XBID Cross-Border Intraday Market Project

2nd User Group Meeting

Brussels, 28.04.2015

On behalf of entsoe

Supported by europex

TIME	AGENDA ITEM	PRESENTER
10:00 – 10:30	Registration, Coffee	
10:30 – 10:35	Welcome, Agenda	Mark Pickles
10:35 – 10:50	Project Status a. Project Context b. Progress since last User Group Meeting c. NRA Delivery Package	Mark Pickles
10:50 – 11:30	Update on key aspects of the XBID Solution a. Agreed additional functionalities b. Performance: commitments and measures	Peter van Dorp
11:30 – 12:00	Detailed Project Planning a. High Level Delivery Plan until Go-live b. Testing Overview	 Mark Pickles Matthieu Neauport/ Eeva Harjukoski
12:00 – 13:00	Market Parties Perspectives	André Estermann
13:00 – 13:45	Lunch Break	
13:45 – 14:10	Local Implementation Projects – Overview a) Overview of LIPs b) Scope and Deliverables c) Interaction XBID and LIP Planning d) Next steps	Martine Verelst
14:10 – 15:00	Local Implementation Projects – Details a) LIP Kontek b) LIP BE-NL c) LIP Nordic	 André Estermann Martine Verelst Tore Granli
15:00 – 15:15	Coffee Break	
15:15 – 15:50	Local Implementation Projects – Details d) LIP IFA e) LIP FR/DE/AT/CH	 Bhavesh Suthar Jens Axmann
15:50 – 16:00	Closing remarks, Reflections on the day	Mark Pickles

1. Project Status
2. Update on key aspects of the XBID Solution
3. Detailed Project Planning
4. Market Parties Perspectives
5. Local Implementation Projects – Overview
6. Local Implementation Projects – Details
7. Closing remarks, Reflections on the day

Project Status

a. **Project approach**
b. **Progress since last User Group**

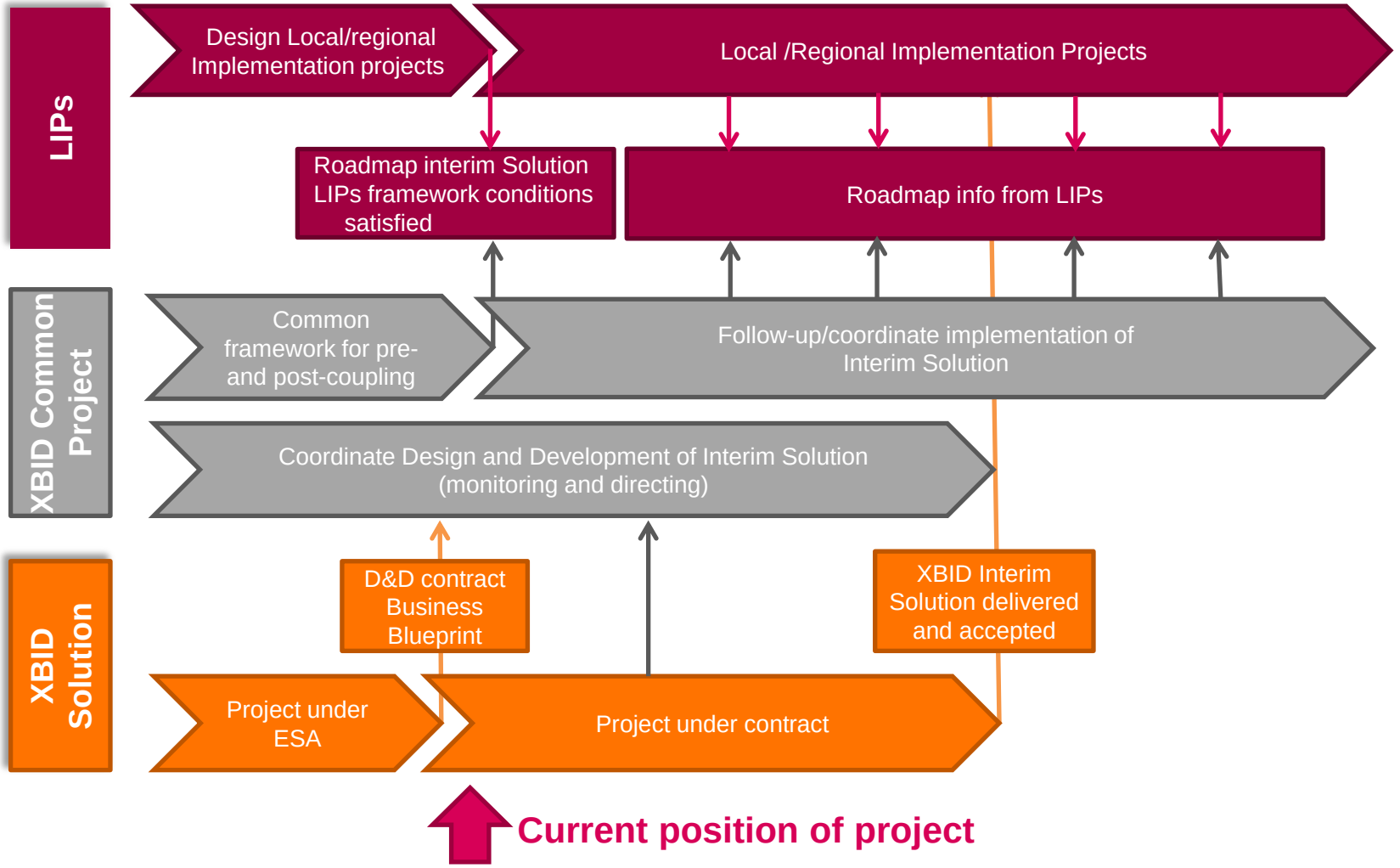
Mark Pickles

TSO Project Manager

Convenor Communications TF & Integrated Planning Team

a. Project Approach

Delivery of XBID involves 3 areas of distinct focus



b. Progress since last User Group

- Key achievements:
  - Completion of the Business Blueprint ✓
  - Confirmation of XBID system functionalities required ✓
  - Resolution of blocking issues ✓
  - Conclusion of legal and business contract negotiations with service provider, DBAG ✓
  - Completion of budget ✓
  - Agreement of project timeline ✓
  - Submission to NRAs requesting cost comfort – 27th Feb ✓
  - Principles of cost recovery received from ACER – 9th Apr ✓
  - TSOs provided PXs with assurance of cost recovery/sharing – 14th Apr ✓
  - All PXs confirmed readiness to sign contract with DBAG ✓
  - Contract signature process due to commence next week

Some of the challenges we have managed to a successful conclusion

Equal Treatment

Essential in competitor and owner context. Equal treatment charter agreed and also the 'local view' calculation of the trades will be completed within the main XBID solution only rather than the Local/Optional TS's.

Contract

Closing the contract and concluding legal negotiations has proved particularly challenging. Issues such as liabilities, remuneration, formal recognition of the role of TSOs etc. have proved complex.

Challenges resolved

Code Base Separation

This has been agreed with DBAG and will mean a greater level of separation between DBAG's standard trading product and XBID. This will provide greater flexibility in adapting XBID to CACM etc.

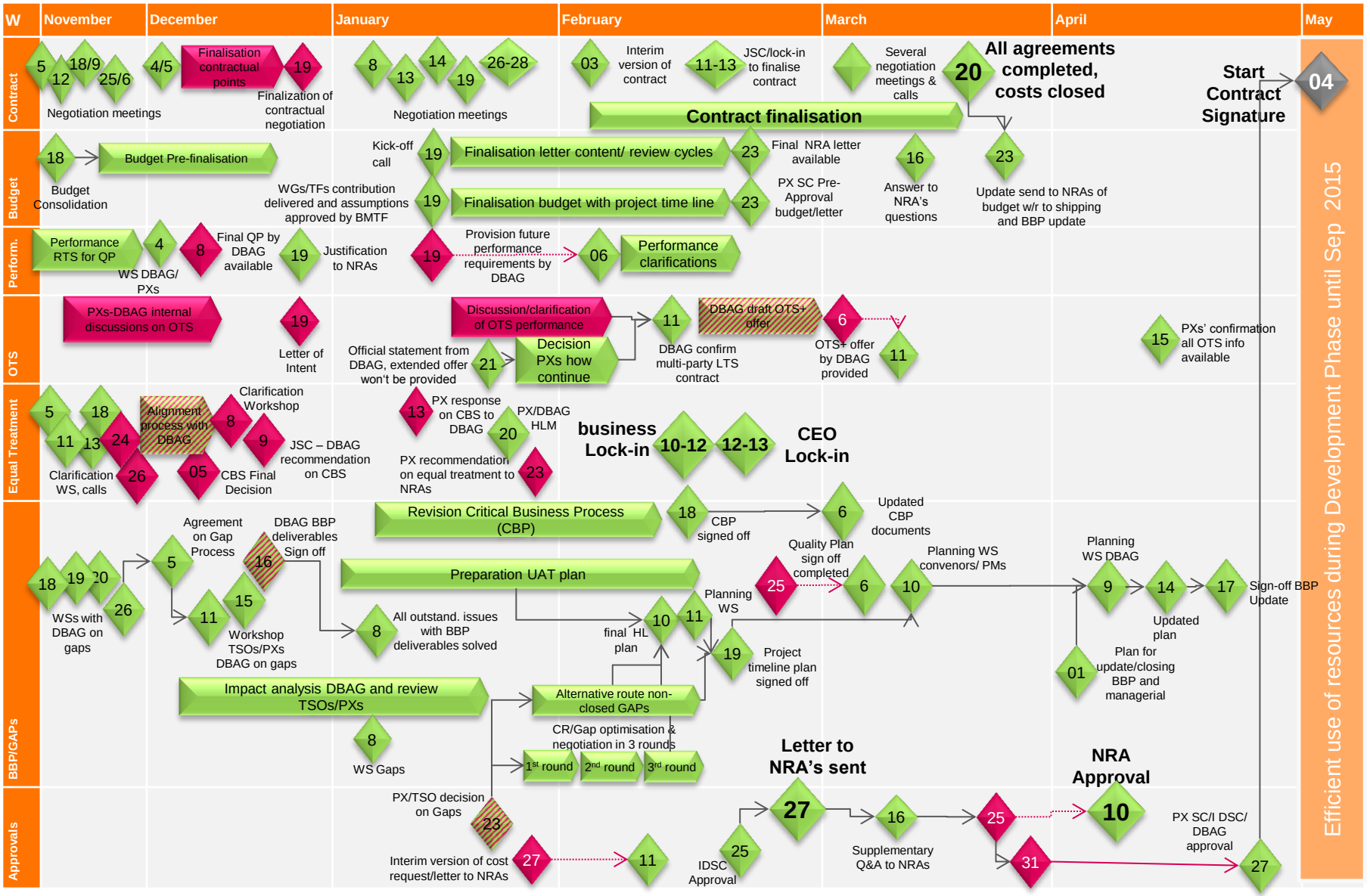
Performance

DBAG have provided a commitment to a maximum response time for the 2 second peak of the realistic test scenario.

Progress since last User Group – a little more detail

- The Business Blueprint was concluded in December
  - Process brought clarity in many areas
  - Led to identification of additional functionalities that needed to be included
- Successful CEO Lock-In held mid-February to resolve outstanding issues
  - Alignment reached on all critical issues including performance, front end trading solutions and code base separation
  - Lock-In was facilitated by Heinz Hilbrecht (former Director of DG Energy)
- Transitional Phase (Jan-Mar)
  - Management of outstanding issues
  - Conclusion of Legal negotiations
  - Confirmation of budget and timeline
- Contract
  - Negotiations were very challenging, but successful
  - PXs confirmed it could be signed after principles on cost comfort were provided by the NRAs and subsequently from the TSOs to the PXs

Integrated Plan: Progress made since last User Group meeting



1. Project Status
2. Update on key aspects of the XBID Solution
3. Detailed Project Planning
4. Market Parties Perspectives
5. Local Implementation Projects – Overview
6. Local Implementation Projects – Details
7. Closing remarks, Reflections on the day

Update on key aspects of the XBID Solution

a. **Additional functionalities**
b. **Performance: commitments and measures**

Peter van Dorp

APX/Belpex

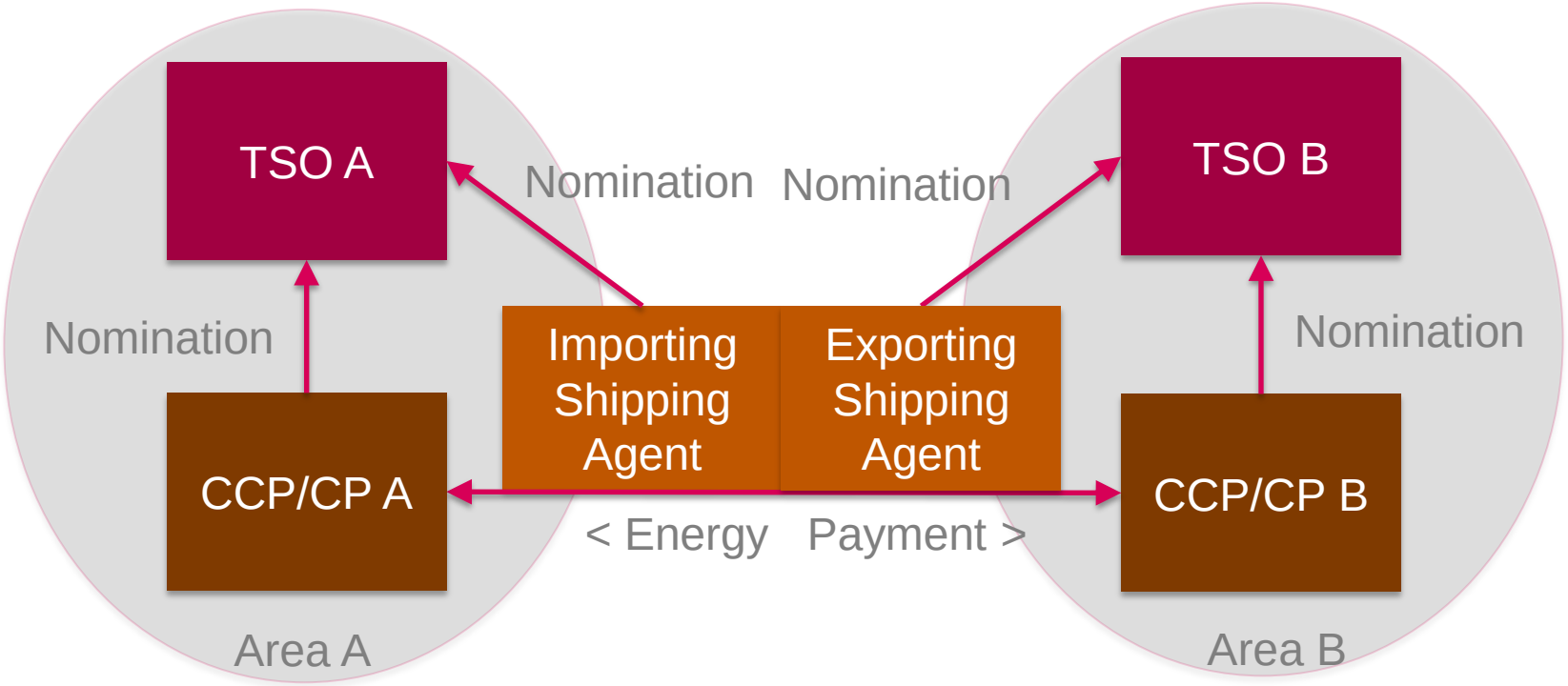
a. Additional functionality

- In the course of the blueprint process, 58 gaps have been identified between the original Request for Offer (RFO) and the blueprint documentation delivered by DBAG.
- These gaps resulted in 32 change requests ranging from minor to major project impact. These are included in our plan and budget. The most significant sets of changes are stated below and detailed in the next slides:

1. Shipping Module
2. Code base separation
3. XBID-Optional Trading Solution (OTS) separation
4. Changes enhancing security
5. Changes enhancing the robustness of TSO processes
6. Changes enhancing the robustness of PX processes
7. An additional, early performance test

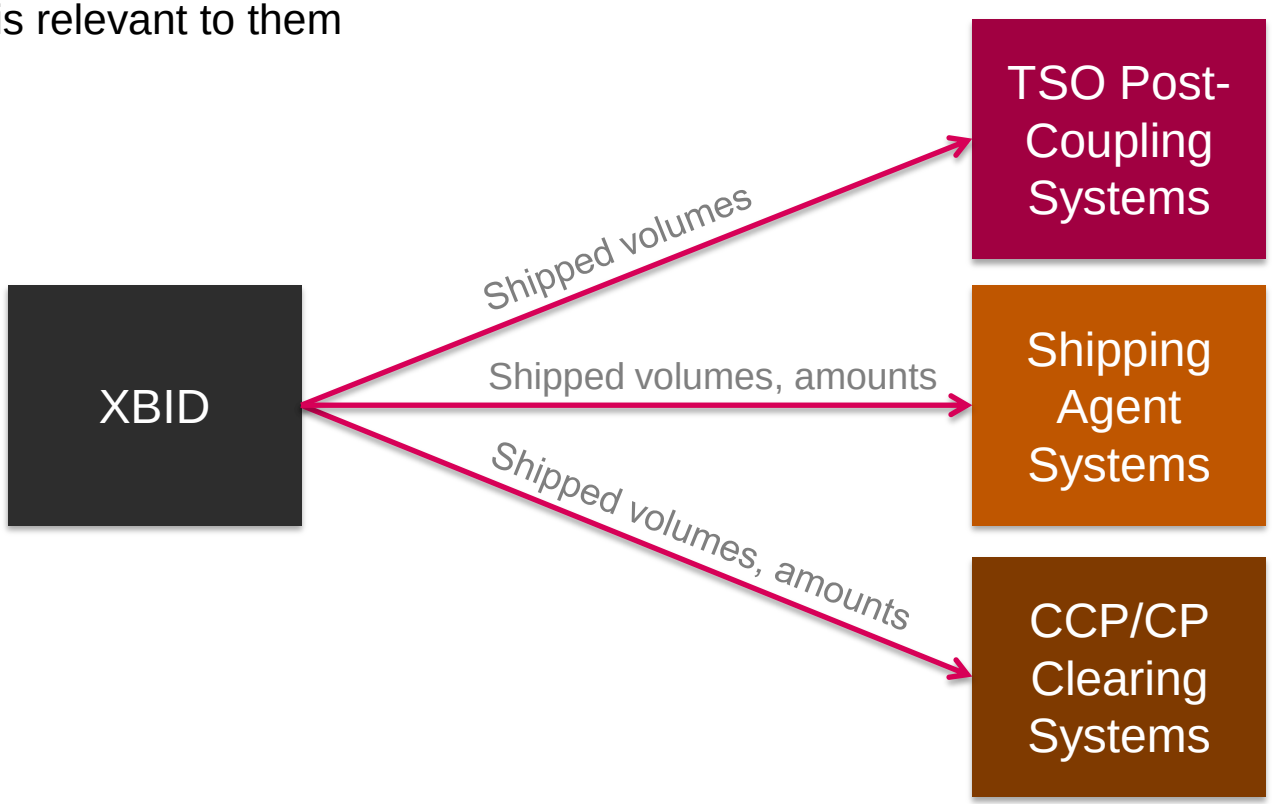
1. Shipping Module

- The largest change by far involves development of a Shipping Module
- Shipping is the post-coupling process that takes care of
    1. nomination and scheduling of the cross-border energy flows resulting from implicit transactions (physical shipping), and
    2. settlement of the cross-CCP (i.e. cross-party) money flows resulting from implicit transactions (financial shipping)



Shipping Module output

- The purpose of the Shipping Module is
  - to enrich the XBID output data with information on the shipping agent(s) on each interconnector, and
  - to filter this data in such a way that all relevant recipients only receive that subset of the data which is relevant to them



a) Additional functionality 2. – 3.

2. Code base separation

- The XBID system had been offered as a configuration of the DBAG product, which is used for commodity market trading
- This restricted change management and release management
- Code-base separation provides more independence in these respects

3. XBID-Optional Trading Solution (OTS) separation

- Originally, the XBID system and the OTS were configurations of the same system and shared various components
- Several changes ensure sufficient mutual independence:
  - Separation of documentation
  - Separation of databases
  - Separation of infrastructure

a) Additional functionality 4. – 7.

4. Several changes to enhance security

- Additional security tests
- Limited Admin user rights
- Limited access to XBID SOB via PMI and Admin interface

5. Several changes to enhance the robustness of TSO processes

- Unified message formats according to new ENTSO-E standards
- Enabling mutual back-up
- Automatic system halt when TSO interface is down

6. Several changes to enhance the robustness of PX processes

- Enhanced trade cancellation support
- Enhanced support for several PXs in one delivery area

7. Early performance test

- Performance will be tested at the earliest possible moment on production systems

b. Performance: commitments and measures

- Performance was among the key required features of the new XBID solution in the Request For Offer (RFO)
- The XBID solution must be able to process peak loads in hourly (half-hourly, quarterly) orders, block orders, and explicit capacity requests without breaking down, malfunctioning or becoming unresponsive
- A realistic test scenario (RTS) has been designed to measure this, which makes assumptions on:
  - Topologies (current, at go-live, after go-live)
  - Product range across these topologies
  - Order and trade volumes
  - Peak size and duration
  - Peak distribution
  - How to define ‘unresponsive’

Realistic Test Scenario (RTS)

- The RTS models a busy hour on busy day
- Hourly order peaks coincide across all markets
- 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, 30h; 15min and 30 min products in fewer hubs)
  - Number of instruments per product
  - Number of orders per product, price range, initial market depth
  - Realistic price distribution over buy and sell orders
  - Congestion and ramping patterns
  - Test duration (1h), number of peaks (2), peak duration (2sec and 5min)
  - Non-block, block and explicit request peaks do not coincide; the 1h non-block peaks do not coincide with the 15min and 30min peaks
  - Orders per peak (approx. 200/sec 1h orders during 2sec peak)
- The expected test outcome was a set of maximum response times for 95%, 99.5% and 100% of the cases

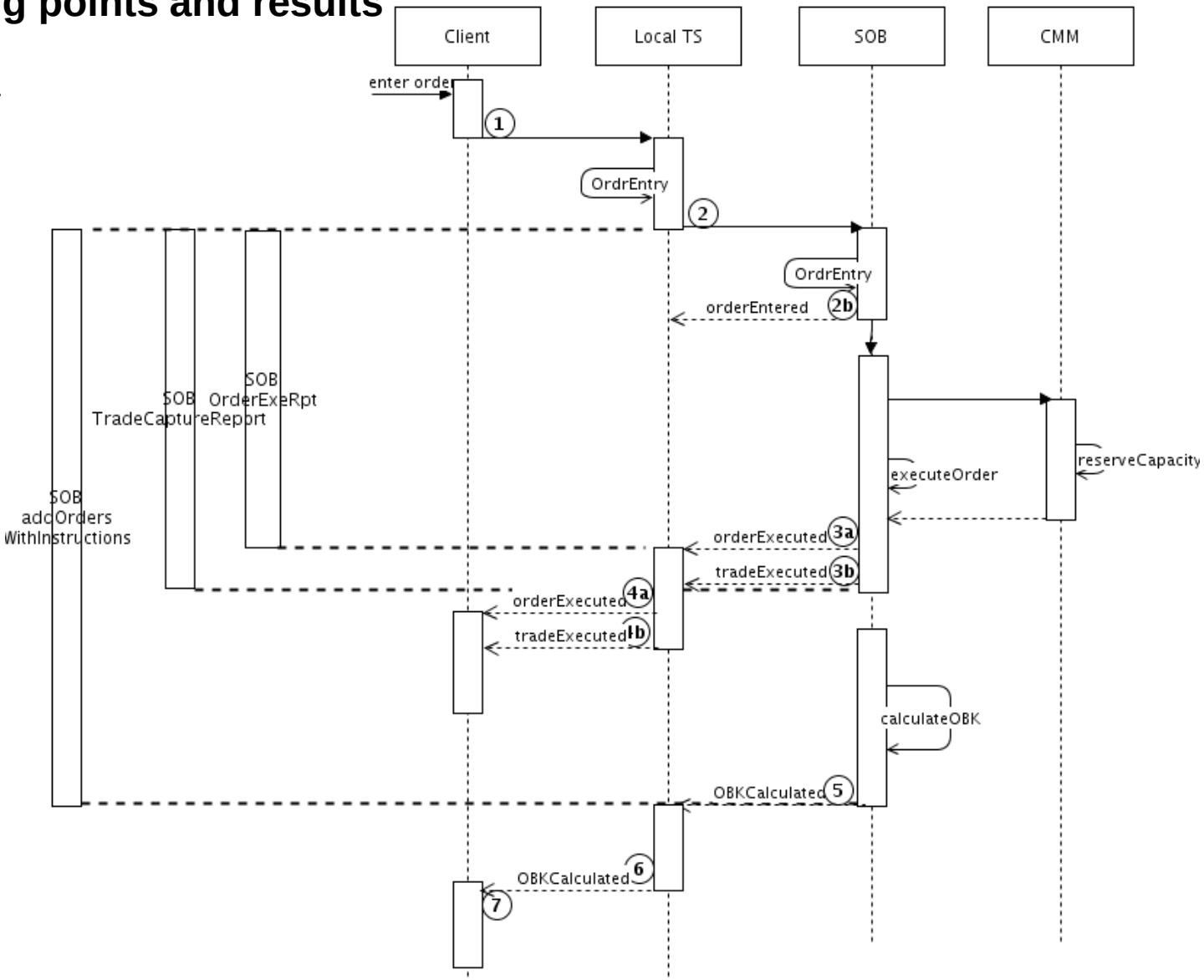
RTS: timeline and peaks

- Product groups
  - Hourly products: two peaks
  - 15min/30min products: two peaks
  - Blocks: no peak
  - Explicit requests: one peak
- Peaks do not coincide across products, but do coincide across hubs

From	To	Hourly	15M/30M	Blocks	Explicit
00:00:00	00:10:00	Base	Base	Base	Base
00:10:00	00:11:00	Base	Base	Base	Peak
00:11:00	00:25:00	Base	Base	Base	Base
00:25:00	00:29:58	Base	Peak 2	Base	Base
00:29:58	00:30:00	Base	Peak 1	Base	Base
00:30:00	00:55:00	Base	Base	Base	Base
00:55:00	00:59:58	Peak 2	Base	Base	Base
00:59:58	01:00:00	Peak 1	Base	Base	Base

RTS: measuring points and results

- Individual timing for every order measured between points 2 – 3a, 2 - 3b, 2 – 5 in milliseconds.
- Ratio (number of border reservations) / (number of trades).
- Response time percentiles of 95%, 99,5% and 100% for the time in milliseconds measured between points 2-5.
- Include first hour for all products in the results
- Provide which contracts were used



Performance drivers

- Number of orders (order book depth)
  - Every order entering the system acts as a multiplier for processing time, no matter whether it is relevant for trading or not
- Number of hubs and number of borders
  - The number of hubs is a direct multiplier of the processing steps needed on local order book calculations
  - Each routing calculation has to be done per hub
  - The number of borders has an incremental effect on individual routing calculations
- Number of instruments
  - The number of instruments is a multiplier to the number of local order books that need to be calculated
- Block order size
  - The size of block orders is relevant in case trades are executed
  - The bigger the block order size, the more contracts are affected by the trade

DBAG-proposed improvements

- RTS was run on a prototype. The results indicated the need for performance enhancement measures
- DBAG proposed three sets of performance improvement measures, for implementation at go-live, after go-live and in the more distant future respectively
  - 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)

Local order book view

- The local order book view is the view of the order book that any trader will see in their trading system
- The local order book view is a combination of:
  - All orders on local products (i.e. products only traded inside the market area)
  - Global orders entered in the same market area
  - Global orders entered in other market areas to the extent these are matchable (taking into account available capacity between the market areas and constraints like ramping)
- The global part of the local order book view is calculated in the central XBID system for all market areas
- This calculation is needed after each change (order entry, modification, withdrawal and matching)
- This puts a heavy strain on performance, as there is a calculation for every single order in every single market *(#orders* times *#markets* calculations!)
- Two performance measures involve reducing that strain

Reduction of local order book view update frequency and depth

Reduction of order book update frequency

- In the original design the local order book views were calculated after every triggering event (order entry, modification, withdrawal and matching)
- In the enhanced design the view updates are bundled during high-load periods; this reduces the number of calculations
- This will not be noticeable to the traders

Reduction of order book depth

- As every single order is calculated separately for every market, it pays to also reduce the number of orders to be calculated
- Two configuration settings will be added to the system:
  - Maximum number of orders to be shown in the local views
  - Maximum volume to be shown in the local views
- Order book calculation will stop once **both** limits are reached
- The actual values for these parameters will be determined during testing
- Parties aim for leaving out no more than the worst 20% of the orders

Performance requirements

(x % of the measurements should be below the indicated value)	RTS topology [ms]		
Response Time Indicators (excl. network latency)	95%	99,5%	99,95%
Order execution and trade capture response (2-3a/3b)	895	1,790	N/A
Response time of the API (1-2)	100	200	N/A
Public Order Books Reports response (2-5)	1,265	2,530	N/A
Refresh Time Indicators (excl. network latency)	95%	99,5%	99,95%
Screen refresh time for SOB-CMM Admin Client	500	1,000	N/A
Screen refresh time for TSO Client	1,255	2,590	N/A
Screen refresh time for Explicit Access Client	1,255	2,590	N/A

DBAG's boundaries of service commitments

- XBID Solution capacity boundaries (daily maxima)
  - Limit orders: 100,000 orders
  - Block orders: 5,000 orders
  - Explicit capacity requests: 30,000 requests
- XBID Solution workload and allowed usage boundaries (sustainable – peak)
  - Limit orders: 16,54 – 200 per second
  - Block orders: 0,22 – n/a per second
  - Explicit capacity requests: 0,35 – 2 per second
- XBID Solution topology limits
  - Maximum number of hubs: 50
  - Maximum number of borders: 150

Summary on performance

- Analysis and testing is ongoing, but the expectation is that with the improved RTS described above and the improvements DBAG proposed for go-live sufficient performance can be guaranteed for a 2 year period as a minimum
- 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

1. Project Status
2. Update on key aspects of the XBID Solution
3. Detailed Project Planning
4. Market Parties Perspectives
5. Local Implementation Projects – Overview
6. Local Implementation Projects – Details
7. Closing remarks, Reflections on the day

Detailed Project Planning

a. High Level Delivery Plan until Go-live

Mark Pickles

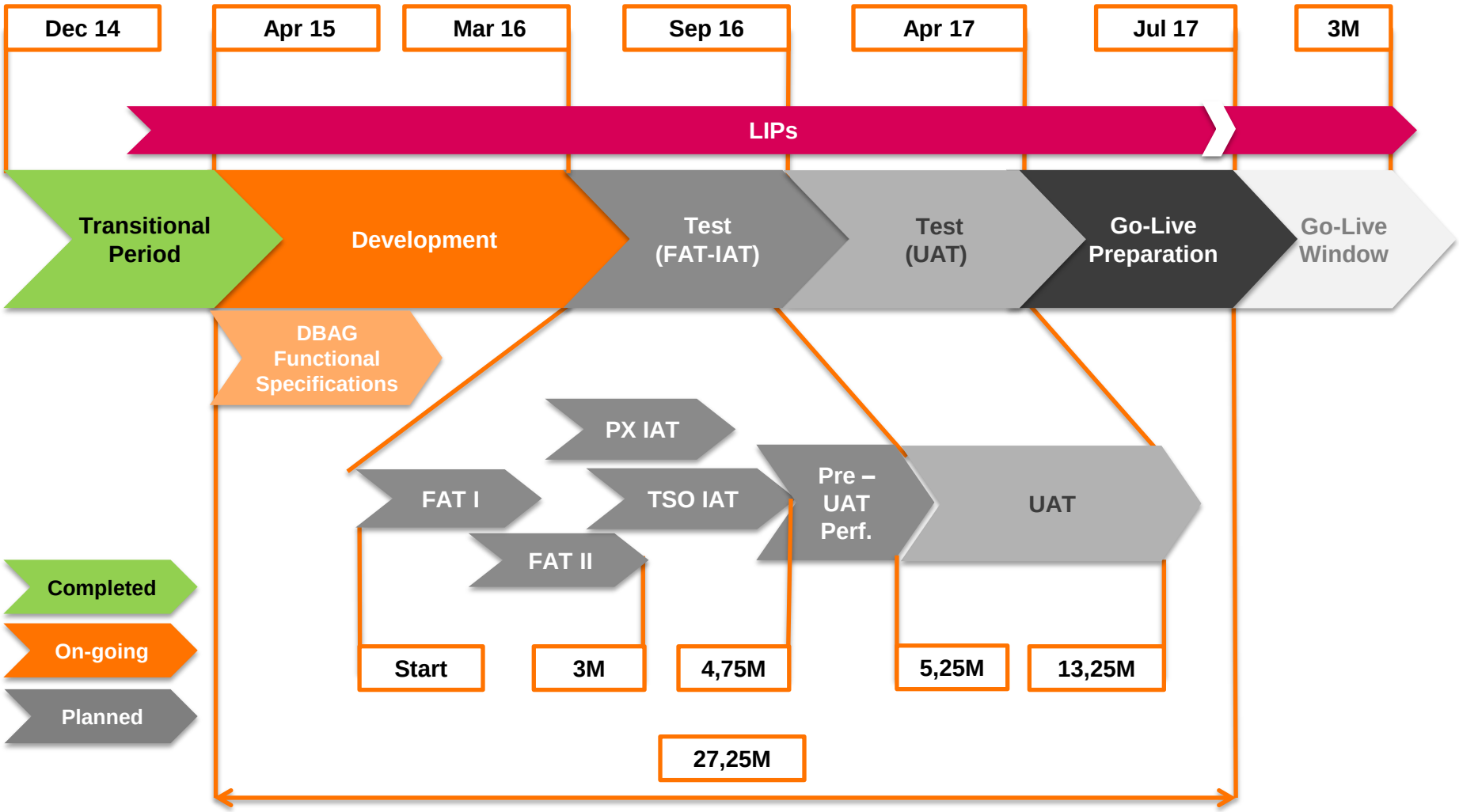
TSO Project Manager

b. Testing Overview

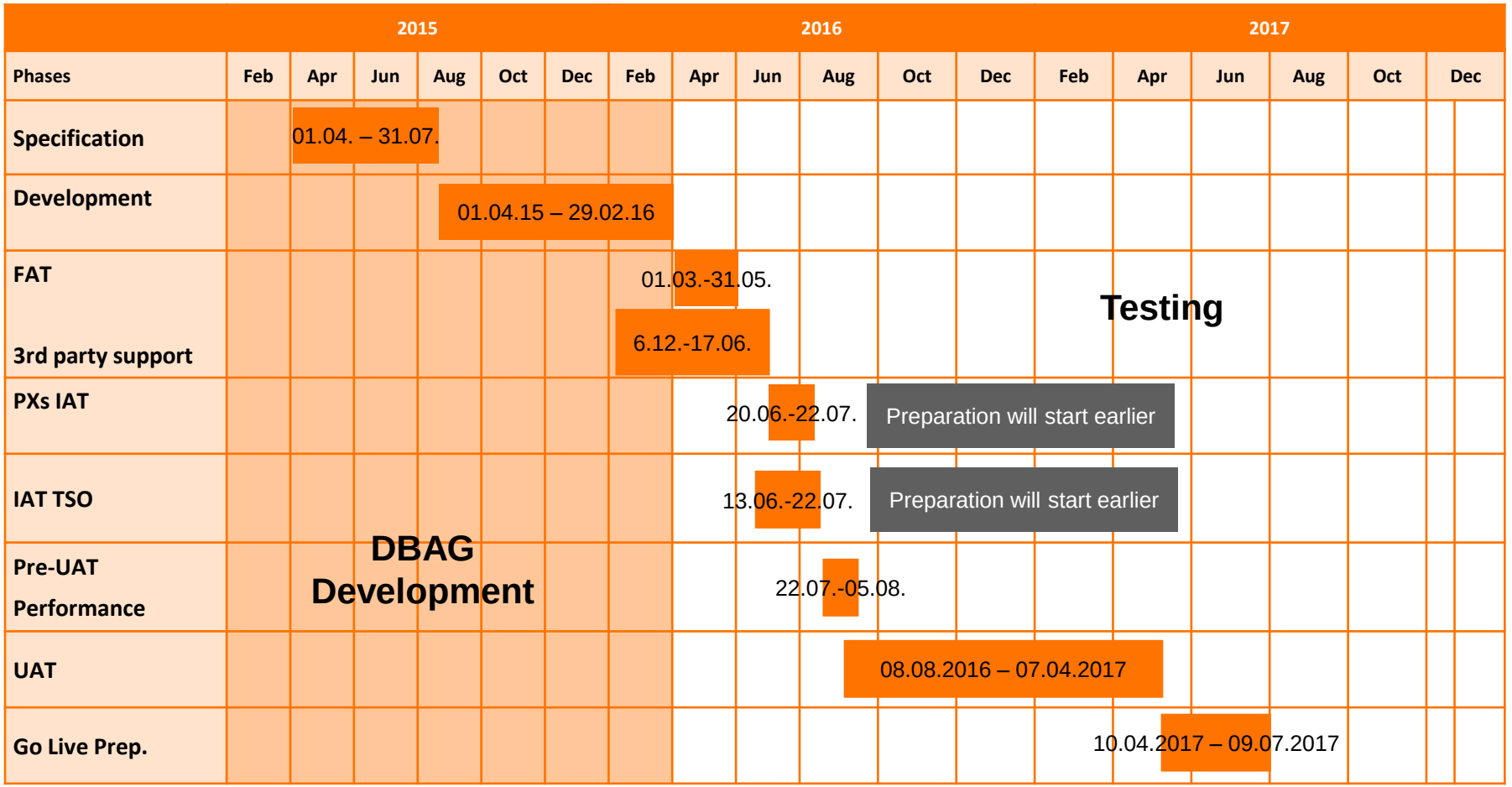
Eeva Harjukoski, Matthieu Neauport

PX Testing Workingroup leaders

a. High-Level Delivery Plan until Go-Live



DBAG Plan


2015
2016
2017
Phases
Feb
Apr
Jun
Aug
Oct
Dec
Feb
Apr
Jun
Aug
Oct
Dec
Feb
Apr
Jun
Aug
Oct
Dec
Specification
01.04. – 31.07.
Development
01.04.15 – 29.02.16
FAT
01.03.-31.05.
3rd party support
6.12.-17.06.
Testing
PXs IAT
20.06.-22.07.
Preparation will start earlier
IAT TSO
13.06.-22.07.
Preparation will start earlier
Pre-UAT
Performance
22.07.-05.08.
DBAG Development
UAT
08.08.2016 – 07.04.2017
Go Live Prep.
10.04.2017 – 09.07.2017

b. Testing Overview – Introduction

- A test case often needs at least as much effort to extract from requirements as it will take to execute.

- Testing is not only executing
  - In addition time needed for defect raising, retesting, scheduling, reporting, meetings, etc.

- Testing estimations are based on
  - Experience of Testing WG members from similar size and complexity projects
  - Available documentation related to XBID at the time of planning
  - Assumptions based on knowledge from similar type projects
  - Calculated risks foreseen and learned from previous projects

Common facts of software testing

- Flexibility is required to mitigate direct effect on testing due to the risk:
  - Extension of the duration of design and development phases
  - Change on agreed functionalities during development
- Time is also needed for adapting and adjusting agreed processes and working methods
- Quality is more than the obvious part

Test phases in XBID

Factory Acceptance Test 1 (FAT I)	• DBAG internal test phase • Monitor DBAG testing • Learning the system to be effective during other test phases
Factory Acceptance Test 2 (FAT II)	• Joint review of DBAG test cases • Joint execution of test cases • Length provided by DBAG
Integration Acceptance Test (IAT)	• Provide all parties equal opportunity to validate that their system can properly communicate with the XBID platform • Minimizes the risk of breaking the XBID platform or delaying other parties
User Acceptance Test (UAT)	• Specific zoom on next slide

User Acceptance Tests

Adjustment of the next phase based on previous phase outcomes




Functional Test

- Functionalities verification
- Based on specification
- 3 iterations

Integration Test

- End to end tests
- Entire chain
- 3 iterations

Emergency Plan Simulation

- Disaster Recovery Plan
- Organisational and Technical level
- DBAG responsibility

Performance Test

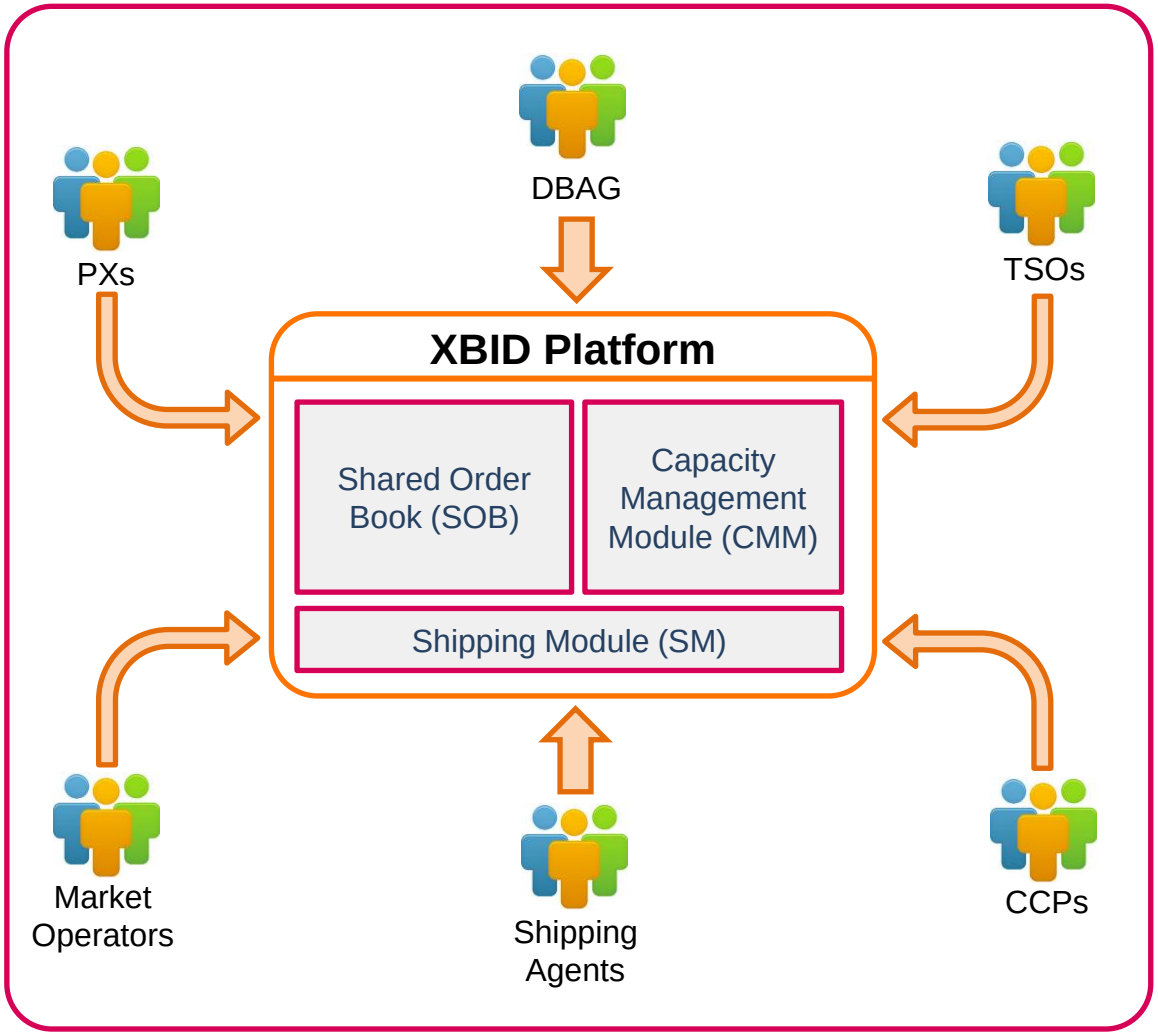
- System responsiveness
- Realistic Test Scenario
- 3 runs per test's execution

Simulation Test

- Procedural Tests
- System oriented
- Stability Tests

Overall focus on Security / Robustness / Equal Treatment

Testing context



Challenges

Test coverage

- In terms of scope
- In terms of tested data

Coordination / Synchronization among all parties

- Test Preparation
- Test Planning
- Test Execution
- Reporting

Interface with LIPs

- Facilitating LIP testing
- Prevent any interference

Knowledge transfer from project phase to new releases

Test development

Testing activities are supported by:
- proper methods and processes
- documentation

Test automation

Testing team can:
- focus on manual testing
- optimize testing coverage

Regression tests set

Testing team can focus on:
- newly delivered items
- corrected functionalities

Re-use for future releases

- Save time and money
- Enhance efficiency by minimizing testing effort
- Secure the stability of the existing system
- Optimize production system’s support

1. Project Status
2. Update on key aspects of the XBID Solution
3. Detailed Project Planning
4. Market Parties Perspectives
5. Local Implementation Projects – Overview
6. Local Implementation Projects – Details
7. Closing remarks, Reflections on the day

XBID Cross-Border Intraday Market Project

Market Parties Perspectives

André Estermann
50 Hertz Transmission

On behalf of entsoe

Supported by europex

Lunch

13:00 – 13:45

1. Project Status
2. Update on key aspects of the XBID Solution
3. Detailed Project Planning
4. Market Parties Perspectives
5. Local Implementation Projects – Overview
6. Local Implementation Projects – Details
7. Closing remarks, Reflections on the day

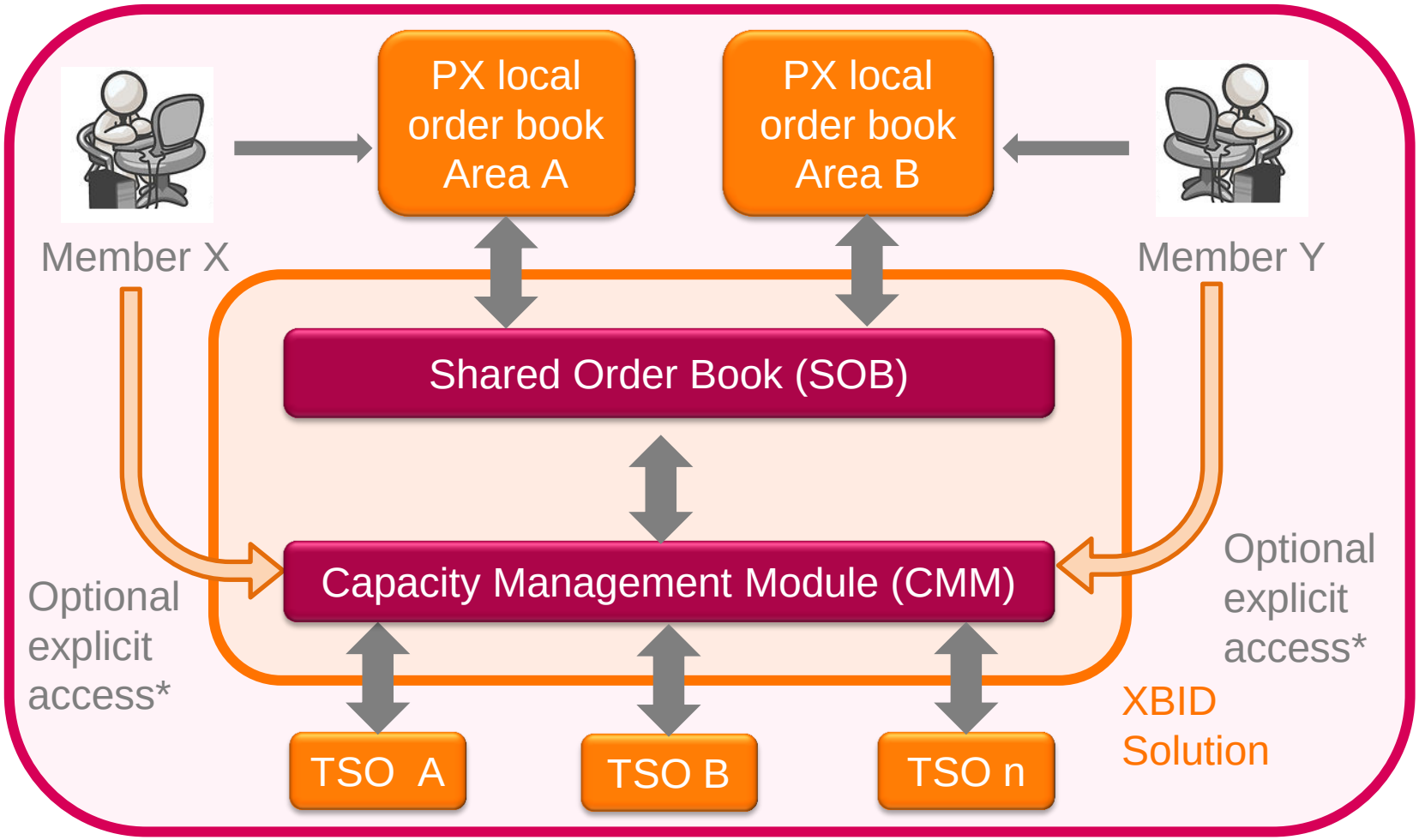
Local Implementation Projects (LIPs) – Overview

a. **Overview of LIPs**
b. **Scope and Deliverables**
c. **Interaction XBID and LIP Planning**
d. **Next steps**

Martine Verelst

Elia

Market Participants' position within the XBID and TS solution



* Depending on regulatory approval

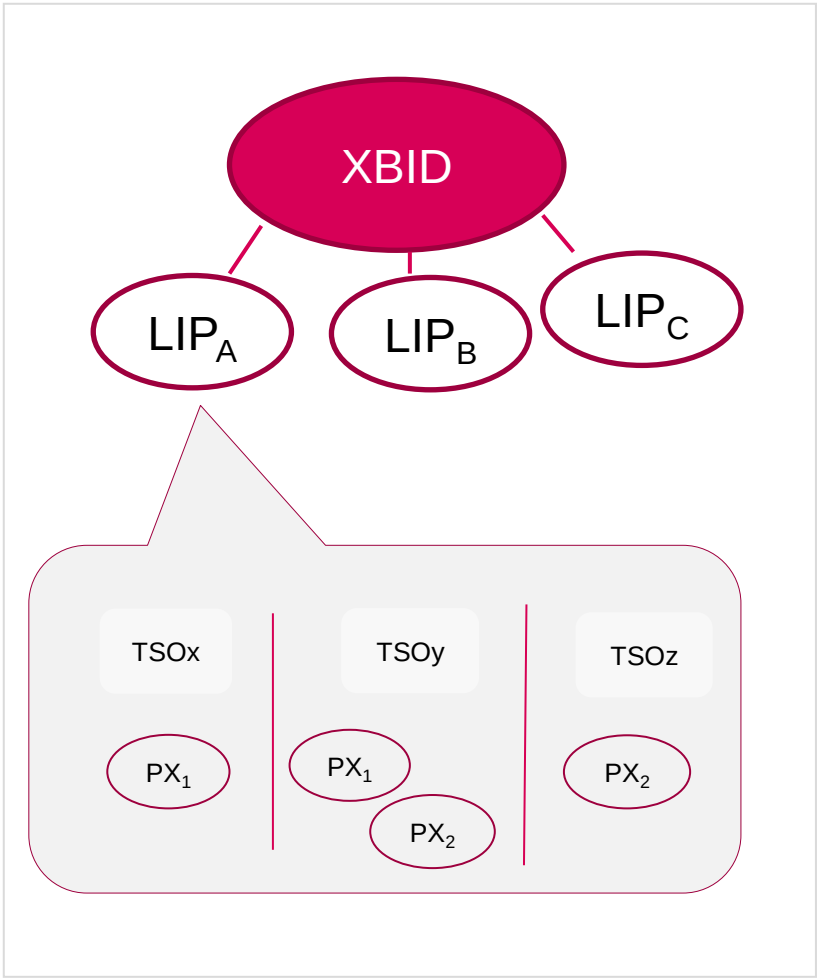
Local Implementation Projects (LIPs)

A LIP consists of

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

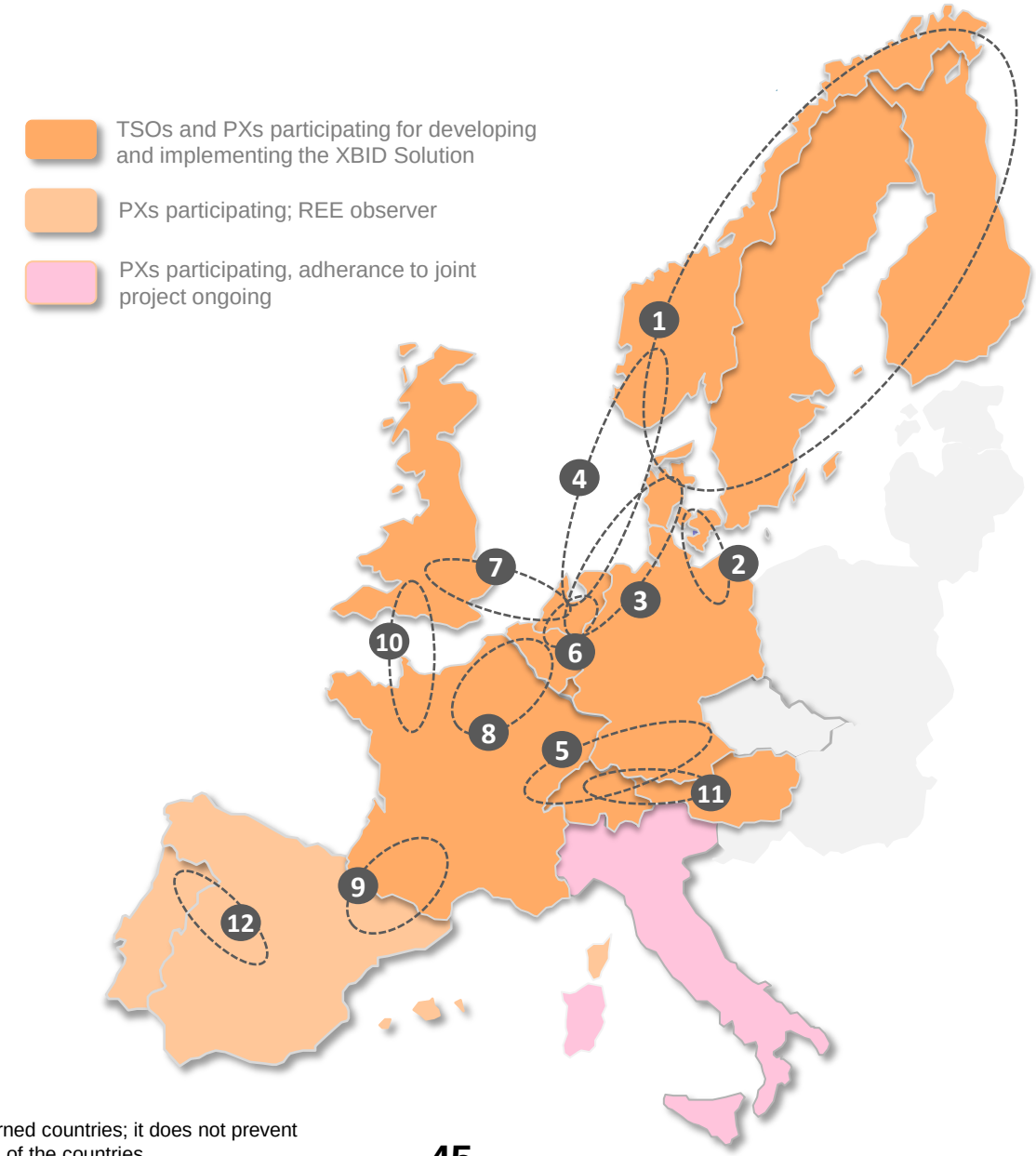
LIP's main tasks are:

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



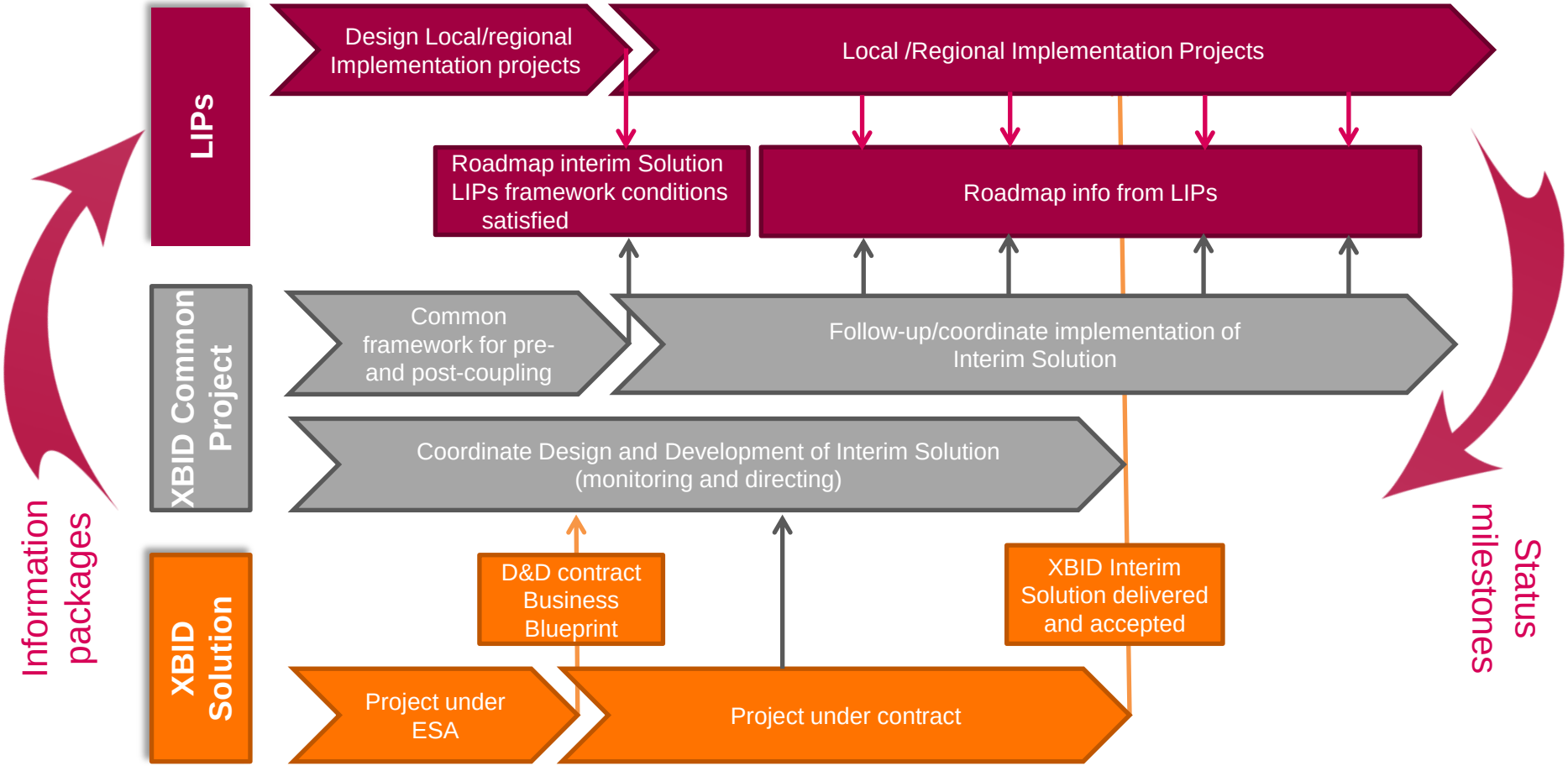
Overview LIPs

	Draft LIP	Tentative Participants[1]
1	Nordic	Fingrid, EnDK, SvK, Statnett, NPS
2	DK2/DE (Kontek)	EnDK, 50Hz, NPS, EPEX
3	DK1/DE, DE/NL	EnDK, TenneT NL& DE, Amprion, EPEX, APX/Belpex, NPS
4	NorNed	Statnett, TenneT NL, APX/Belpex, NPS
5	FR/DE, CH/DE, CH/FR, DE/AT	Amprion, TransnetBW, APG, RTE, Swissgrid, EPEX, NPS
6	NL/BE	Elia, TenneT NL, APX/Belpex
7	BritNed	TenneT BV, National Grid, Chosen PX
8	FR/BE	RTE, Elia, APX/Belpex, EPEX
9	FR/ES	RTE, REE, EPEX, OMIE
10	IFA	RTE and National Grid Interconnectors
11	AT/CH	APG, Swissgrid, EPEX
12	ES/PT	REE, REN, OMIE



[1] The list is based on the present status of PXs active in the concerned countries; it does not prevent any other PX joining as soon as they are selected as NEMO in one of the countries.

XBID Joint project approach – overview



What the LIPs can expect from XBID Market project? (not exhaustive)

a) Information packages :

HLA, HLA description, Communication/interaction points, Deadlines, Scope of XBID Market testing, Operational procedures, etc

b) Organization of joint testing

- XBID Market platform and the interfaces to LIPs systems

c) Monitoring of readiness of the LIPs

- Local systems
- Local procedures
- Local contracts
- Regulatory approval

d) Go live XBID Market project assumption:

- LIPs are expected to join the XBID Market platform Go-live
- LIPs that are not ready to Go-live together with the XBID market platform, can join at a later point in time. This/there exact later point(s) in time still need to be decided taking into account operational stability and completion of adequate system and procedural testing.

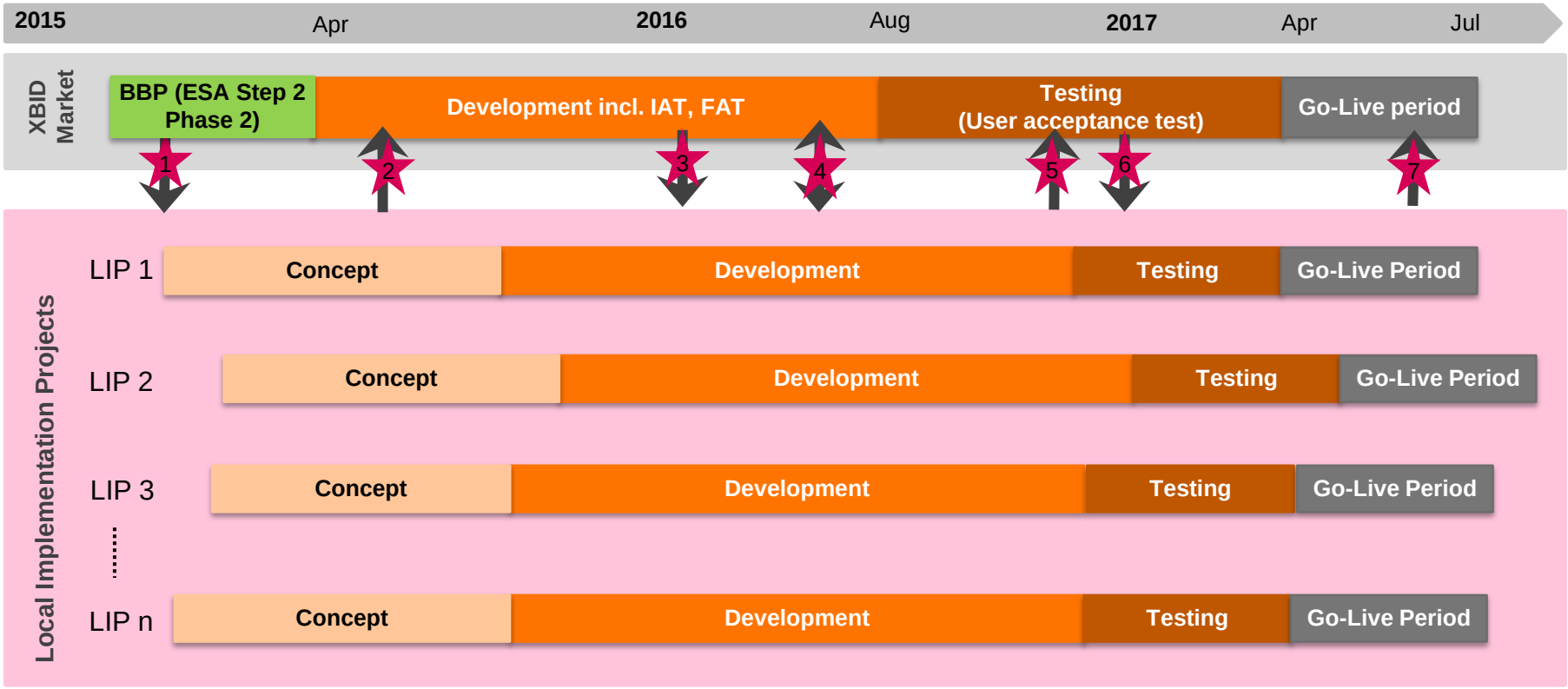
What are the responsibilities of the LIPs? (not exhaustive)

a) Preparation/adaptation of local operational procedures
b) Adapting local systems and contracts
c) Procurement issues/Organization of a tender if needed
d) Securing Equal Treatment
   - Between PXs
   - Implicit/explicit access
   - It is up to the LIPs and involved NRAs to grant explicit access or not
e) Cross PX clearing arrangement (PXs responsibility)
f) End to end testing of systems
g) Obtaining local NRA approval
h) Decision on the transition
   - The LIPs will decide on the optimal solution for the transition from the current situation to the XBID Market coupled situation.
i) Reporting towards the XBID project

LIPs reporting to the XBID project

- While the LIPs are not directly part of the XBID common project it is essential for the XBID project to be able to collect general information about the LIPs and to monitor their readiness for testing and go-live.
- Information will also be collected for the purpose of:
  - The request to NRA on local cost comfort
  - User Group meetings
  - Other external stakeholder information. For example AESAG, EC, IG-meetings, …

Interaction of XBID project with LIPs



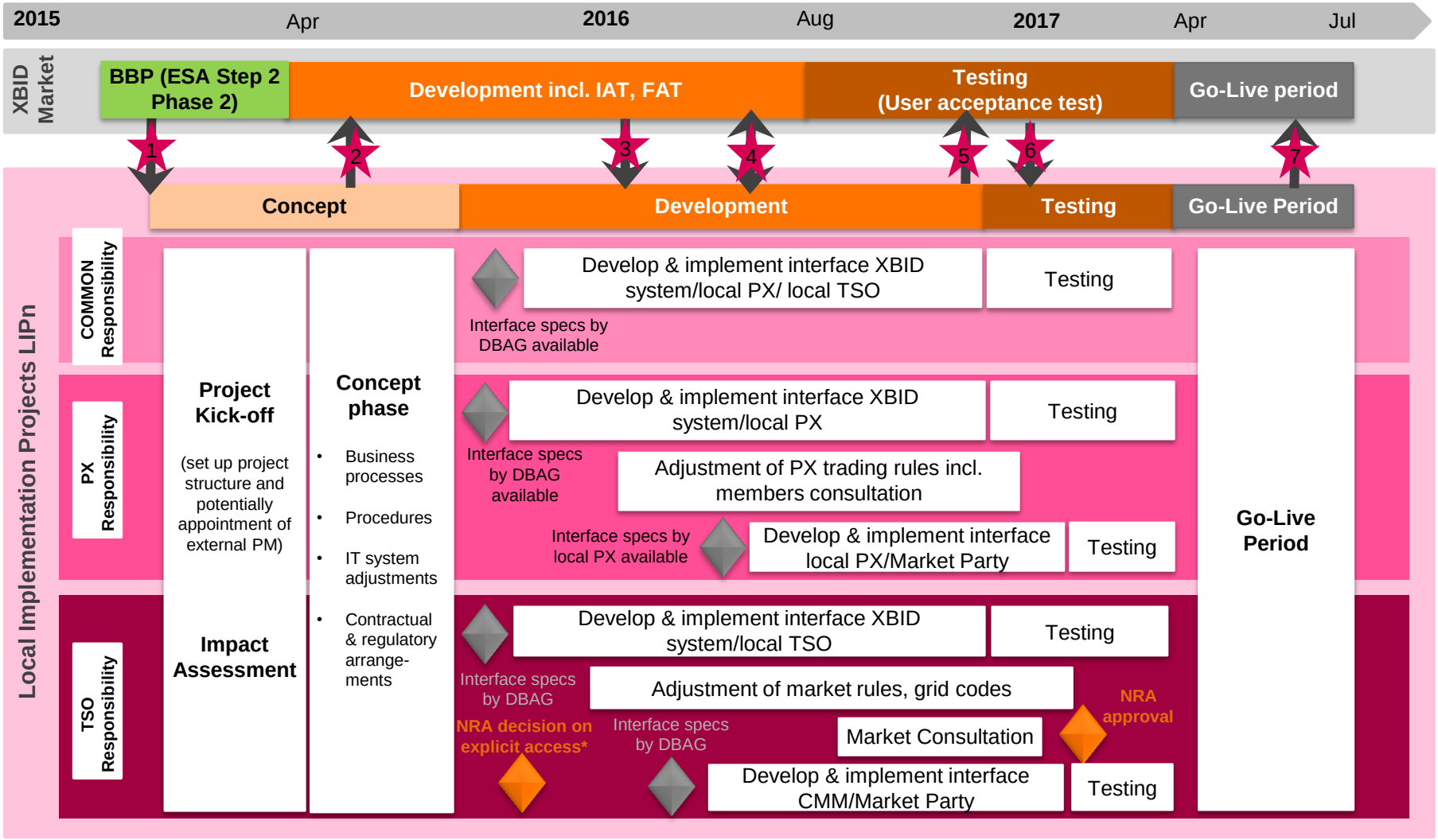
XBID Market – LIP n Milestones

1) *Information package 1 to LIPs*
2) *Impact assessment reporting by LIPs*
3) *Information package 2 to LIPs*
4) *Integration Acceptance Test: connectivity*
5) *Demonstration of readiness to join UAT*
6) *Information package 3 to LIPs*
7) *Demonstration of Go-Live readiness*

Current common milestones for the LIPs

- **January 2015**: Information package to LIPs in order to facilitate smooth information distribution also when a LIP has formally not yet started.
- **Middle of 2015**: Impact assessment reporting by LIPs: Local view on what has to be done regarding (adaptation of):
  - Local systems
  - Local procedures
  - Local contracts
- **Q3 2016:** Demonstration of readiness to join UAT
  - Entrance criteria will be defined.
  - Pending discussions within the joint project organization an alternative moment for the LIPs to enter the joint testing could be defined.
- **Q2 2017:** Demonstration of Go-Live readiness regarding:
  - Local systems
  - Local procedures
  - Local contracts
  - Local NRA approval (in case applicable)

Detailed generic LIP plan



* If explicit access is not granted for a LIP , development and implementation of a interface CMM/MP might not be necessary

Next steps

a) Prepare the organization of joint testing:
   - Clarify exact scope
   - Provide entrance criteria for LIPs to join testing

b) For monitoring the readiness of individual LIPs, a reporting template has been developed, which distinguishes potential impact in 4 dimensions:
   - Technical (changes in system interfaces)
   - Operational (changes in operational procedures)
   - Contractual (changes in existing or need for new contracts)
   - Regulatory (need for regulatory approval)

c) Clarify the XBID Market project Go live and the possibilities for the LIPs to join:
   - LIPs that are not ready to Go-live together with the XBID market platform, can join at a later point in time. This/there exact later point(s) in time still need to be decided taking into account operational stability and completion of adequate system and procedural testing.

d) In this reporting, the following milestones are of key interest:
   - Completion of impact analysis
   - Readiness to join UAT
   - Readiness for Go-live

1. Project Status
2. Update on key aspects of the XBID Solution
3. Detailed Project Planning
4. Market Parties Perspectives
5. Local Implementation Projects – Overview
6. Local Implementation Projects – Details
7. Closing remarks, Reflections on the day

Local Implementation Projects – Details

a. LIP Kontek
b. LIP BE-NL
c. LIP Nordic
d. LIP IFA
e. LIP FR/DE/AT/CH

XBID Cross-Border Intraday Market Project

LIP KONTEK

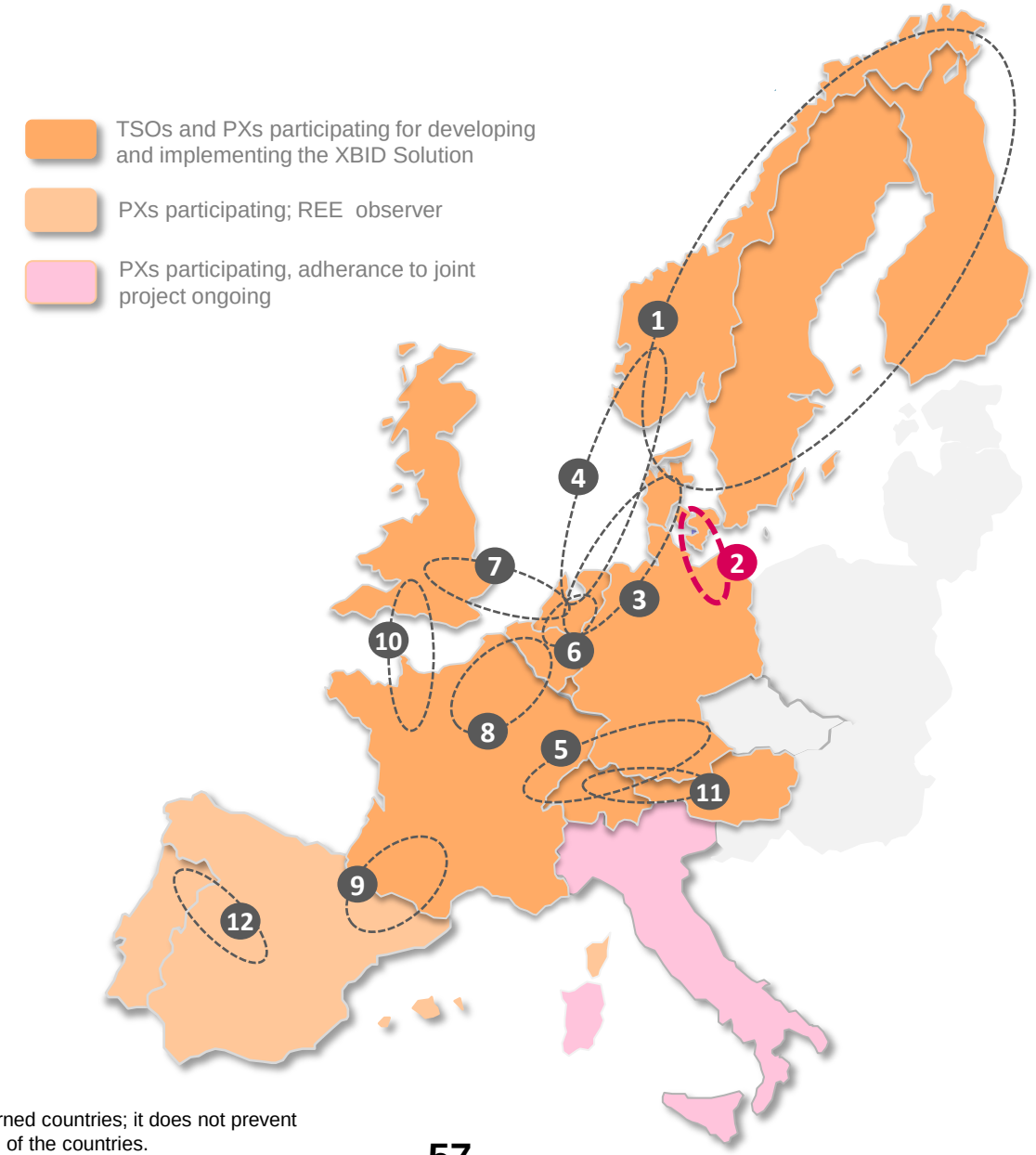
André Estermann
50 Hertz Transmission

On behalf of entsoe

Supported by europex

Overview LIPs

	Draft LIP	Tentative Participants[1]
1	Nordic	Fingrid, EnDK, SvK, Statnett, NPS
2	DK2/DE (Kontek)	EnDK, 50Hz, NPS, EPEX
3	DK1/DE, DE/NL	EnDK, TenneT NL& DE, Amprion, EPEX, APX/Belpex, NPS
4	NorNed	Statnett, TenneT NL, APX/Belpex, NPS
5	FR/DE, CH/DE, CH/FR, DE/AT	Amprion, TransnetBW, APG, RTE, Swissgrid, EPEX, NPS
6	NL/BE	Elia, TenneT NL, APX/Belpex
7	BritNed	TenneT BV, National Grid, Chosen PX
8	FR/BE	RTE, Elia, APX/Belpex, EPEX
9	FR/ES	RTE, REE, EPEX, OMIE
10	IFA	RTE and National Grid Interconnectors
11	AT/CH	APG, Swissgrid, EPEX
12	ES/PT	REE, REN, OMIE



[1] The list is based on the present status of PXs active in the concerned countries; it does not prevent any other PX joining as soon as they are selected as NEMO in one of the countries.

Overview of LIP KONTEK (1/2)

Geographical scope

- HVDC cable (600 MW excl. losses) between Denmark (DK2) and Germany (DE/AT) Bidding-Zones

Existing ID solution in the area

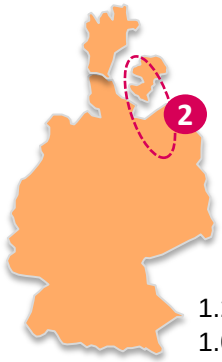
- Elbas: Operated by NordPool Spot
  - Continuous market with Gate opening at 14:00 at D-1 and Gate closure at H-45min

Involved parties (TSO/PXs) in the project

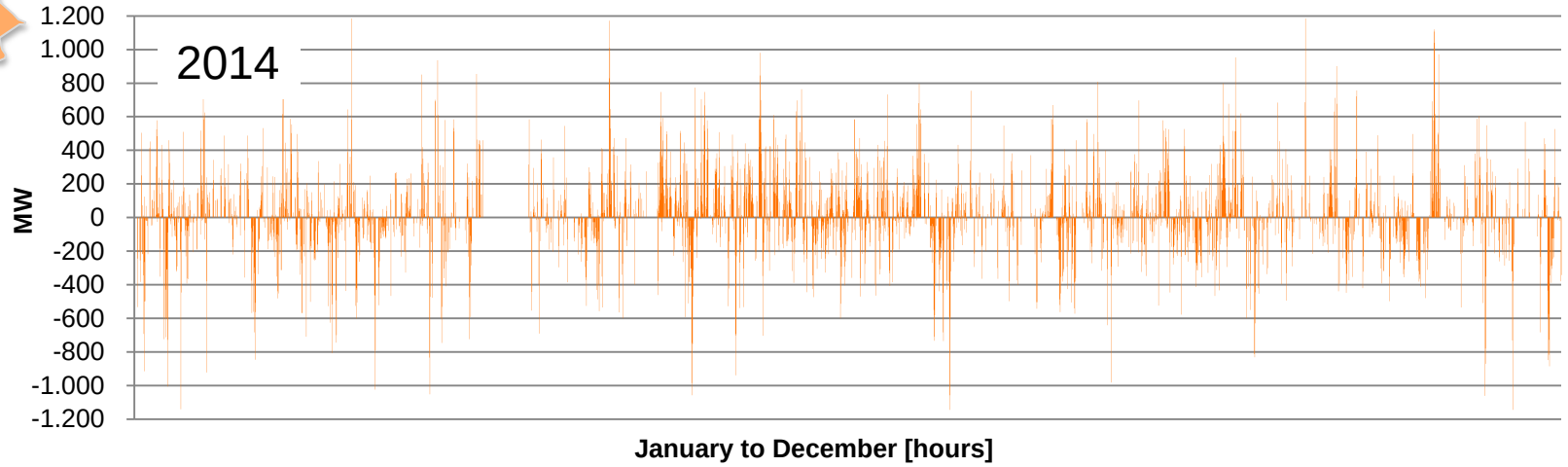
- TSOs (50Hertz & Energinet.dk)
- Shipper (NordPool Spot)
- CCPs (NordPool Spot & ECC (EPEX Spot)
- Jan Rönnback (NPS) is project manager

Foreseen type of allocation

- Implicit only (as today in day-ahead and intraday)



Overview of LIP KONTEK (2/2)



High RES infeed = High ID Trading

Project setup

Project structure

- A joint project group involving 50Hertz, Energinet.dk and NPS has been established and is coordinating the local implementation in monthly telephone conferences. NPS is the assigned Project Manager.

- EPEX/ECC can be included in the LIP project structure once a general understanding on the relevant contracts is reached between the current ID relevant parties (i.e. ENDK, 50Hertz and NPS), assuming a replication of the existing Day-Ahead shipping arrangements. EPEX Spot and any other interested PXs would then be invited by the TSOs to evaluate and to join the proposed solution on that border as soon as a high-level shipping mechanism is defined. As agreed in the XBID project, the shipping solution will respect the principles of non-discriminatory access to cross border capacity.

Meetings

- Monthly LIP coordination teleconferences between 50Hertz, Energinet.dk, NPS since March 2014 a first physical meeting on 04/12/2014.

Foreseen changes

Systems

- Implementation of “on-behalf” S&N process in TSO-Systems (incl. NOIS)
  - Adaptations in NPS (CCP/s) system also needed

Rules and Contracts

- TSO – Shipping Agent (CCP/s) Agreement needs to be put in place
  - CCPs financial clearing & settlement agreement
- Market rules will not be changed in light of XBID go-live

Regulatory approvals

- Regulatory approvals will only relevant for local implementation. No market relevant changes (Elbas → XBID) foreseen (i.e. no consultation needed).

Shipping and Nomination

The local implementation of XBID will result in adaptions of local TSOs & Shipping Agent systems and business processes for pre- and post-coupling.

Shipping Agreement

- The (draft) ID Shipping Agreement is based on the Day-ahead SA. It contains mainly a description of the services provided by the parties (e.g. physical and financial Shipping) and Business Processes. The second draft is currently under preparation (incl. description of Business Processes and timings).

Shipping and Nomination (S&N) process

- Detailing of solution in progress (incl. multiple PXs/CCPs, see Shipping Agreement). Current working assumption: TSO-Individual EIC code for the interim solution.

S&N improvements (Elbas → XBID) will have no impact on market participants!

XBID

Planning and next steps

2014

Shipping and Clearing & Settlement Agreement(s) (DRAFT)

2015

Adaptation of local systems

2016

Testing

2017

Go-live

XBID Cross-Border Intraday Market Project

LIP BE/NL

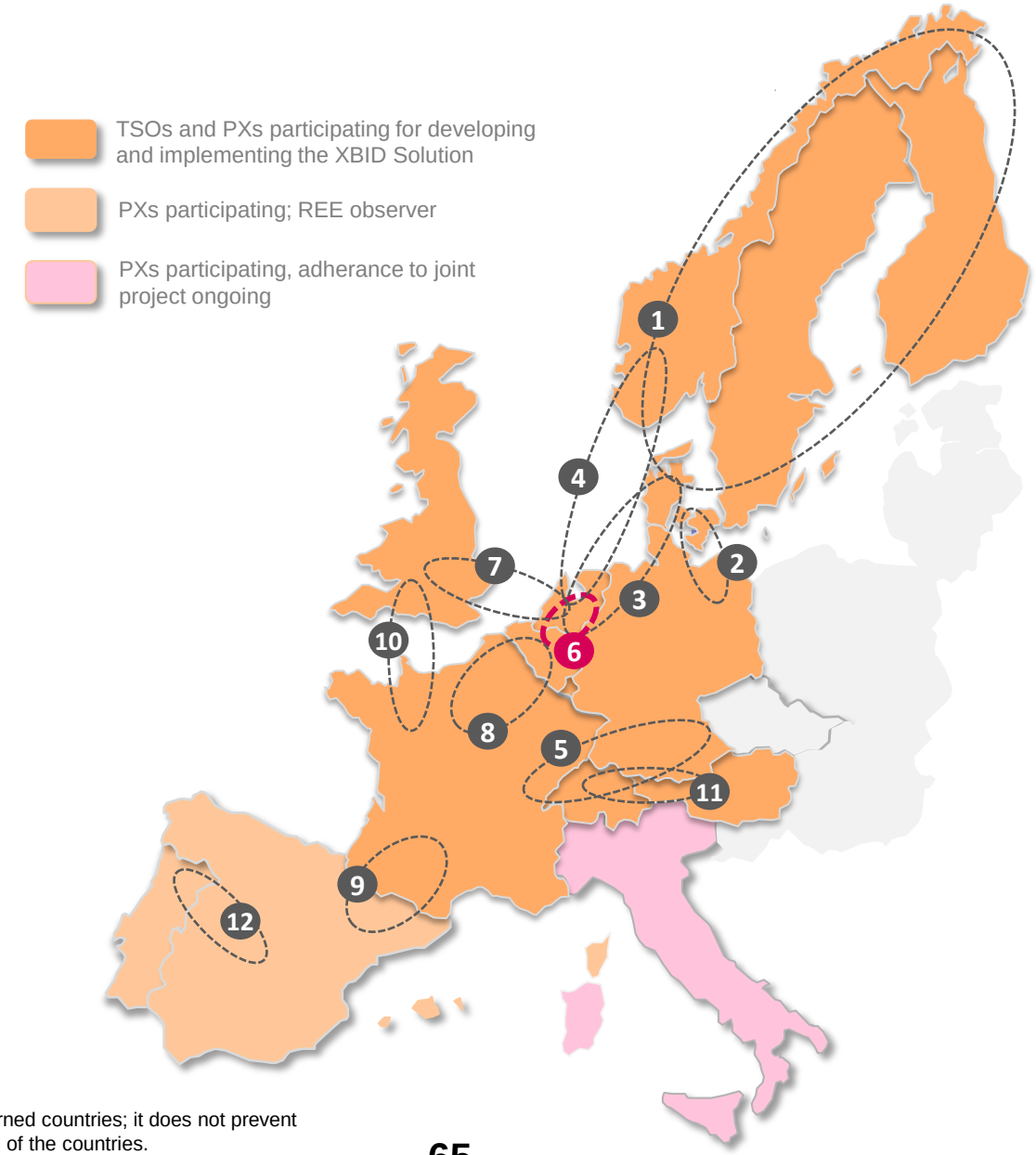
Martine Verelst
Elia

On behalf of entsoe

Supported by europex

Overview LIPs

	Draft LIP	Tentative Participants[1]
1	Nordic	Fingrid, EnDK, SvK, Statnett, NPS
2	DK2/DE (Kontek)	EnDK, 50Hz, NPS, EPEX
3	DK1/DE, DE/NL	EnDK, TenneT NL& DE, Amprion, EPEX, APX/Belpex, NPS
4	NorNed	Statnett, TenneT NL, APX/Belpex, NPS
5	FR/DE, CH/DE, CH/FR, DE/AT	Amprion, TransnetBW, APG, RTE, Swissgrid, EPEX, NPS
6	NL/BE	Elia, TenneT NL, APX/Belpex
7	BritNed	TenneT BV, National Grid, Chosen PX
8	FR/BE	RTE, Elia, APX/Belpex, EPEX
9	FR/ES	RTE, REE, EPEX, OMIE
10	IFA	RTE and National Grid Interconnectors
11	AT/CH	APG, Swissgrid, EPEX
12	ES/PT	REE, REN, OMIE



[1] The list is based on the present status of PXs active in the concerned countries; it does not prevent any other PX joining as soon as they are selected as NEMO in one of the countries.

Overview of LIP BE-NL

Geographical scope
- Belgium and The Netherlands; one border BE-NL

Existing ID solution in the area
- Elbas: System operated by NordPool Spot
  - Continuous market operated by APX/Belpex with Gate opening at 21:00 on D-1
  - Cross border trades possible until H-90 min/H-150 min (due to underlying systems with 12 gates closure at the TSOs)

Involved parties in the project
- Tennet and Elia
- APX/Belpex

Foreseen type of allocation
- Implicit only (as today in day-ahead and intraday)

Project setup

Project structure

- The 3 parties have agreed to cooperate in the design and implementation of the XBID Solution for the Belgium – The Netherlands border in a local implementation project.

- A project structure is set-up with a Steering Committee and a team of experts to work on the deliverables

- Tjitske Kramer is assigned as Project Manager

Meetings

- The parties started working since Q4/2013 on an ad hoc basis
- Since September 2014 meetings continued on a monthly basis

Foreseen changes

Systems

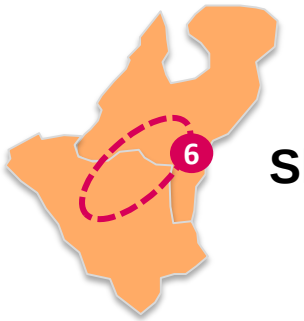
- TSO: modifications are needed
  - to support 24 “gates”, new file formats, new communication channels, …
  - to implement the “cross border nomination-on-behalf” process
- PX/CCP: modifications are needed
  - To implement new Trading and new Shipping Solution
  - To support new file formats, new communication channels, new way of nominating, …

Rules and Contracts

- Market rules at APX/Belpex are not foreseen to change. Small changes to procedures and specifications (with 2 weeks notice) might be necessary.
- ARP-contract at Elia has to be modified slightly
- At TenneT: to be determined

Regulatory approvals

- Regulatory approval (BE) and Grid Code change (NL) are needed.
- Regulators might consult the market participants in the framework of their approval process.



Shipping and Nomination (S&N)

- The local implementation of XBID will result in adaptions of local TSO and PX systems and business processes for pre- and post-coupling.

Shipping arrangements

- APX is foreseen to be the Shipping Agent on the BE-NL border and the Central Counter Party in the NL and BE markets
- Shipping arrangements to be adapted to comply with “cross border nomination-on-behalf” process.

Shipping and Nomination process

- Shipping will be performed on a border-by-border basis. TSOs will perform the ”cross border nomination-on-behalf” process

The new S&N process will have no impact on the market participants

Planning and next steps

- The High Level Architecture has been agreed between the parties
- Given finalization of Business Blueprint and Shipping Module deliverables, specifications for local development can start
- Parties can thus draft the local planning
- The goal is to have all local systems implemented and tested before the joint testing starts spring 2016
- The BE-NL LIP aims to be ready for testing when the XBID Solution is finalised with the goal to go live from the start

XBID Cross-Border Intraday Market Project

LIP Nordic

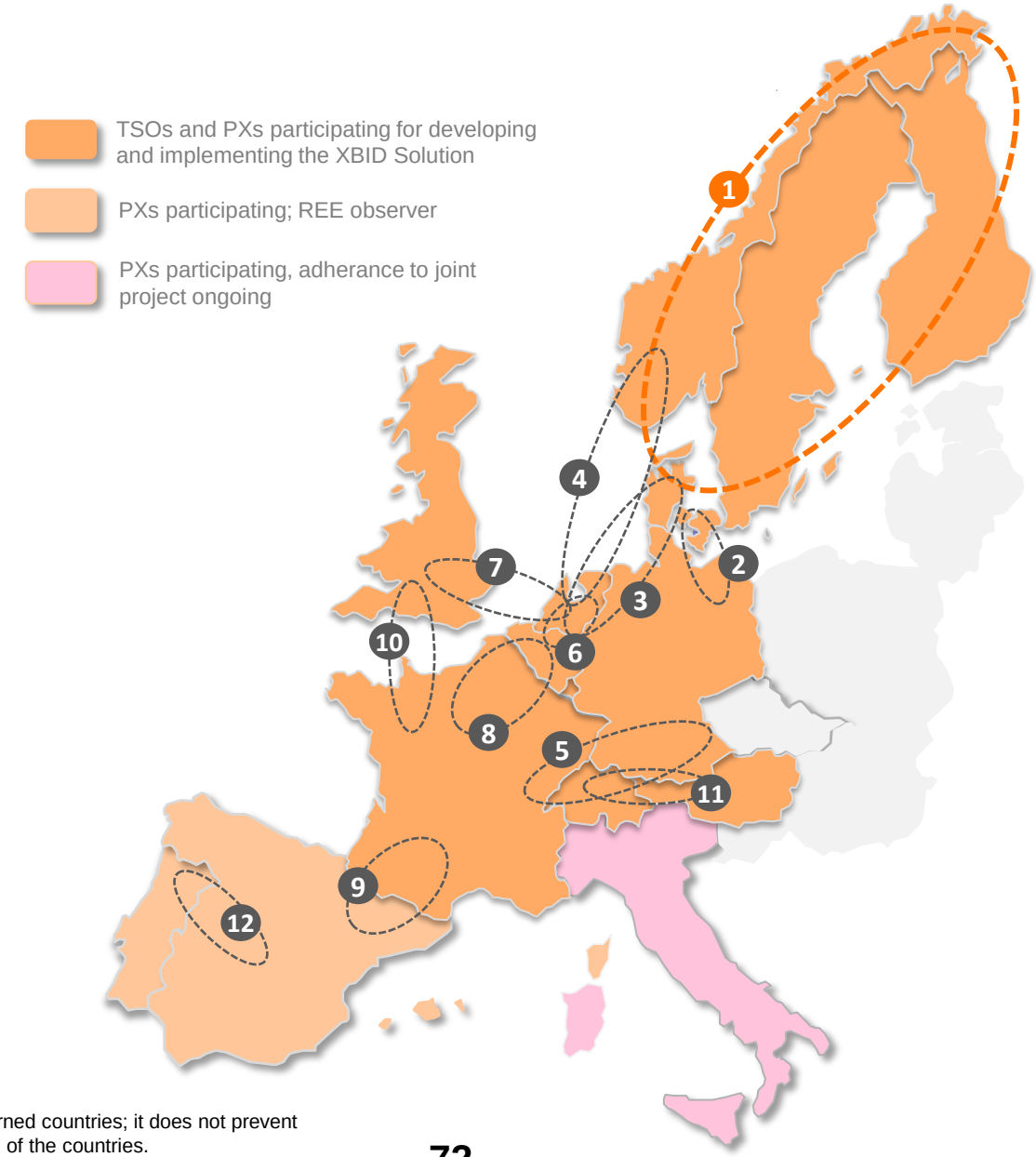
Tore Granli
Statnett

On behalf of entsoe

Supported by europex

Overview LIPs

	Draft LIP	Tentative Participants[1]
1	Nordic	Fingrid, EnDK, SvK, Statnett, NPS
2	DK2/DE (Kontek)	EnDK, 50Hz, NPS, EPEX
3	DK1/DE, DE/NL	EnDK, TenneT NL& DE, Amprion, EPEX, APX/Belpex, NPS
4	NorNed	Statnett, TenneT NL, APX/Belpex, NPS
5	FR/DE, CH/DE, CH/FR, DE/AT	Amprion, TransnetBW, APG, RTE, Swissgrid, EPEX, NPS
6	NL/BE	Elia, TenneT NL, APX/Belpex
7	BritNed	TenneT BV, National Grid, Chosen PX
8	FR/BE	RTE, Elia, APX/Belpex, EPEX
9	FR/ES	RTE, REE, EPEX, OMIE
10	IFA	RTE and National Grid Interconnectors
11	AT/CH	APG, Swissgrid, EPEX
12	ES/PT	REE, REN, OMIE



[1] The list is based on the present status of PXs active in the concerned countries; it does not prevent any other PX joining as soon as they are selected as NEMO in one of the countries.

Overview of LIP Nordic

Geographical scope

- All bidding zones in NO, DK, SE and FI including all interconnectors between the bidding zones
  - 12 bidding zones
  - 20 interconnectors

Existing ID solution in the area

- Elbas: Operated by NordPool Spot
  - Continuous market with Gate opening at 14:00 at D-1 and gate closure at H-1
  - There is no explicit access to capacity

Involved parties (TSO/PXs) in the project

- TSOs: Energinet.dk, Fingrid, Statnett, Svenska Kraftnät
- PX: NordPool Spot

Foreseen type of allocation

- Implicit

Project setup

Project structure

- A joint project group and Steering Committee has been established and is coordinating the NordLip
- Jan Rönnback (NPS) is project manager

Project focus

- Necessary changes in the local and common Nordic TSO systems based on the design of the XBID system

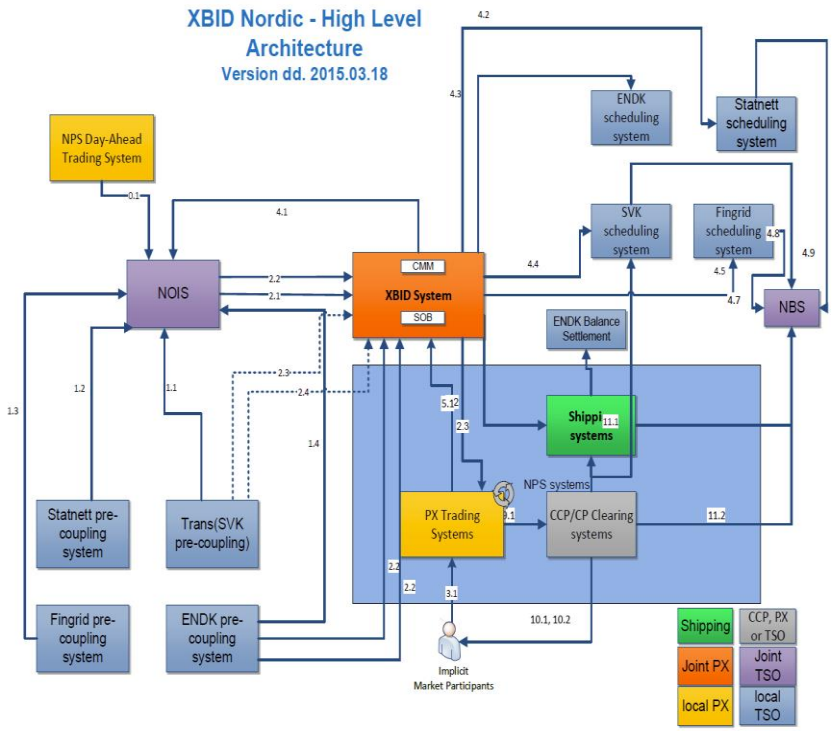
Meetings

- The group has weekly telephone conferences and quarterly physical meetings
- The project reports to a joint Steering committee

Foreseen changes NordPool Spot

- Nord Pool Spot needs to adapt their Intra-Day trading platform to integrate to the XBID platform for:
  - Seamless integration of the ID trading platform to XBID SOB enabling high performance trading in NPS markets
  - Receiving information from the XBID solution related to shipping activities
  - Publishing data to the market based on new information flows from XBID
  - Modifications to the clearing and settlement of NPS ID markets based on the XBID platform and local shipping solution
  - Possible modifications to legal frameworks and rulebook

Changes for TSOs



- TSOs and Nordic Operating Information System (NOIS) will need an interface to the central XBID system
- It has been agreed to change capacity to be submitted:
  - Net Transfer Capacity and Already Allocated Capacity will be submitted from the NOIS to XBID
  - Agreed on change in message formats
- Scheduled exchanges will be sent from CMM to the TSOs and NOIS
- HUB nominations will also to Nordic Balance Settlement (NBS) from NPS

Changes for market participants

- The market will increase geographically and has improved liquidity
- It will be possible to trade across all bidding zones that have implemented the XBID solution, i.e. from Finland to Spain and from Norway to France
- A market participant can therefore match a bid with any other market participant across Europe
  - At the same time his settlement process toward local PX remains unchanged

Shipping and Nomination

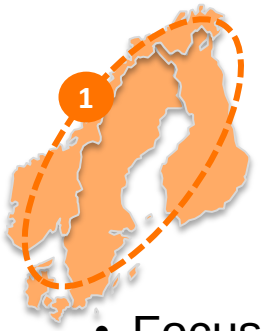
- The local implementation of XBID will result in adaptions of local TSO/PX systems and business processes for pre- and post-coupling.

Shipping arrangements

- NPS is foreseen to be the Shipping Agent and Central Counter Party on all borders.
- A shipping agreement must be made to safeguard rights and obligation for the TSOs and the CCP.
  - The content will mainly be a description of the Services provided by the parties (e.g. physical and financial Shipping) and Business Processes.

Shipping and Nomination process

- Shipping is expected to be performed on a border by border basis.



Planning and next steps

- Focus so far has been on necessary changes in the TSO systems based on agreed requirements in the XBID Business Blueprint Documents.
- The parties are currently drafting local plans.
- This will be merged into a joint plan for local planning development by mid May 2015.
- The goal is to have all local systems implemented and tested before the joint testing starts spring 2016.
- NordLip aims to be ready for testing when the central systems are finalised... and to go live in the first wave.

Coffee Break

15:00 – 15:15

XBID Cross-Border Intraday Market Project

LIP IFA

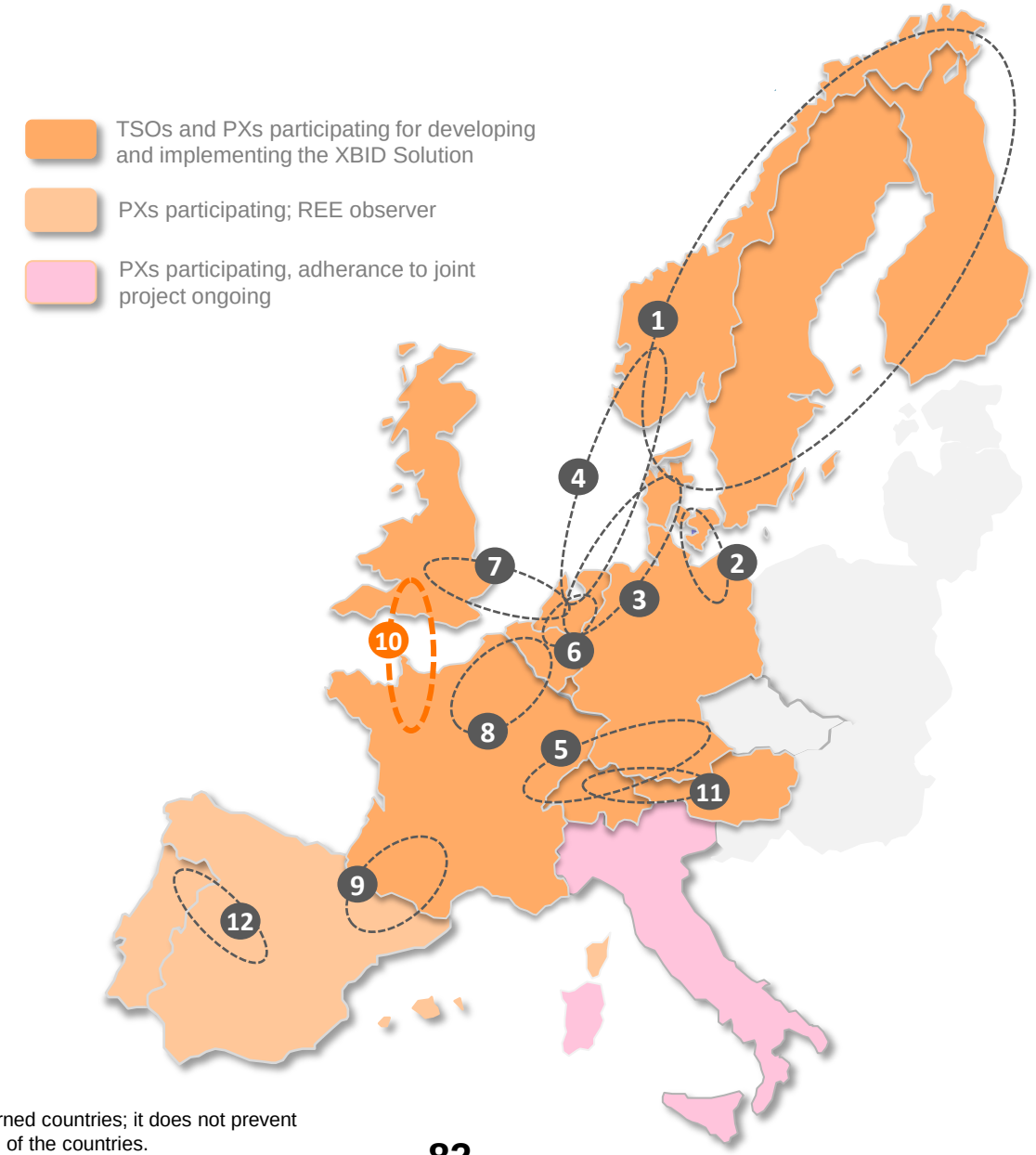
Bhavesh Suthar
National Grid

On behalf of entsoe

Supported by europex

Overview LIPs

	Draft LIP	Tentative Participants[1]
1	Nordic	Fingrid, EnDK, SvK, Statnett, NPS
2	DK2/DE (Kontek)	EnDK, 50Hz, NPS, EPEX
3	DK1/DE, DE/NL	EnDK, TenneT NL& DE, Amprion, EPEX, APX/Belpex, NPS
4	NorNed	Statnett, TenneT NL, APX/Belpex, NPS
5	FR/DE, CH/DE, CH/FR, DE/AT	Amprion, TransnetBW, APG, RTE, Swissgrid, EPEX, NPS
6	NL/BE	Elia, TenneT NL, APX/Belpex
7	BritNed	TenneT BV, National Grid, Chosen PX
8	FR/BE	RTE, Elia, APX/Belpex, EPEX
9	FR/ES	RTE, REE, EPEX, OMIE
10	IFA	RTE and National Grid Interconnectors
11	AT/CH	APG, Swissgrid, EPEX
12	ES/PT	REE, REN, OMIE



[1] The list is based on the present status of PXs active in the concerned countries; it does not prevent any other PX joining as soon as they are selected as NEMO in one of the countries.

Overview of LIP IFA

Geographical scope

- France and United Kingdom; one border UK-FR

Existing ID solution in the area

- Explicit Intraday Auctions via local auction platform (CMS)
- 2 Explicit Auctions held on the day with 3hr lead time

Involved parties (TSO/PXs) in the project

- RTE and NGIC
- PXs to be confirmed

Foreseen type of allocation

- Implicit and possibly explicit

Project setup

Project structure

- Local TSOs have had a kick off meeting, currently preparing a document detailing scope of delivery which will be shared with PXs in due course
- Governance structure in place

Meetings

- Regular teleconferences with quarterly physical meetings

Foreseen changes

Systems

- TSO:
  - Changes required to TSO systems to move to 1hr lead time
  - Local auction platform will need adapting
  - Local business procedure changes

Rules and Contracts

- Contracts between local service providers and PXs
- IFA Access Rules and Charging Methodology (GB only)

Regulatory approvals

- Following full market consultation regulatory approval to adapt IFA Access Rules will be required
- Possible additional contracts maybe required if explicit access is available on IFA

Shipping and nomination

- The local implementation of XBID will result in adaptions of local TSO and PX systems and business processes for pre- and post-coupling.

Shipping arrangements

- These are yet to be agreed upon.

Shipping and Nomination process

- Shipping will be performed on a border-by-border basis. TSOs will perform the ”cross border nomination-on-behalf” process.

Key Issues Under Consideration

Losses

- No losses considered in the current solution
- A change request is currently underway to incorporate the impact due to losses
- Implementation date yet to confirm

Explicit Access

- Explicit Access to capacity is a possibility under the interim solution
- Discussion underway with NRA.

Planning and next steps

- Review and finalisation of IFA specific HLA
- Detailed specification to enable local auction platform provider to adapt system
- Commence discussions with PXs
- The target is to have all local systems implemented and tested before the joint testing starts spring 2016 and thus be ready at project Go-Live

XBID Cross-Border Intraday Market Project

LIP FR/DE/AT/CH

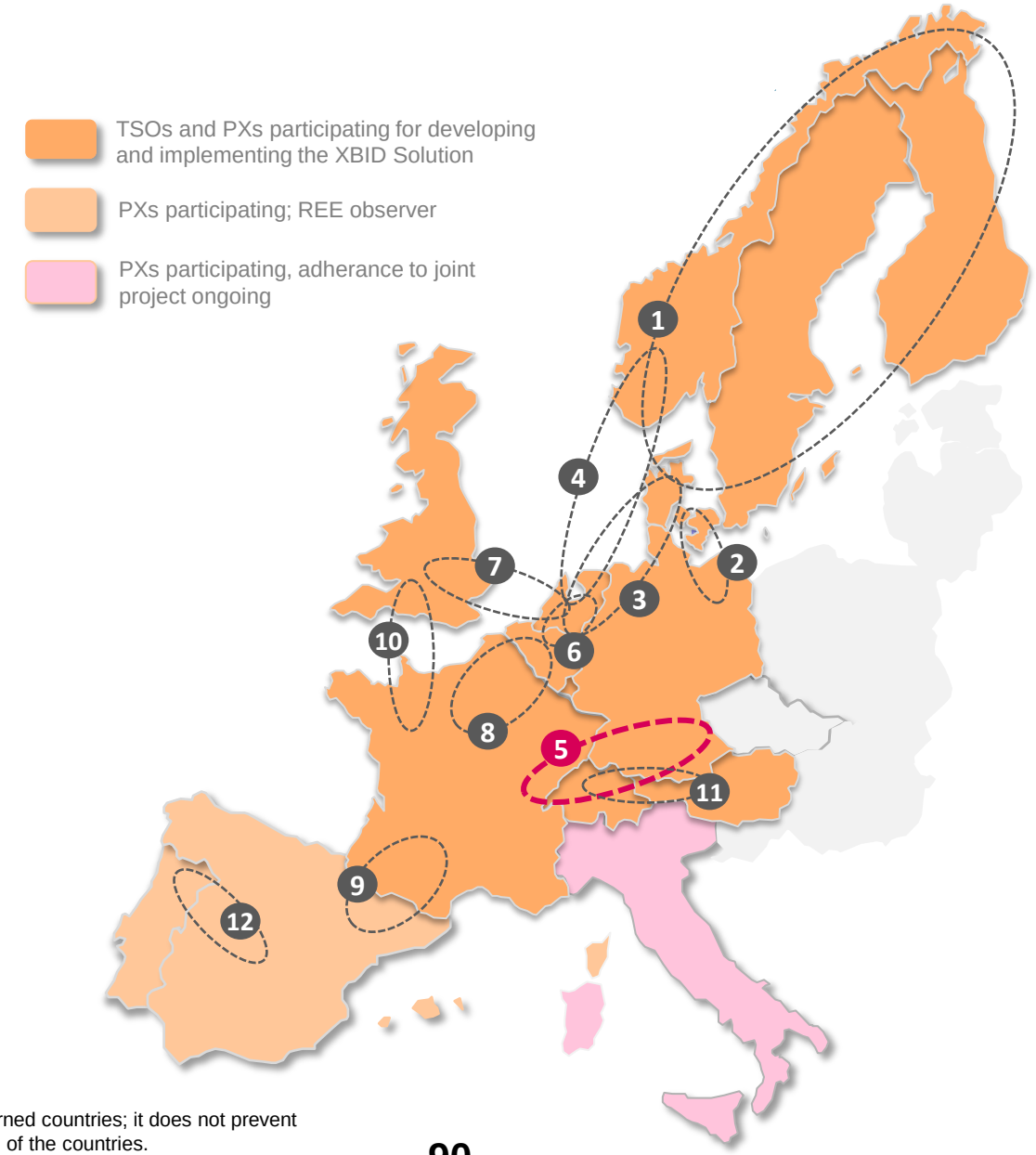
Jens Axmann
TransnetBW

On behalf of entsoe

Supported by europex

Overview LIPs

	Draft LIP	Tentative Participants[1]
1	Nordic	Fingrid, EnDK, SvK, Statnett, NPS
2	DK2/DE (Kontek)	EnDK, 50Hz, NPS, EPEX
3	DK1/DE, DE/NL	EnDK, TenneT NL& DE, Amprion, EPEX, APX/Belpex, NPS
4	NorNed	Statnett, TenneT NL, APX/Belpex, NPS
5	FR/DE, CH/DE, CH/FR, DE/AT	Amprion, TransnetBW, APG, RTE, Swissgrid, EPEX, NPS
6	NL/BE	Elia, TenneT NL, APX/Belpex
7	BritNed	TenneT BV, National Grid, Chosen PX
8	FR/BE	RTE, Elia, APX/Belpex, EPEX
9	FR/ES	RTE, REE, EPEX, OMIE
10	IFA	RTE and National Grid Interconnectors
11	AT/CH	APG, Swissgrid, EPEX
12	ES/PT	REE, REN, OMIE



[1] The list is based on the present status of PXs active in the concerned countries; it does not prevent any other PX joining as soon as they are selected as NEMO in one of the countries.

Overview of LIP FR/DE/AT/CH (1/2)

Geographical scope

Delivery Area: France, Switzerland, Germany, Austria (except for AT-CH border)

Existing ID solution in the area

- “Intraday Capacity Service” (equivalent to a CMM) provided by DBAG is in place on the concerned borders. Explicit and implicit allocation is already established using this CMM. Major adjustments with regards to CMM functionality and interfaces are not expected.
- EPEX SPOT operates currently a French, German, Swiss and Austrian intraday market platform using the ComXerv solution provided by Deutsche Börse. This trading platform is connected with the “Intraday Capacity Service” (equivalent to a CMM).
- Nord Pool Spot operates currently German intraday market platform using the Elbas solution. This trading platform is not currently connected with the “Intraday Capacity Service”.

Overview of LIP FR/DE/AT/CH (2/2)

Involved parties in the project

RTE, Swissgrid, Amprion, TransnetBW, APG, EPEX and NPS

Foreseen type of allocation

Implicit and explicit

Project setup

Project structure

- The LIP status is in the ramp-up phase and parties expect to be able to discuss project organisation commonly in the coming months.

- TSOs and PXs are currently identifying the organisational structure and the respective deliverables.

- TSOs have already started to investigate different solutions for physical shipping which is one of the main challenges.

Foreseen changes

Systems

- Scheduling system adjustments on TSO side (no changes for Market Participants expected).
- Existing PX systems will need to be adapted in time for the connection to the CMM/SOB

Rules and Contracts

- On the local level only minor adjustments of market rules (with view to harmonisation) are expected.

Regulatory approvals

- Consultation and regulatory approval of market rules might be necessary, but should be limited due to scope of expected changes.

LIP parties strive for a joint transition towards the new XBID solution in order to maintain the pooled liquidity of today's markets.

Shipping and Nomination

Shipping arrangements

- The local implementation of XBID will result in adaptions of local TSO/PX systems and business processes for pre- and post-coupling.

- Shipping arrangements (only implicit allocation)
  - Cross Border Shipping will be arranged by TSOs and PXs
  - Market Participants will nominate their PX trades against CCP like today.

- Nomination of explicitly allocated capacity will remain as it is.

Market Participants will not be impacted by the S&N solution.

Issues, risks and open points, planning and next steps

- Attention to compliance with competition and equal treatment between the PXs is required.
- An official start date has not been defined yet. However, this does not prevent parties to start working on tasks which they are clearly responsible for.
- Official start-up of the project is a pre-requisite to prepare and deliver a detailed project planning.

1. Project Status
2. Update on key aspects of the XBID Solution
3. Detailed Project Planning
4. Market Parties Perspectives
5. Local Implementation Projects – Overview
6. Local Implementation Projects – Details
7. Closing remarks, Reflections on the day

XBID Cross-Border Intraday Market Project

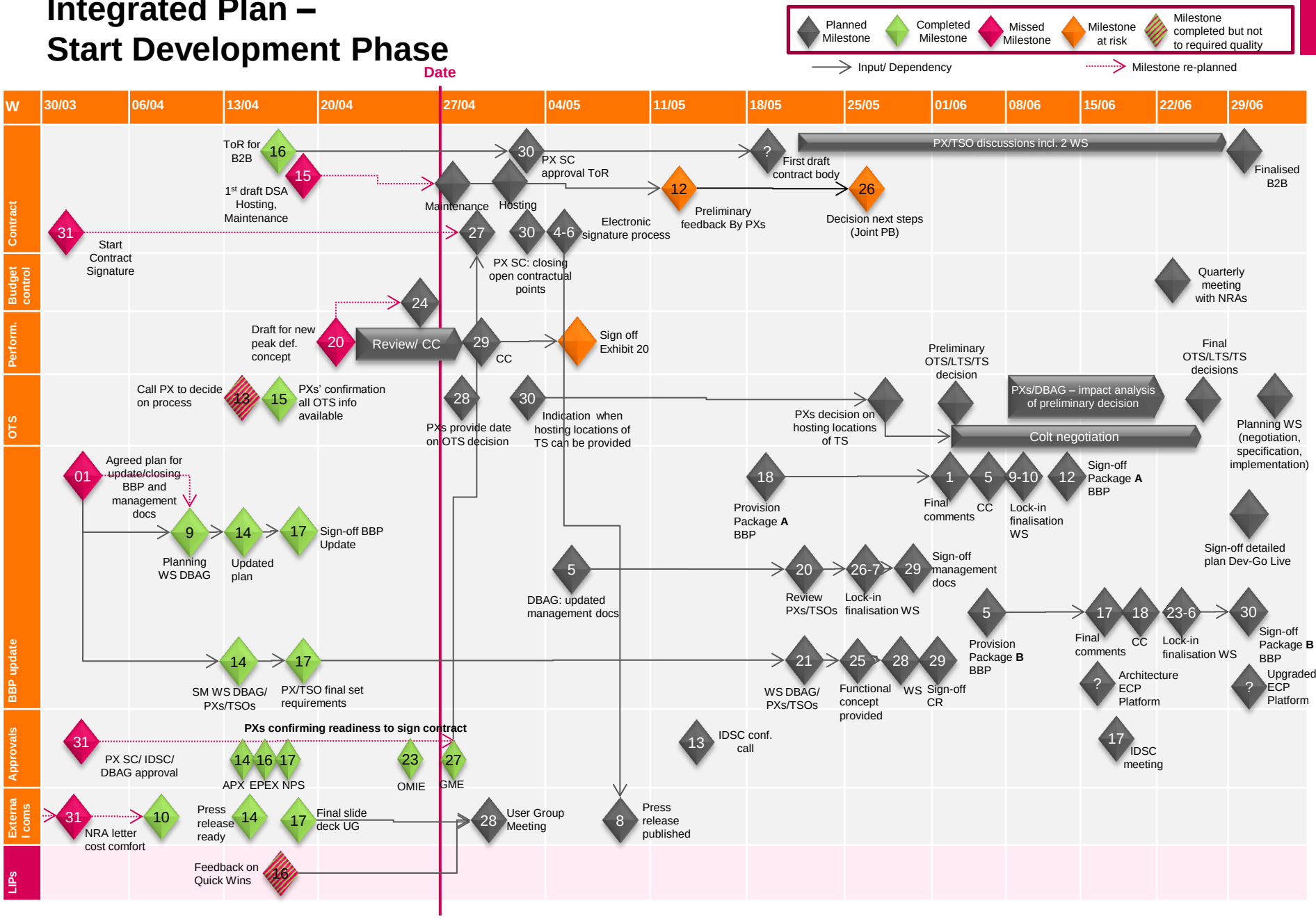
Closing remarks and Reflections on the day

Mark Pickles
TSO Project Manager

On behalf of entsoe Reliable Sustainable Connected

Supported by europex

Integrated Plan – Start Development Phase



Thank you very much for your attention!

A safe journey home……