EBS - IT

17 May 2016

Conference call:
UK Numbers Tel: 0808 238 9819 or Tel: 0207 950 1251
Participant code: 4834 7876

Online meeting:
https://meet.nationalgrid.com/antonio.delcastillozas/3BD48683
First online meeting?

Housekeeping

Agenda

1. **Introduction**

2. **Previous meeting (minutes and review of actions)**

3. **Programme Update**

4. **Industry Testing update**

5. **Transition plan**

6. **BSC Contact details**

7. **Communication plan**

8. **Closure (Any Other Business, date of next meeting)**

We have been busy

Training the Control Room Trainers directly with ABB specialists

Transition and Training Briefing with control room teams

We have been busy

User Acceptance Testing Cycle 1 covering 12 scenarios

Control Room training started for more than 120 National Grid engineers
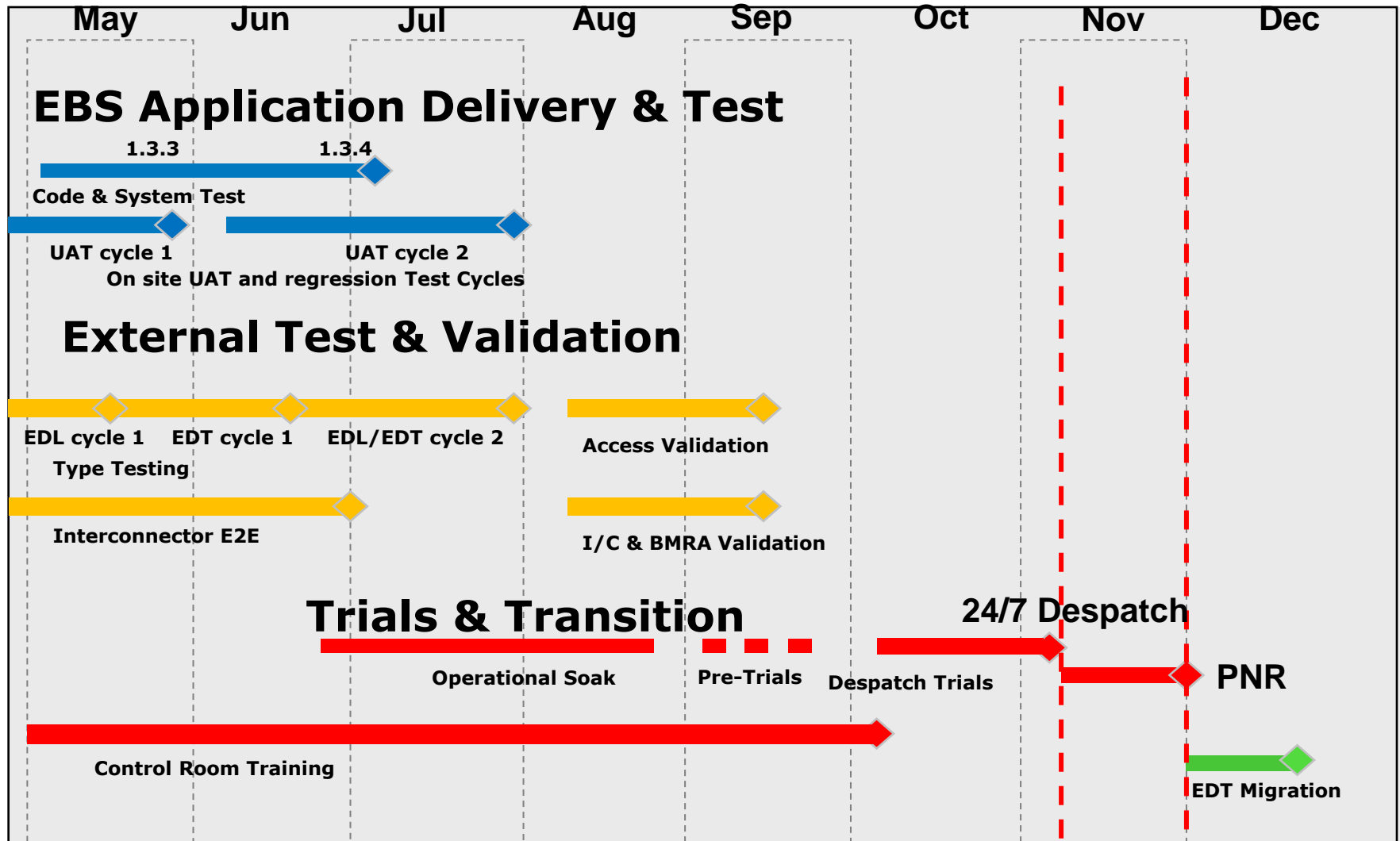
2. Previous meeting

- Comments to minutes

EBS IT **Meeting 16** - **Minutes**
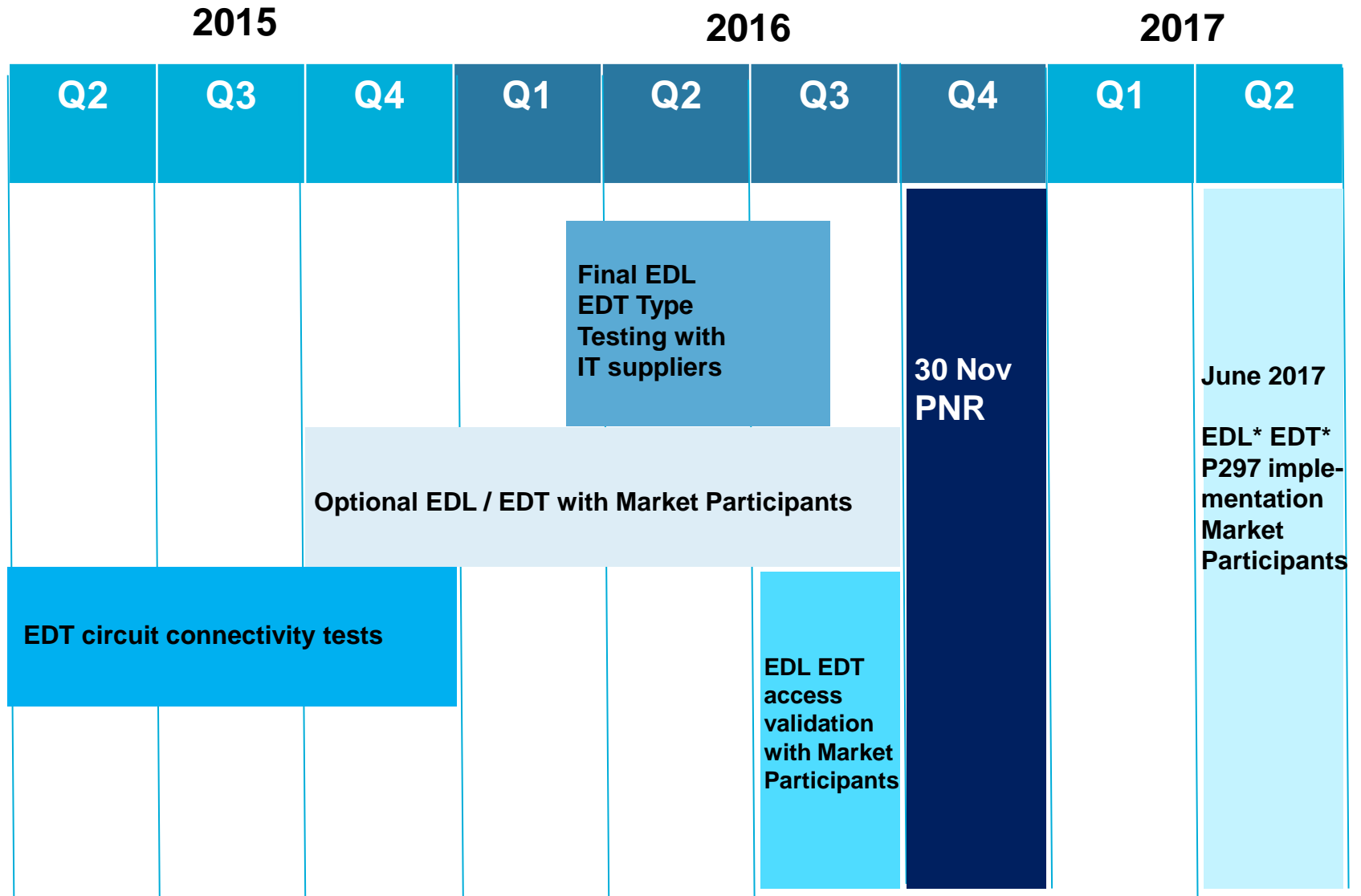
- Review of actions

EBS IT **Meeting 16** - **Actions**

3. EBS Programme Update

May	Jun	Jul	Aug	Sep	Oct	Nov	Dec

EBS Application Delivery & Test

1.3.3   **1.3.4**

Code & System Test

UAT cycle 1   **UAT cycle 2**

On site UAT and regression Test Cycles

External Test & Validation

EDL cycle 1   **EDT cycle 1**   **EDL/EDT cycle 2**   **Access Validation**

Type Testing

Interconnector E2E   **I/C & BMRA Validation**

Trials & Transition

24/7 Despatch

Operational Soak   **Pre-Trials**   **Despatch Trials**

PNR

Control Room Training

EDT Migration

4 – Industry Testing Update

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Sarvesh Kumar

High-Level Timescales

	2015			2016				2017	
Q2	**Q3**	**Q4**	**Q1**	**Q2**	**Q3**	**Q4**	**Q1**	**Q2**

Final EDL EDT Type Testing with IT suppliers

30 Nov PNR

June 2017

EDL* EDT* P297 implementation Market Participants

Optional EDL / EDT with Market Participants

EDT circuit connectivity tests

EDL EDT access validation with Market Participants

Type Test Progress

- Formal type test are rerun of various informal supplier tests and includes EBS non-functional elements

    - The focus is resilience and EBS multiple instructions capability

    - National Grid will issue the fresh type test certificates on successful completion of each supplier's test

    - National Grid will compile a new approved product register

Type Test Progress

- Formal Type Test started at the end of March

  - Formal EDT Type test initiated and issues raised

    - Issues around non-functional testing

    - Awaiting fixes (June)

    - Still progressing functional testing

  - Formal EDL Type Test initiated and defects raised in EBS

    - EDL Type Test will continue once fixes are received

    - Awaiting fixes (June)

Multiple Instructions Test

- Testing EBS capability for sending multiple instructions at the same time such as BOA, FRR etc.

    - Each BM Unit will get sets of up to 8 instructions

    - Control Points with multiple BM Units will get multiple sets of instructions

    - All instructions per set will have the same log time

    - This can be repeated for every despatch cycle

    - Expect the client system to process in the order received

- Initial testing completed with 3 suppliers

- Test to be repeated as part of formal EDL type test

Multiple Instructions

- EBS Optimiser calculates optimal output for all generators

- EBS will issue instructions to change their FPNs if marginal or behind constraints

Scheduling/Dispatch Runs   **Current Operating Plan**   **Summary Screens**
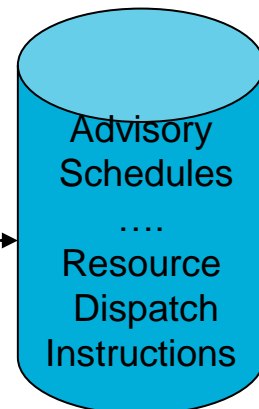
Day Ahead
….
In Day

BM Start-Up,
Contingency

Real-Time
Commitment
RTC

Interconnector Scheduling,
STOR commitments,
Response finalised,
Final Unit Commitments

Advisory
Schedules
….
Resource
Dispatch
Instructions

Real-Time
Dispatch
RTD

Final Scheduled
Operating
Levels

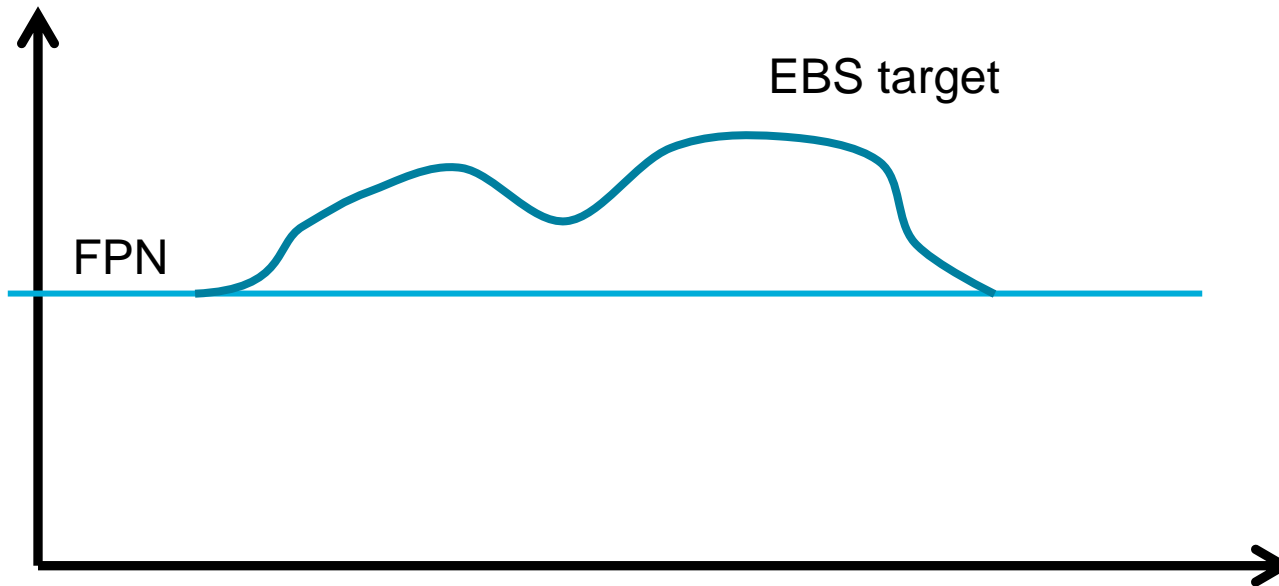Auto
Created
BOAs
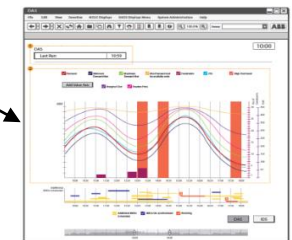
Multiple Instructions

- EBS Optimiser calculates optimal output for all generators every 5 minute cycle

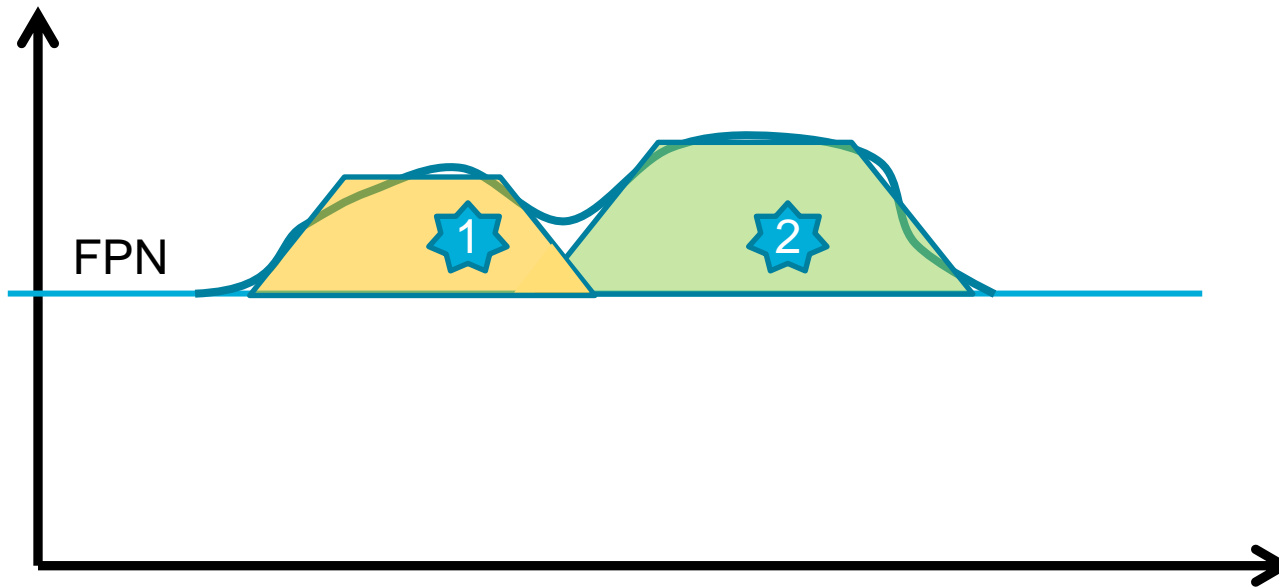   - EBS will change their FPNs if marginal or behind constraints

EBS target

FPN

Multiple Instructions

- Resource Dispatch module translates the target into instructions

  - The number of instructions per generator per cycle is an EBS setting
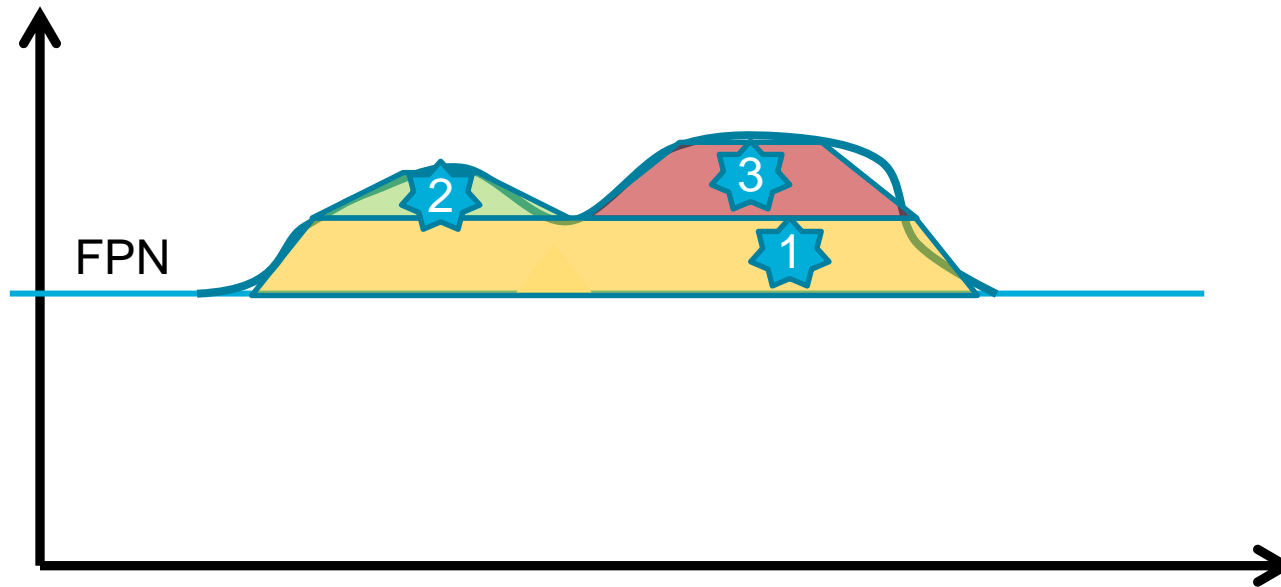
FPN

1
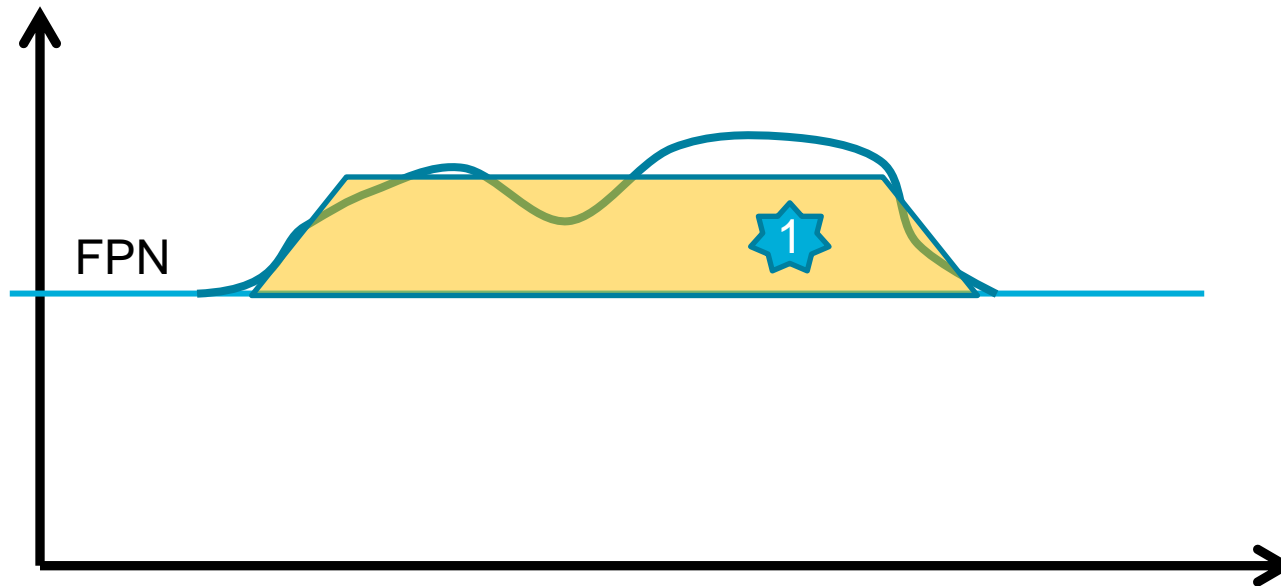
Multiple Instructions

- Resource Dispatch module translates the target into instructions

  - The number of instructions per generator per cycle is an EBS setting

Multiple Instructions

- Resource Dispatch module translates the target into instructions

    - The number of instructions per generator per cycle is an EBS setting

FPN

Multiple Instructions

- Current view is that EBS will send initially up to 3 instructions with same log time to ensure the system can be balanced in real time (to ensure the error is manageable)

FPN
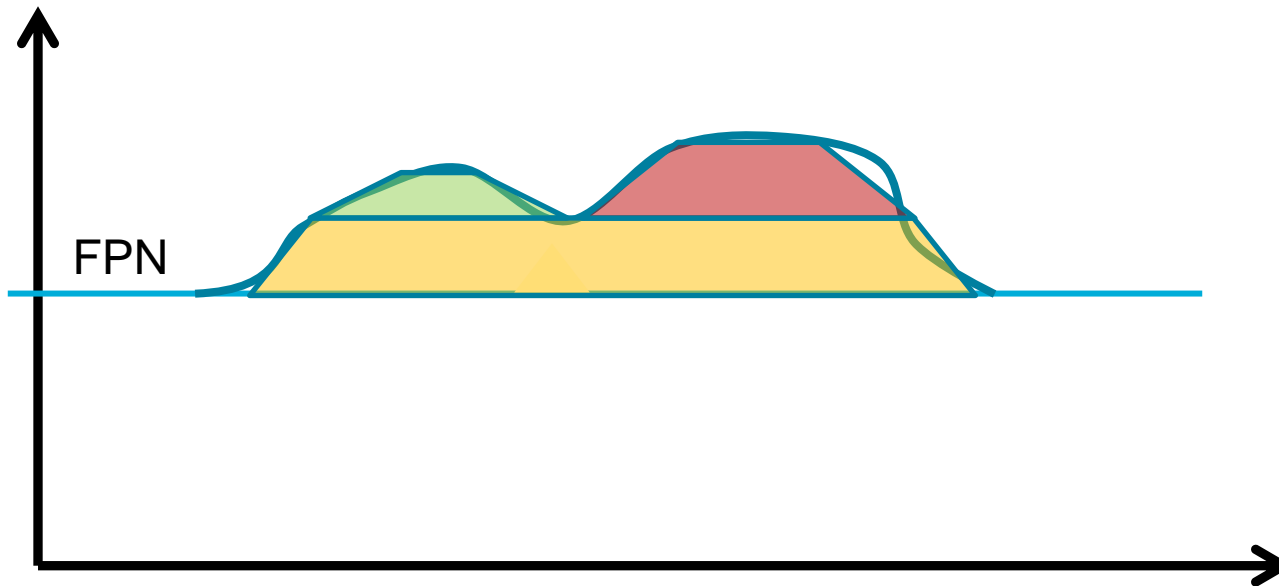
- For technical sizing we are testing up to 8 instructions to allow for future proofing in case the system gets more volatile

Update on Circuit Connectivity Tests

EDL connectivity

- Formal EDL circuit connectivity tests with Market Participants complete

EDT connectivity

- Formal EDT circuit connectivity tests with Market Participants completed successfully

Ongoing changes

- National Grid will provide facilities for retesting of any participant network and infrastructure changes as required

Tests with other external organisations

BMRA/SAA

■ End-to-end interface tests with CGI/Elexon completed

■ P297 testing with Elexon in planning stage

   ■ Implementation June 2017

Interconnector

■ Tests in progress

   ■ 2 complete, 1 in progress and 1 scheduled

■ Few observations noted which will be fixed on EBS

   ■ To be delivered in June

Next Steps

- Agree schedule and execute Formal EDL/EDT Type Test

- Complete remaining Interconnector executions

- BMRA validations planned in Aug/Sep

Summary of MP Testing Plan (EBS)

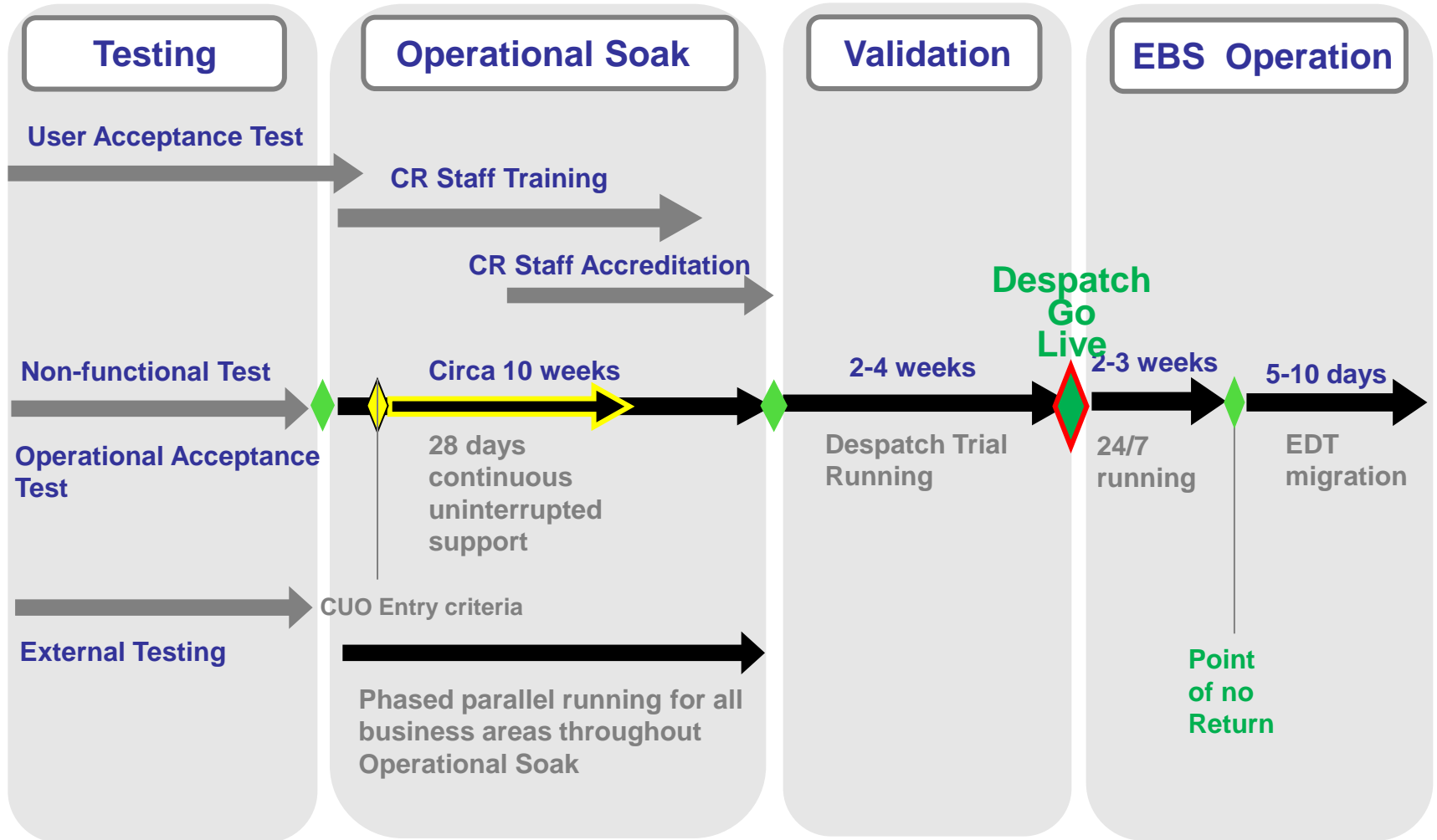| EDL/EDT Milestone	Service	Due Date	Status
NG network changes	EDL	Q1 2014	Complete
Functional Test of EBS EDL/EDT	EDL/EDT	Q1 2014	Complete
Initial Type Test executions with IT suppliers	EDL/EDT	Q2 2014	Complete
EDL Circuit Connectivity Test with MPs	EDL	Q3 2014	Complete
NG network changes for EBS Proxies and Load Balancer	EDT	Q1 2015	Complete
Initiate EDT Circuit Connectivity test	EDT	Q2 2015	Complete
EDT Circuit Connectivity Test with MPs	EDT	Q3 2015	Complete
Re-test of defect fixes for Type Test with IT Suppliers	EDL/EDT	Q4 2015	Complete
Agree Transition plan BM to EBS change over		Q4 2015	Complete
Formal Type Test (including Non-Functional Testing) with IT suppliers	EDL/EDT	Q3 2016	Progressing
Optional testing with MPs	EDL/EDT	Q3 2016	Progressing

Summary of MP Testing Plan (P297)

EDL*/EDT* Milestone	Due Date	Status
Data Validation, Defaulting and Consistency Rules document supporting EDL*/EDT*	Q2 2013	Complete
Approve ELEXON P297 (Receipt and Publication of New and Revised Dynamic Data Items)	Q1 2014	Complete
Draft EDL*/EDT* toolkit circulated to IT Suppliers and Market Participants	Q2 2014	Complete
Establish IT Supplier's access (VPN over internet)	Q4 2015	Complete
NG network changes for EBS Proxies and Load Balancer	Q3 2016	Progressing
Functional Test EBS EDL*/EDT*	Q2 2016	Progressing
Final EDL*/EDT* toolkit circulated to IT Suppliers and Market Participants on Request	Q2 2016	Progressing
Perform E2E connectivity test for VPN with suppliers	Q3 2016	Not started
Support IT Suppliers Development and Unit Test for EDL*/EDT*	Q4 2016	Not started
Agree implementation plan for EDL*/EDT*	Q4 2016	Not started
Formal Type Test (including NFT) with IT Suppliers	Q1 2017	Not started
Implement ELEXON P297 (Receipt and Publication of New and Revised Dynamic Data Items)	Q2 2017	Not started
Start changeover of Market Participant's systems to EDL*/EDT*	Q2 2017	Not started

5 – Transition

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Pete Smith

External Testing & Transition
The Plan

Testing	Operational Soak	Validation	EBS Operation

User Acceptance Test

CR Staff Training

CR Staff Accreditation

Despatch Go Live

Non-functional Test | **Circa 10 weeks** | **2-4 weeks** | **2-3 weeks** | **5-10 days**

Operational Acceptance Test

28 days continuous uninterrupted support

Despatch Trial Running

24/7 running

EDT migration

CUO Entry criteria

External Testing

Phased parallel running for all business areas throughout Operational Soak

Point of no Return

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External Testing &Transition

No significant change to External Plan or Transition Strategy

- All previously discussed and agreed phases for external test and transition remain

- A reminder - a summary of the activities for external parties can be found in the document 'EBS External Testing and Transition Overview'

External Testing
d Transition Overvi

External Testing & Transition

Key messages;

- The key Programme driver is **Quality**

- Nothing will be implemented that will threaten network security

- Transition is driven by training as much as testing

- We have employed a 'bottom up' approach to QA – starting with lower level tests and introducing more layers of complexity

- We are now testing and training with multiple layers of software & infrastructure + increasingly demanding operational scenarios

External Testing & Transition

What EDT & EDL Testing has been done?

- Extensive testing has been performed on the MI (Market Information) interfaces – EDT & EDL

  - Two rounds of system test in the supplier factory

  - 2,000 automated tests run on new releases include a significant number of EDT/EDL tests

  - Repeated replication of production EDT & EDL re-declarations through EBS for over two years

  - Informal Type Tests & subsequent fix testing with suppliers

  - Internal non-functional EDT/EDL testing against Production EBS systems
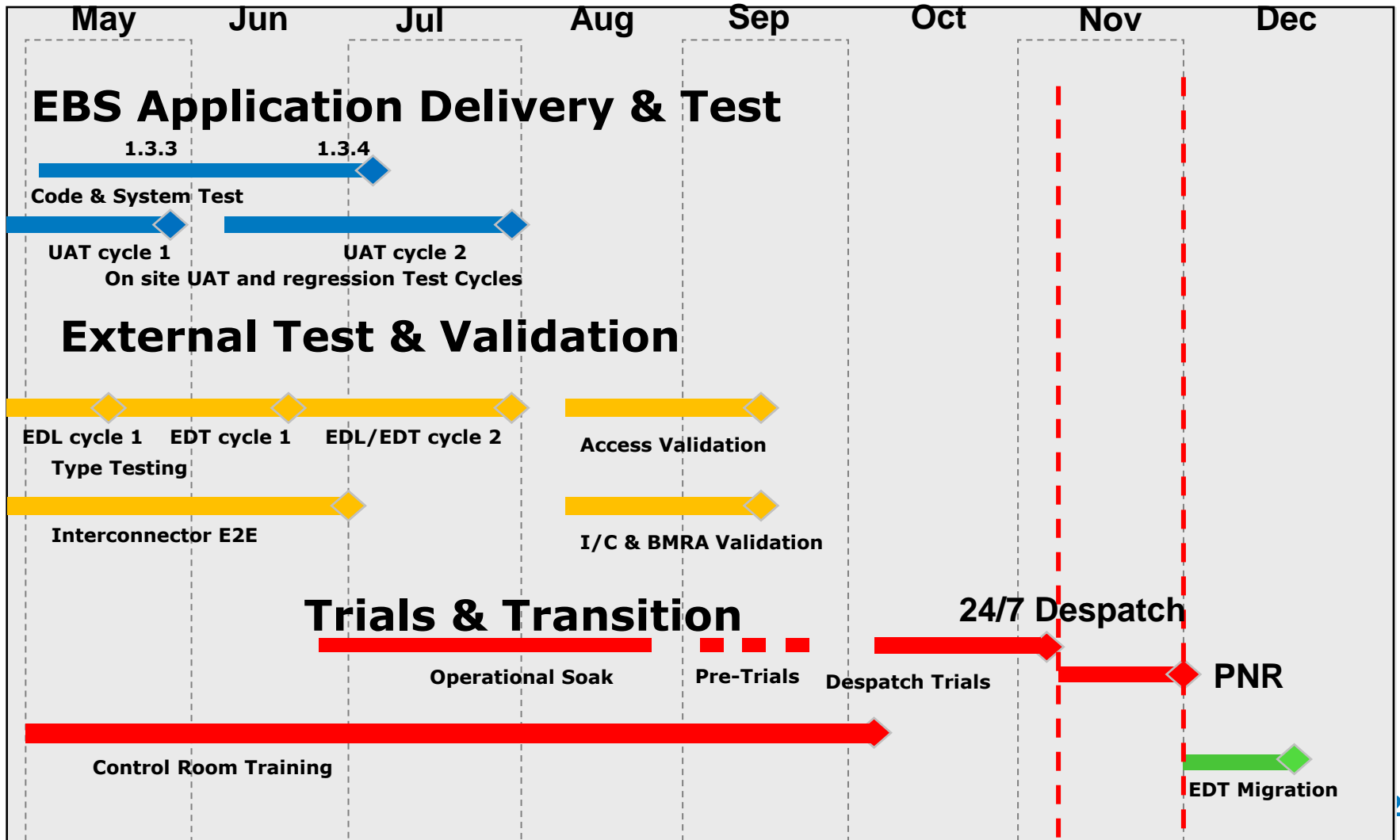
Point of No Return (PNR) & EDT Migration

- Decision communicated to Market in advance

- Reflects a Point of No Return with EBS becoming Master System

- On the Day

  - No action for Control Points

  - Inter-connectors reconfigure

  - BMRS/SAA reconfigured

  - EDT Trading Agents migrate to EBS

- National Grid Preference is to migrate Trading Agents as soon as possible after PNR

- **National Grid would like to know the minimum practical time for EDT Migration**

6. Planning for Transition

EDT Password

- EBS password – will be sent to Trading Agents 4 weeks before AVs

- BM System password – if needed, will be sent to Trading Agent on request

Audit Contact Details

- Awaiting EDT password process

- National Grid verifying the contact details held in Registration Database for :

    - BSC Parties, Trading Agents, Control Points and Software Suppliers

7. Communication strategy

- Transition plan dates

    - Draft – Sept 2015 - Complete

    - Final – Dec 2015 - Complete

    - Final with dates – 4 weeks before Access Validation

- Communication channels

    - Mainly email

    - Telephone for support when requested by the MP

7. Communication strategy

- **Newsletters**

  - Dec 15, Mar 16, May 16, Jul 16, Sep 16

- **Weekly bulletins from 1 month before Transition**

  - Plan for next week

  - Review of previous week

  - Progress of validations and trials

- **Each MP activity to have a list of announcements**

  - D – 10 Days

  - D day start

  - D day finish

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8. Closure

- Date of next meeting

- AOB