM Target Model





Intraday – High Level Overview

Project objective:

"Establish a common cross border implicit continuous Intraday trading solution across Europe, where all the cross border capacities are allocated..."

Quote from Request for Offer (RFO)

Context:

 'Day Ahead' Market is coupled. Increasing level of renewables creates opportunities to integrate the market 'within day'

The first project phase delivers the "Interim Solution"

- This covers the countries/regions where the power exchanges and TSOs listed in slide 8 operate, but the ultimate goal is to roll out the solution across the whole of Europe
- Deutsche B\u00f6rse (DBAG the German Stock Exchange) has been selected as the IT solution developer/provider
- The 'Interim Solution' includes explicit access to the capacities on the borders where the regulators have approved such allocation

The IT solution consists of 2 main modules:

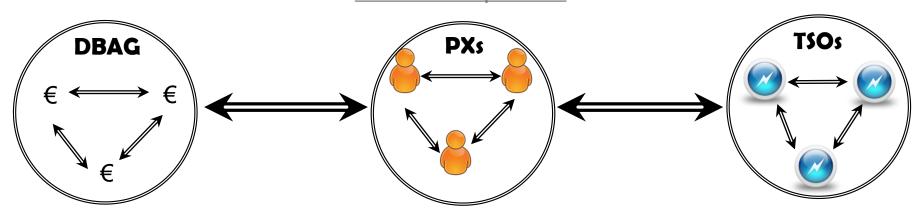
- SOB Shared Order Book
- CMM Capacity Management Module

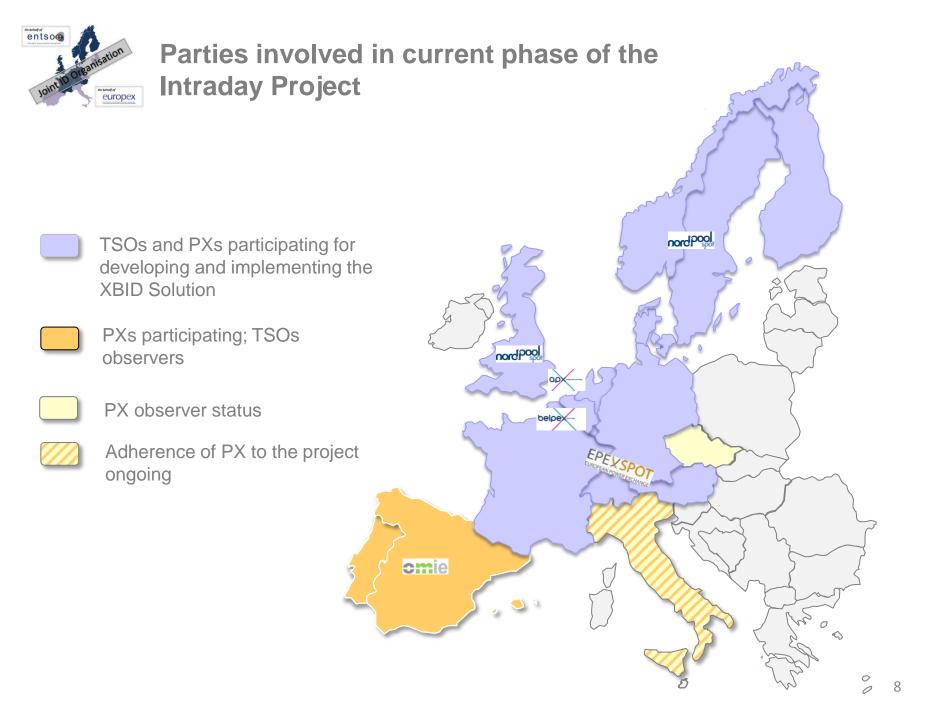


XBID Project

- Cross-Border Intraday Solution throughout Europe
 - XBID Solution
 - Trading Solution*
- Context
 - A common solution developed by 1 provider (DBAG)
 - Business requirements established by 4 PXs entities
 - A project supervised by 14 TSOs
 - Open to new members (PXs and TSOs)

Contractual position







Challenges for Delivering Intraday

Challenges

- Solution based on standard market product provided by DBAG
- Complex IT project. Main XBID solution and 'Front End' (Optional Trading Solution, OTS) are based on same platform but have different requirements
- Equal Treatment is essential with ownership/competitor context
- Demanding functional requirements
 - Capacity continuously updated
 - Rigorous security requirements
 - Wide range of products (15 & 30 minutes through to Block Orders)
- Settlement processes across multiple borders/multiple parties involved
- Detailed review of offered Solution and requirements has identified gaps
- Forecasting and future proofing for market development
 importance of performance



Key Project Milestones

	2012	2013	2014
Trading Solution Tender Phase	Sep	Jun	
ACER advise selection of DBAG		Jun	
Set-up/Budget		Jul Dec	
NRA's issue Letter of Cost Comfort			Jan
Early Start Agree- ment (ESA) Step 1 ¹			Jan May
ESA Step 2 Phase 1 ²			Jun-Jul
ESA Step 2 Phase 2 (Bus. Blueprint) ³			Aug Dec

¹ Step 1 delivered: The detailed project plan; Details of the plan deliverables; The quality plan and approach on areas such as testing & change management

² Step 2 Phase 1 delivered: The Fact Book

³ Step 2 Phase 2 enables the solution to be developed and delivers: The functional specifications (11 deliverables) for the modules, interfaces etc.; Agreement of contract with DBAG; Clarification on key areas such as system performance



Intraday Project Progress to date

- Project structure is in place with active participation of Power Exchanges and TSOs
- Joint Co-operation Agreement is in place between the Power Exchanges
- All Party Co-operation Agreement is in place between the Power Exchanges and TSOs
- Letter of Cost Comfort from NRAs.
- Regulatory reporting of all historic costs and monthly financial reporting
- Regular project interface with EC (Mr. K. D. Borchardt), ACER and Ofgem (as lead Regulator for this project)
- Early Start Agreement in place with DBAG
- Agreement reached on key areas such as Test Strategy
- Key areas such as system performance and equal treatment are being actively managed with extensive resource commitments from Power Exchanges, TSOs and DBAG
- Development Contract with DBAG is currently being negotiated



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External Stakeholder Engagement

We are establishing external interfaces with a wide range of stakeholders and have established a Communications Task Force

Interface	
AESAG	XBID updates provided to each meeting with open discussion and engagement
Implementation Group (IG)	Regular (quarterly) meetings with the NRAs and ACER. Detailed updates provided on the project as well as information on areas such as project financial expenditure. Review of project challenges and potential ways forward.
EC	Regular high level meetings to provide project updates to EC, lead NRA (Ofgem) and ACER
User Group	First User Group held today with proposed Terms of Reference. Further User Group meetings to be held at regular intervals.
For the future: User Forum	We plan to run large scale User Forums (circa 150-200 attendees) at key points in the programme



XBID User Group Terms of Reference

1/2

Objectives

Facilitate interaction between the project and a representative group of market participants during project duration, with the aim of:

- Explaining the status of the XBID project and planning
- Building knowledge and confidence in the proposed solution
- Providing stakeholders with the opportunity to provide feedback on key aspects of the project (for example, system performance)

Membership

- Membership is initially open to any interested parties, but the project may have to limit memberships in line with the desired composition
- The User Group shall consist of around 15 persons with representatives of different types of companies and different regions of Europe that are involved in this project
- Representatives are expected to attend meetings regularly
- Larger User Forum meetings will also be convened to share information with wide groups of stakeholders



XBID User Group Terms of Reference

2/2

Organisation

- User Group meetings to be organised on a regular basis, at least quarterly
- The User Group will be chaired by the project
- The draft agenda for the meeting is to be circulated to the members two weeks in advance

Transparency

- The list of members will be published
- All presentations presented during the meetings and minutes will be published by the XBID Project

Reimbursement

The members should bear their own costs



XBID User Group Terms of Reference Practical Points

- Minutes will be drafted for review within 1 week of each User Group taking place
- "Project Parties" will be referred to in the minutes (rather than individual names)
 - Should the same approach be applied for "market parties"?
- We will publish the draft minutes (with a 1 week review window) to invited attendees and, once finalised, will also circulate them to AESAG members
- The slides of the meetings will be sent to invited attendees as a PDF with the minutes
- The slides of the meetings and the minutes will be published on the PX's webpages
- Attendees can nominate a replacement to attend if they are unable to do so
- We will aim to provide dates of User Group meetings 1-2 months in advance



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Project Context

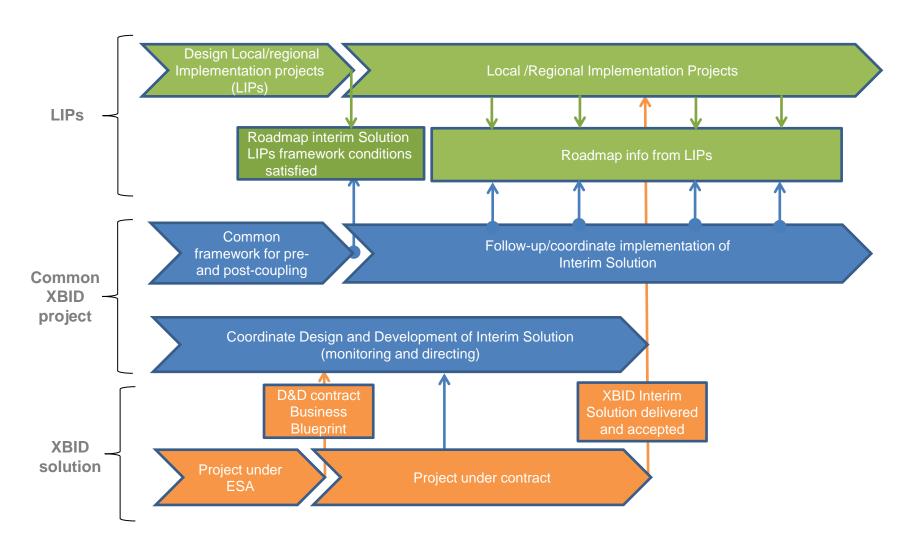
- a. Integrated project approach
- b. Governance structure
- c. Overall plan (high-level plan)
- d. Local Implementation Projects (LIPs)
- e. Q&A

Katja Birr-Pedersen

Energinet.dk

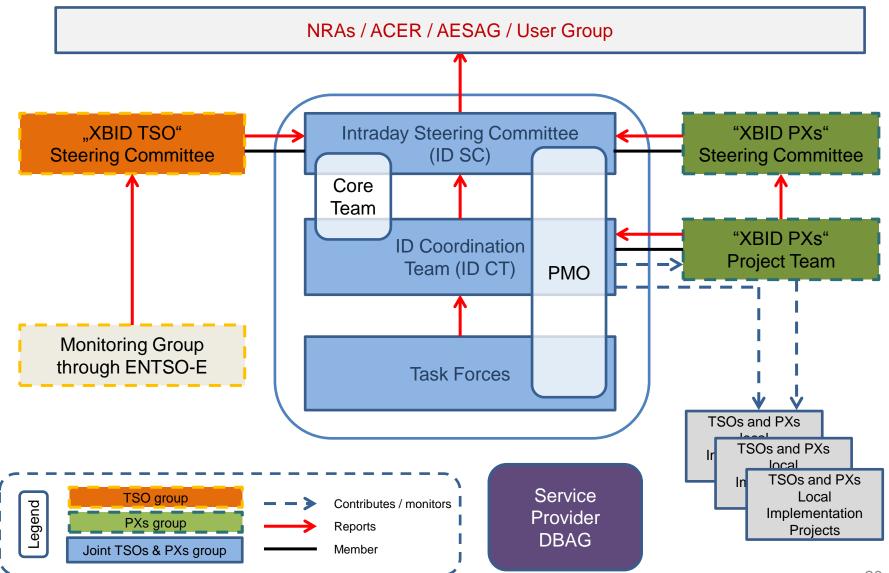


XBID Joint project approach – overview



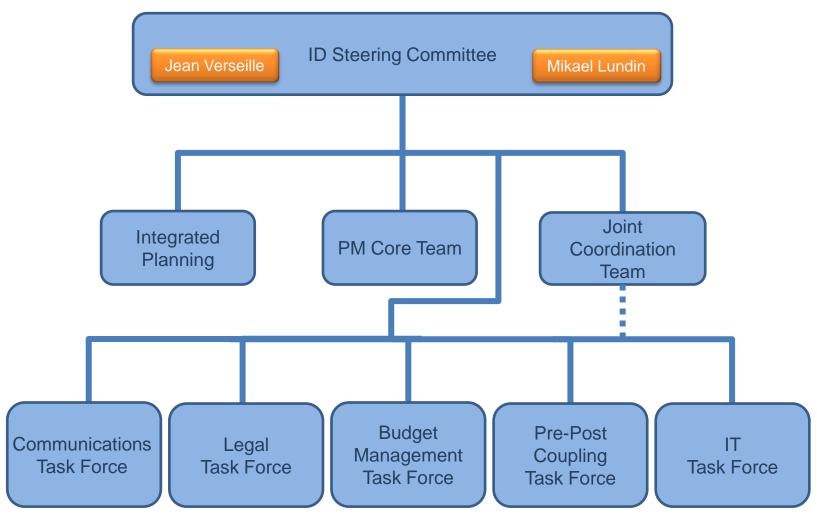


High Level Project structure and interfaces



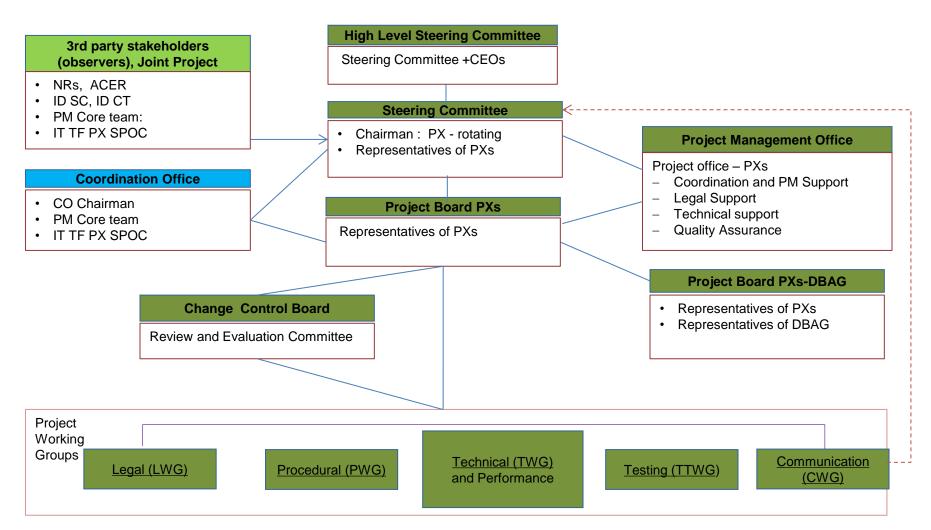


Joint Project structure and governance



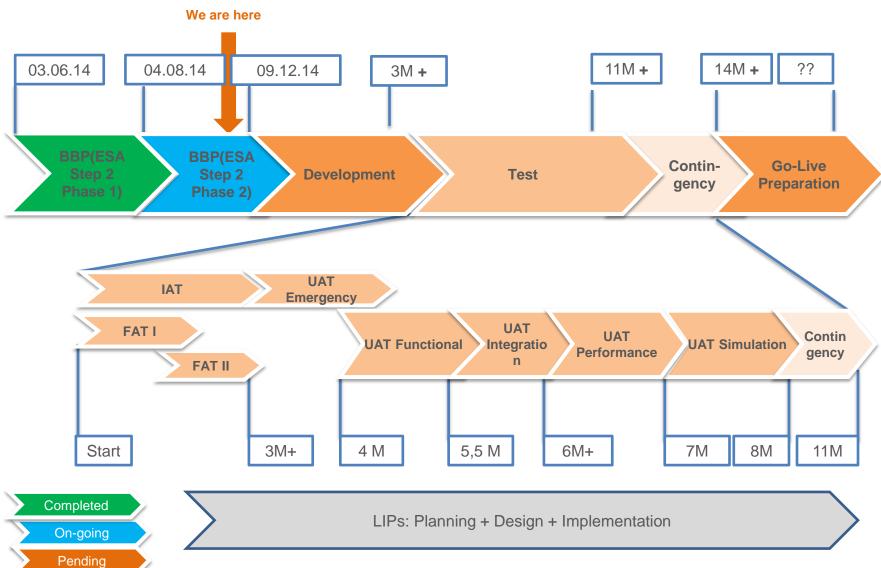


Power Exchange Structure





Tentative Project Timeline: June 2014 – Q4 2015





Local Implementation Projects (LIPs)

LIP consists of

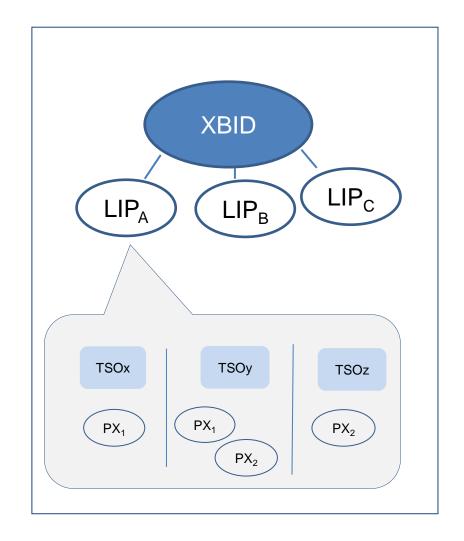
- One or more borders
- One or more TSOs
- One or more PXs

LIP's main tasks are:

- Adaptation of local arrangements
 - procedures
 - Shipping
 - Contracts
- Secure equal treatment
 - Between PXs
 - Implicit/explicit access
- Readiness for/participation in testing



Join the XBID Market platform for go-live!





Open discussion – Questions?





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4. XBID Solution

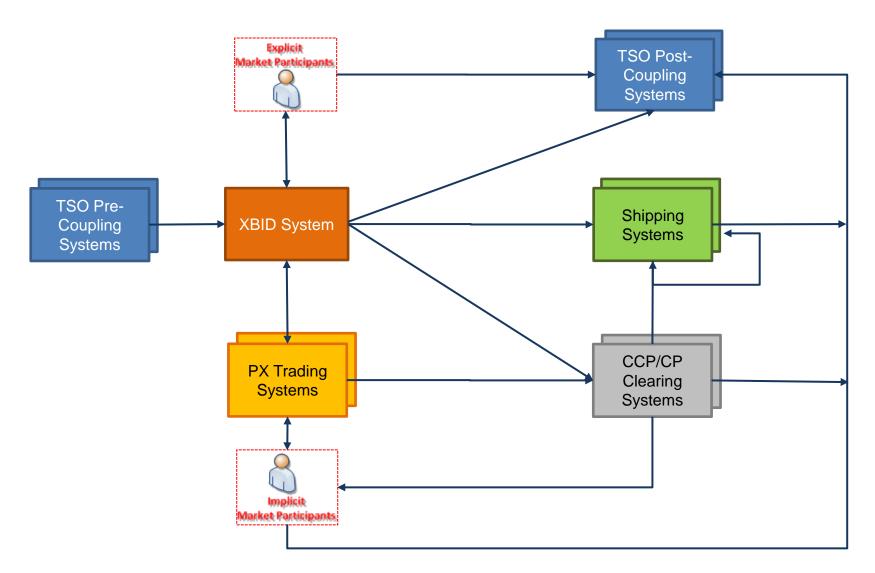
- a. Overview
- b. SOB and CMM incl. explicit MP
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Peter van Dorp

APX



Overview XBID - High Level Architecture





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4. XBID Solution

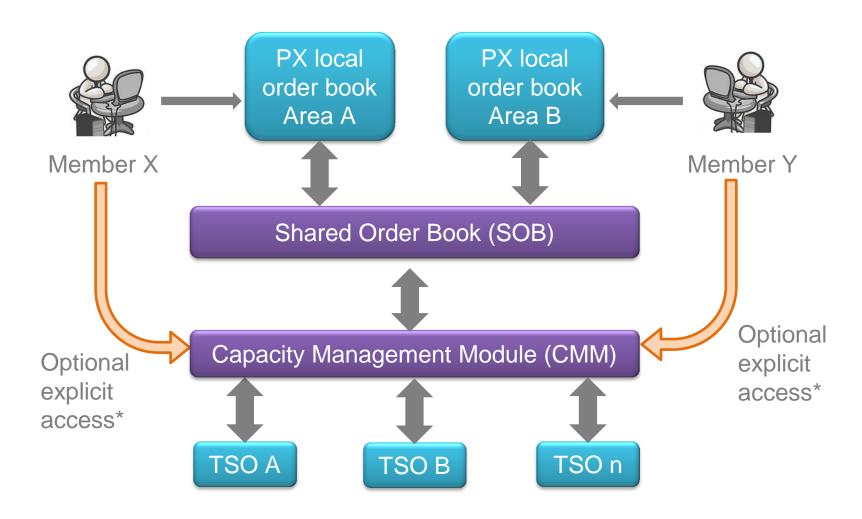
- a. Overview
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Peter van Dorp Martine Verelst

APX Elia



Market Participants' position within the XBID and TS solution



^{*} Depending on regulatory approval



Architecture – XBID Modules

SOB API (AMQP based Message Interface)

SOB

Matching

Order Execution

Capacity Routing

- Calculation order execution flow
- H2H matrix calculation.

Interface to Local Trading Systems

· Offers access to XBID

Order Book

 Calculation of the Local Views of Order Books

Capacity API (AMQP based Message Interface)

Capacity Management Module

Capacity Allocation

 Explicit and Implicit capacity allocation on border level.

Interface to TSOs

 Capacity Management Integration Application (CMI)

Inter-module API (AMQP based Message Interface)

Common Reference Data Module

- Maintain reference data required for the XBID system.
- Central access point for reference data required to operate XBID system.

Reporting Engine

- Generate and distribute reports.
- Runs independently from SOB and CMM modules.
- Flexible report generation schedules.



XBID - Markets



Market Area

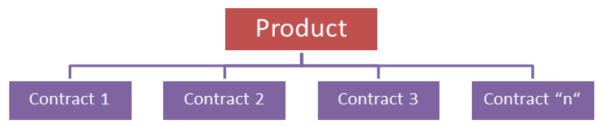
- Represents a 'price area' in the delivery grid
- Can contain one or more Delivery Areas
- Transport capacity between Market Areas is subject to congestion
- Typical Market Areas are grid areas on a national level.

Delivery Area

- Represents an area in the delivery grid which is managed by one TSO
- Order entry is into a Delivery Area (from which a bought commodity is received, or to which a sold commodity is delivered)
- Often, but not always, a Market Area will consist of a single Delivery Area



XBID - Products

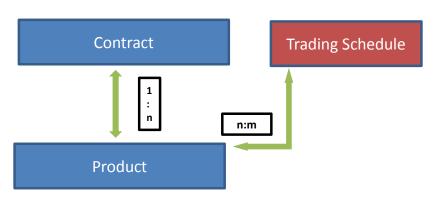


Product

- Represents one unique set of trading features (e.g. hourly product, an hour)
- Defines the guidelines for generating the underlying contracts

Contract

- An instance of a Product in time, an actual tradable instrument (e.g. the hour 11h-12h on 25 November 2014)
- With a predefined time of delivery
- Used by the trading member entities to enter into agreement to sell/buy a certain quantity
- Each product will have multiple contracts and each contract will belong to one and only one product.

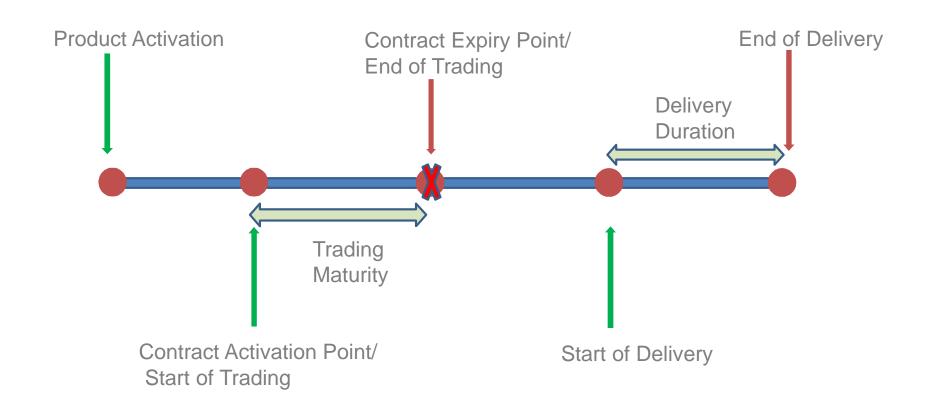


Trading Schedule

 Defines when a contract opens and closes for trading



XBID – Contract Life Cycle





Common vs. Local Products

Item	Common Products	Local Products
Managed in	XBID (SOB)	Trading System (TS)
Managed by	XBID Operator	TS Operator
Cross Border matching	Yes	Not applicable
Applicable for	Several configured areas of several PXs	For one PX and one area



XBID – Order Types

Order type	Execution Restrictions	Validity Restrictions	Predefined	User-Defined
Regular predefined	NON (None) IOC (Immediate-or-Cancel) FOK (Fill-or-Kill)	GTD (Good Till Date) GFS (Good For Session)	Yes	No
Regular user- defined block	AON (All-or-Nothing)	GTD (Good Till Date) GFS (Good For Session)	No	Yes
Iceberg	NON (None)	GTD (Good Till Date) GFS (Good For Session)	Yes	No
Linked Basket*	FOK (Fill-or-Kill)		Yes	No

^{*} Multiple orders can be submitted at the same time with a common attribute called basket execution instruction (BEI), which is valid for all orders. Either all orders in the basket are executed, or none.



XBID - SOB

SOB

- Enters orders into a public order book
- Matches orders against the most suitable counter-orders (following pricetime-capacity priority criteria)
- Initiates implicit capacity allocation

Price-time-capacity priority criteria

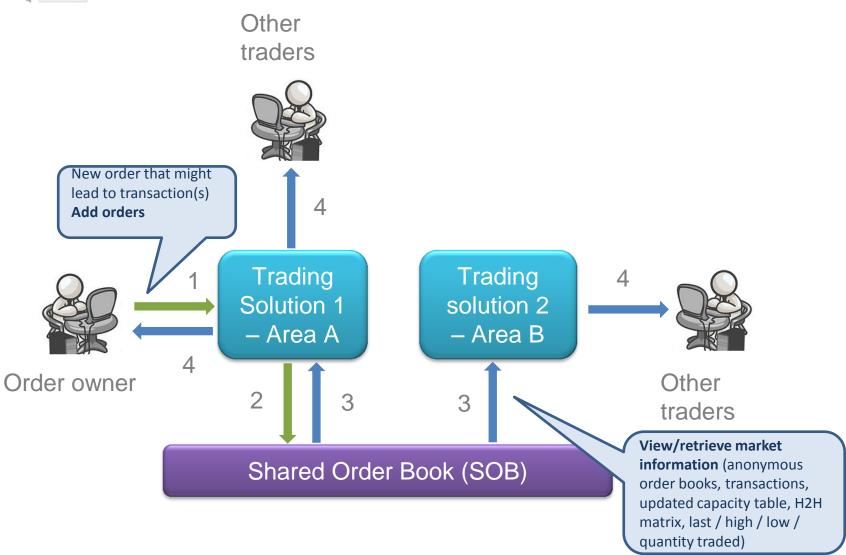
- Price: Orders are always executed at the best price
- Time: A timestamp (assigned at entry into SOB) is used to prioritize orders with the same price limit (earlier means higher priority)
- Capacity: Capacity should be available to make order execution possible

Order Book Views

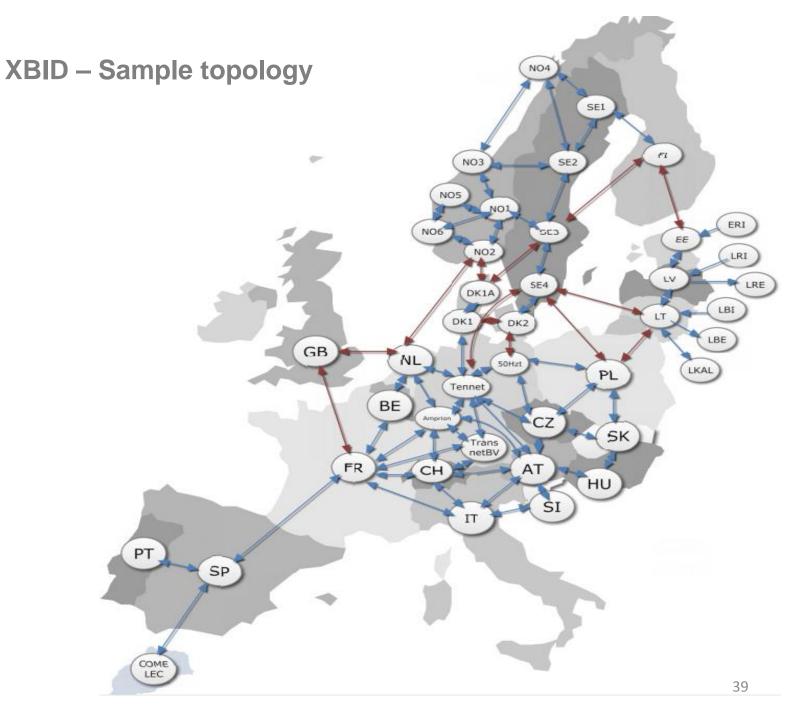
- The SOB maintains a single consolidated order book for all orders that are entered for a contract
- For each delivery area, a customised local view of the order book is made, which contains all the executable orders for the concerned area



XBID – Order Book Update









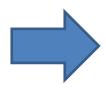
XBID – Local View Calculation

Order Book Calculation

- Local views will be enriched with cross-border orders if sufficient transmission capacity is available
- The same order can be displayed in multiple local views (depending on available transmission capacity)
- Cross-border orders in the local views will be displayed up to the available capacity;
 hence orders can be shown with partial volume
- An order is removed from all local views after full execution, deactivation or deletion
- Orders that cannot be executed in the selected area because of a PX dispute are not displayed

Rules for Order Book Calculation

- Orders from foreign markets are selected based on available capacity and price-timepriority
- Iceberg orders are displayed with their visible quantity and not with their total quantity
- AON orders can only be displayed with full quantity



Traders cannot tell in which area the orders that they see in their local order book were entered



XBID – Cross Border Routing

Routing

- Transportation of power via the delivery grid requires a calculation of a route (sequence of delivery areas) through the power network
- Whenever multiple routes exist, the shortest path rule is applied to define the outcome of the routing process

Routing calculation is done for:

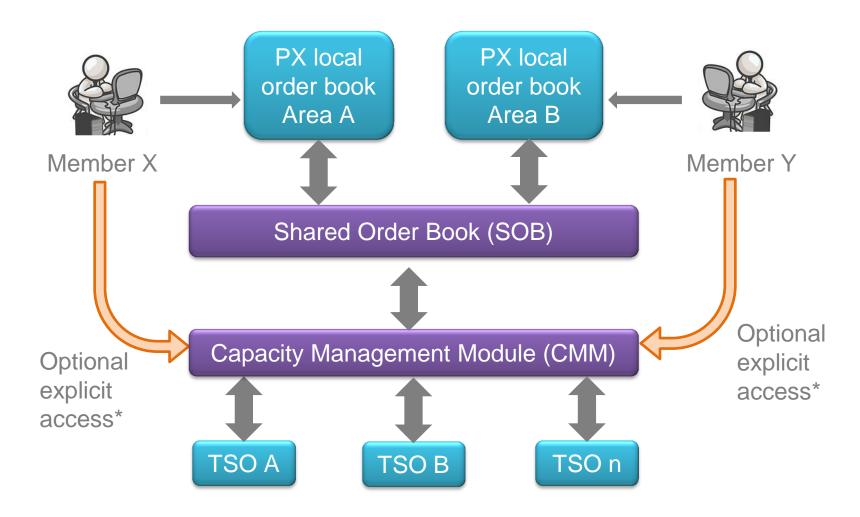
- Order Book Calculation
- Trade Flow Calculation

Shortest path rule:

- If more than one route with sufficient ATC is available, the shortest route (smallest number of delivery areas) is select
- When the capacity of the first best route is depleted, the remaining quantity will be routed via the next best until either the full quantity has been transferred or no more routes with a positive ATC are available
- If more than one route fulfils the shortest path criteria, it is not specified which one is selected by the system (so the system selects any one path)



XBID CMM



^{*} Depending on regulatory approval



XBID – CMM Introduction

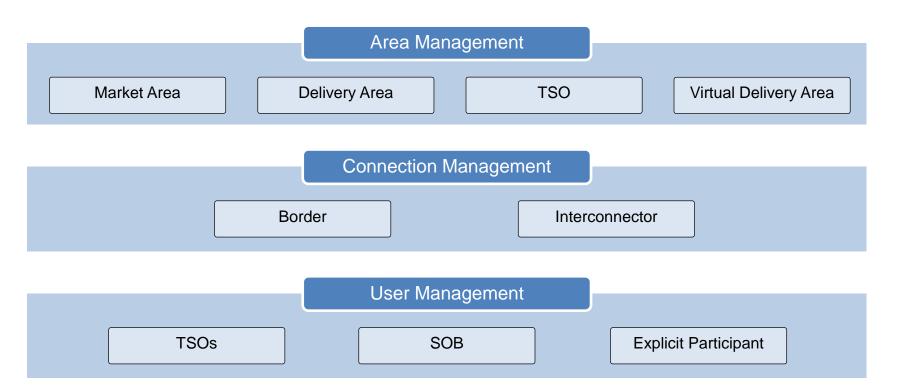
The **Capacity Management Module** is a web-based solution offering the following features:

- No specific software installation necessary
- 24/7 access to the service
- Continuous, anonymous explicit and implicit allocation of network capacity
- Direct connection to the XBID Trading Module for implicit allocation of network capacity
- Public Message Interface for explicit trading



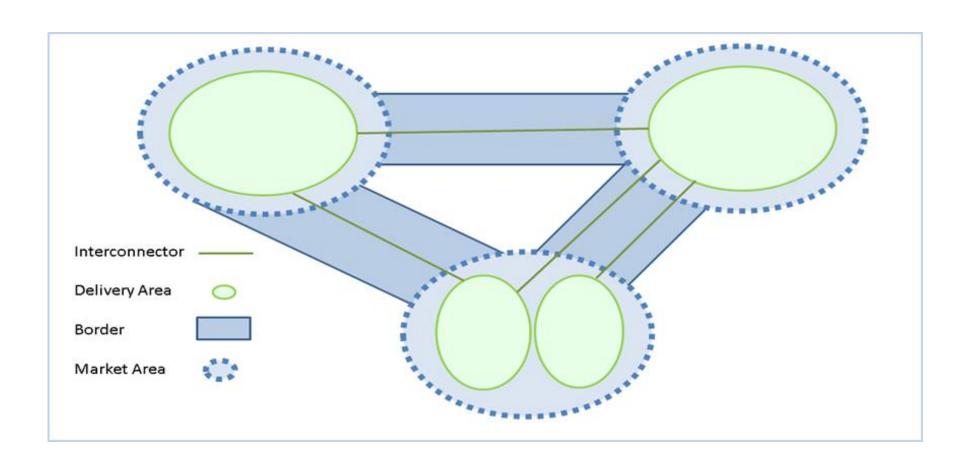
XBID – CMM Entities

CMM supports separate (independent) configuration and administration of each functional entity:





Borders and Interconnectors





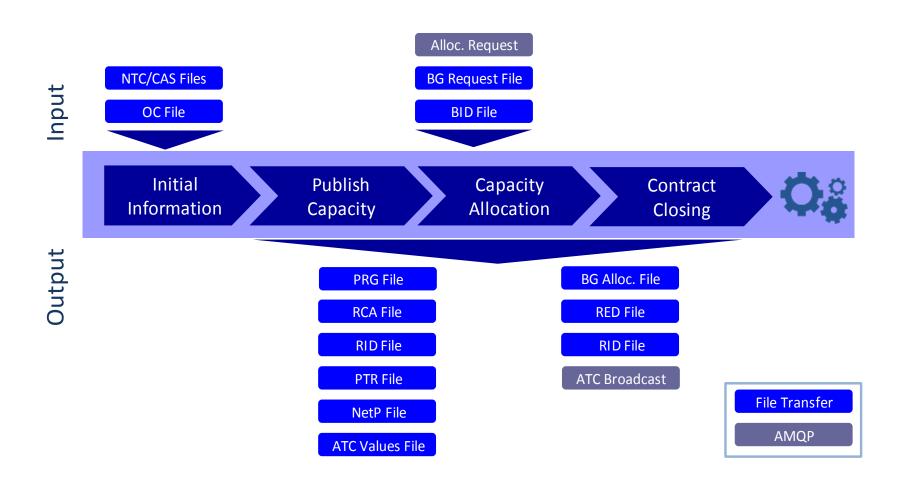
Validity, etc

XBID – CMM Borders with multiple Interconnectors

Separate Configuration per Interconnector betheer tho Alegs. Aconstion Opening and Closing Time, Capacity Resolution, • Default Capacity, · Ramping, Validity, etc Common Configuration per Border Common ATC, Leading TSO,



XBID – CMM Functional Overview





XBID – CMM Pre-allocation

Capacity Information is provided by TSOs

- GUI
- Email
- SCP
- ECP

Capacity Calculation by CMM

- NTC and CAS vs. OC
- Ramping Constraints

Capacity Publication

- Automated or Manual
- Configurable per Border/Interconnector
- Default Capacity
- H2H Matrix Creation/Update

Border Opening

- Configurable per Border/Interconnector
- Capacity Release for Allocation
- H2H Matrix Update



XBID – CMM Allocation

Implicit Allocation

Triggering Events:

- Matching
- Transaction
 Confirmation/
 Cancelation

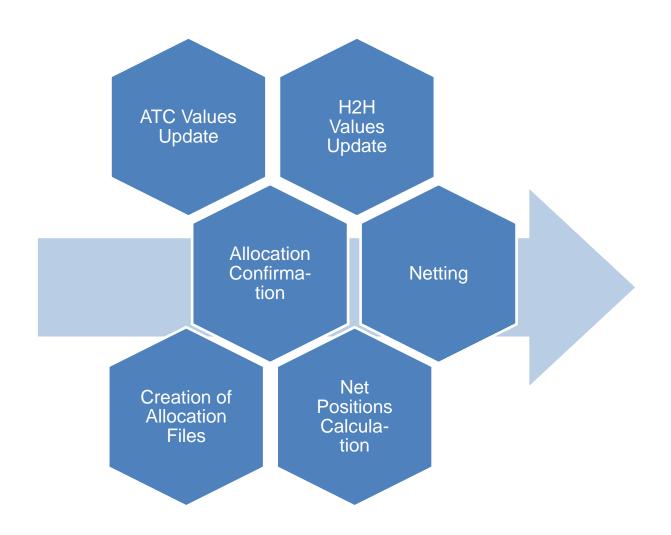
Explicit Allocation

Triggering Events:

- Request over GUI
- Request over CMM PMI



XBID – CMM Post-Allocation





Open discussion – Questions?





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Content

4. XBID Solution

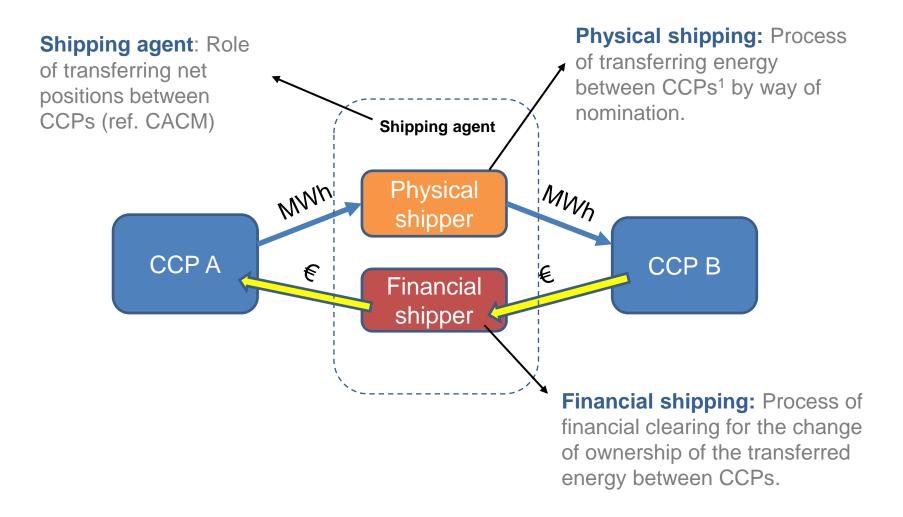
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Katja Birr-Pedersen

Energinet.dk



What is Shipping and Nomination (S&N)?

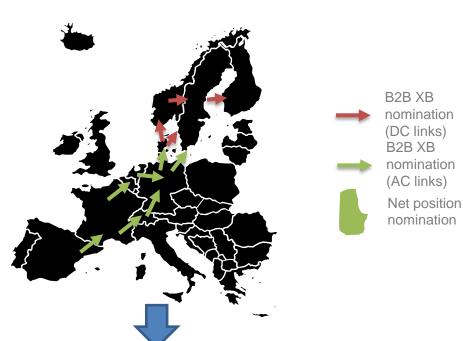


¹ Or local equivalents, e.g. Clearing Party in the Iberian Market



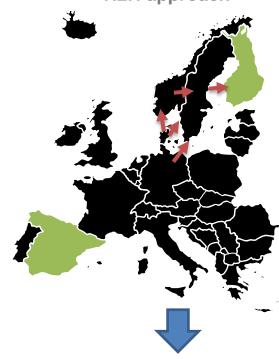
Interim vs. enduring S&N Solution

Physical shipping B2B approach



- XB nomination of allocated capacities on each border of the transfer path between the CCPs.
- Current Day-ahead approach

Physical shipping H2H approach



- XB nomination of allocated capacities across borders of the transfer <u>without a path</u> between the CCPs.
- Based on future "scheduling in net position principle"
- B2B approach still supported on defined borders



Issues considered in choice of interim S&N Solution

Time to market

Expected go-live date: **Q4 2015**!

- Only extension of current DA shipping agreements considered possible until Q4 2015!
- Implementing central shipping function would take min. 1 year longer

Change request required



- For the interim solution, only a single Change Request to XBID systems is required to support multiple shippers per border.
- For the enduring solution, additional CRs are required.

Operational robustness



- Higher risk of trade interruption because of B2B nomination process
- => TSOs to nominate "on behalf of" CCPs by taking XB scheduling information directly from XBID



Summary S&N solution

• Interim shipping solution has been decided and is based on dayahead principles, i.e. local shippers on each border, however...

• Robustness is enhanced through TSOs undertaking XB nominations on behalf of shippers, where possible.

 Due to time constraints a more robust enduring Shipping & Nomination (S&N) solution is postponed but will be further discussed in 2015.



Open discussion – Questions?





Content

4. XBID Solution

- a. Overview
- b. SOB and CMM incl. explicit MP
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- e. Q&A

Peter van Dorp

APX



XBID performance

- Performance was among the key required features of the new XBID solution in the Request For Offer (RFO)
- All parties agreed that the XBID solution must be able to process peak loads in hourly orders, block orders, and explicit capacity requests without breaking down, malfunctioning or becoming unresponsive
- The challenge was (and still is): how to quantify and measure this?



Quantification & measurement challenge

- What topologies assumed (current, at go-live, after go-live)?
- What product range assumed across these topologies?
- What order and trade volumes?
- What peak size and duration?
- What peak distribution?
- How to define 'unresponsive'?



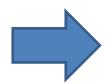
The RFO requirements specified:

- For non-block instruments, block instruments, and explicit capacity requests separately:
 - Number of orders (requests) and transactions (allocations) per day
 - Number of transactions (allocations) per second during peak-load moments
- For these numbers:
 - The maximum acceptable response times ...
 - for three distinct topologies ...
 - for 95% of the cases …
 - on several sets of system operations and screen refreshes



The RFO requirements did not specify:

- How to combine non-block instruments, block instruments, and explicit capacity requests
 - As these interfere, combining them deteriorates performance inevitably.
 Response times were required for each type separately, but no indication was given for their combination.
- Assumed peak duration
- Whether or not the peaks coincide across types and across hubs
- The maximum acceptable response times for the last 5% of the cases (only the first 95% were specified)
- Several details of the topologies (notably differentiation in hub size)
- How capacity restrictions would increasingly limit cross-border trading as a result of congestion
- How ramping constraints should be taken into account



These are not details, but crucial elements with a major performance impact



Realistic Test Scenario (RTS)

- Because of the perceived gaps in the requirements the PXs agreed to define a realistic test scenario
- This RTS modelled a busy hour on busy day
- Based on confidential market data, it specified:
 - Number of hubs (42) and three hub sizes (S-M-L: 30-6-6)
 - Number of connections (72)
 - Product range (1hr, blocks of 2h, 4h, 7h, 16h, 24h)
 - Number of orders per product, price range, initial market depth
 - Congestion and ramping patterns
 - Test duration (1h), number of peaks (2), peak duration (2sec and 5min)
 - Orders per peak (approx. 200/sec during 2sec peak)
- The expected test outcome was a set of maximum response times for 95%, 99.5% and 100% of the cases



The RTS did not specify:

- Whether peaks coincide across products and across hubs
- Number of instruments per product
- Realistic price distribution over buy and sell orders

This led to unrealistic test characteristics:

- All peaks coinciding, causing extreme system load
- Exceptionally high number of different instruments ('contracts'), deteriorating performance
- Flows continuously changing direction due to the random distribution of prices, resulting in:
 - no congestion, so very high percentage of cross-border trades
 - very high number of auctions (used to solve crossed order book situations)



RTS results

- RTS was run by DBAG and yielded unacceptable results (e.g. up to 2 minutes for order entry feedback during the 2sec peak)
- This was identified to be partly due to the unrealistic input assumptions
- This is why the PX decided to adjust the input assumptions to produce an improved RTS
- In addition, DBAG proposed three sets of performance improvement measures, for implementation at go-live, after go-live and in the more distant future respectively



Features of the improved RTS

- Non-block, block and explicit request peaks do not coincide; not all non-block peaks coincide
- Order price distribution will be normal (i.e. around DA prices), so that congestion will limit cross-border trading and not many auctions will be triggered
- Far fewer block instruments of the same type will be created



These adjustments will make the RTS much more realistic and improve its results significantly (but quantification only possible after test execution)



DBAG-proposed improvements

- Code and hardware tuning (at go-live)
- Calculation of local order book views with reduced depth and reduced frequency (at go-live)
- Fast markets (resort to auctions at peak moments; after go-live)
- Advanced processor types (future)
- Adaptation of the system architecture (future)
- Introduction of non-persistent orders (future)



Current state of affairs

- Performance specification and measurement is notoriously difficult.
 The steps taken with the RFO and RTS all contributed to increased accuracy
- There may still be some unrealistic assumptions with a negative performance impact in the improved RTS, due to the commercially sensitive nature of the data and the fact we are dealing with future markets in part
- Analysis and testing is ongoing, but it seems likely that with the improved RTS described above and the improvements DBAG proposed for go-live the XBID system can be shown to be sufficiently performant for a 2 year period as a minimum
- The outcome of a sensitivity analysis may suggest restrictive measures to take, such as limiting the number of complex products or large blocks, or limiting the volume of individual blocks
- DBAG described further performance enhancement measures, which can be applied after go-live to keep up with the expected increase of traded volume, the product range offered and expansion of the coupled region

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Open discussion – Questions?





Content

4. XBID Solution

- a. Overview
- b. SOB and CMM incl. explicit MP
- c. Shipping and nomination
- d. System performance
- e. Q&A



Open discussion – Questions?





Agenda

TIME	AGENDA ITEM	PRESENTER			
10:00 – 10:30	Registration, coffee				
10:30 – 10:50	Welcome, Introduction a. Vision b. Complexity and challenges c. Progress to date	Mark Pickles (TSO Project Manager)			
10:50 – 11:05	Terms of Reference for User Group	Mark Pickles			
11:05 – 11:35	Project Context a. Governance structure b. Three-layers project approach c. Overall plan (high-level plan) d. Local Implementation Projects (LIPS) e. Q&A	Katja Birr-Pedersen (Energinet.dk)			
11:35 – 12:30	XBID Solution, Part 1 a. Overview b. SOB and CMM incl. explicit MP	Peter van Dorp (APX), Martine Verelst (Elia)			
12:30 – 13:30	Lunch Break				
13:30 – 14:50	XBID Solution, Part 2 c. Shipping and nomination d. System performance e. Q&A	Katja Birr-Pedersen, Peter van Dorp			
14:50 – 15:00	Coffee Break				
15:00-15:40	Feedback session a) Questionnaire b) Open Q&A c) Expectations for future User Group meetings	Oscar Tessensohn (TenneT B.V.)			
15:40 – 16:00	Closing remarks a) Reflections on the day b) Outlook	Mark Pickles			



Agenda

- 1. Welcome, Introduction
- 2. Terms of Reference for User Group
- 3. Project Context
- 4. XBID Solution
- 5. Feedback Session
- 6. Closing Remarks





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Feedback Session

- a. Questionnaire
- b. Open Q&A
- c. Expectations for the future User Group meetings

Oscar Tessensohn

TenneT B.V.



Questionnaire (1/2)

- 1. Did you have any knowledge of the XBID Project prior to attending the User Group meeting?
 - Yes, significant knowledge
 - Yes, but minor knowledge
 - No

If you did, can you specify where you received this information?

2. Please rate today's User Group meeting (5 is the highest score)

	1	2	3	4	5
Quality of the presenters					
Quality of the workshop material					
The User Group meeting helped me					
increase my understanding of the					
XBID Project					
The location of the meeting and the					
meeting room was satisfying					
Overall impression					

Do you have any further comments about today's User Group meeting?



Questionnaire (2/2)

- 3. Is there anything that you believe should have been included in the material? Do you feel anything of the material discussed should have been explained further?
- 4. Can you make any suggestions to improve future User Group meetings?
- 5. What should be the focus of forthcoming User Group meetings?
- 6. What are your biggest concerns related to the XBID Project?
- 7. What are the biggest challenges/changes in your organisation prior to the implementation of the XBID initiative?
- 8. Other final comments or questions?



Expectations for the future User Group meetings

- a. Suggested Topics?
- b. Style/Format?
- c. Frequency of meetings?
- d. Size of the group?
- e. Other comments?



Agenda

- 1. Welcome, Introduction
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Content

Closing remarks

- a. Outlook
- b. Reflections on the day

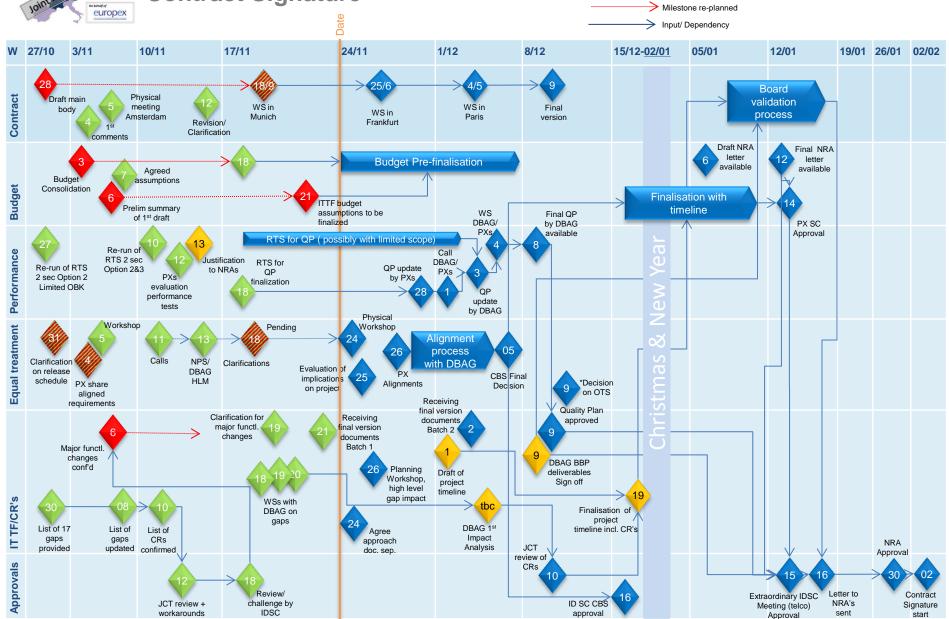
Mark Pickles

TSO Project Manager

In Committee of the larger of

Integrated Plan: Critical Path for Contract Signature







XBID Outlook (1/2)

- We are managing a challenging plan to deliver Contract signature
- Where are we now:
 - Detailed negotiations on the Development Contract with DBAG are ongoing.
 Weekly workshops are taking place to resolve outstanding issues.
 - The Business Blueprint phase is due to be completed by mid-December.
 Good progress is being made and this is on target.
 - A considerable number of 'gaps' have been identified in this phase.
 - DBAG need to complete the impact assessment of these gaps so that the cost and timeline impacts are included in the budget/project plan.
 - System performance continues to be a key area of focus. A further refined Realistic Test Scenario is going to be run.
 - DBAG have proposed a range of options to improve performance some of which will be implemented before go-live whilst others will be considered after 'go-live'.
 - There is a possibility that some of the changes could require full separate code base which would be a significant change to the project.



Reflections on the day – Closing Remarks

- There is a continued focus on equal treatment. Clarification workshops are being held with DBAG and we aim to reach alignment amongst the PX's and with DBAG in early December.
- We have reviewed the Eurelectric Quick Wins in detail and continue to try to balance resources/priorities and minimize risks to the project.
- Local Implementation planning is at an early stage and we will focus on this in detail during the Development phase.
- We envisage finalizing the budget and timeline by mid-January so that we can provide the NRA's with the confirmed project cost and timeline.
 - It is a condition of the Letter of Cost Comfort that we provide this information before signing the Development contract with DBAG.
- Intraday is a very challenging project due to a wide range of factors including complexity of the IT Solution and functionality required.
- The project is on a firm footing and we are demonstrating that we can make progress in spite of the extensive challenges. The commitment to the project is evident by the resources and attention committed to it.



Thank You for coming

A safe journey home.....

