



# **DS3 Bidders Conference – Phase 2 – FFR System Services Capability Management**

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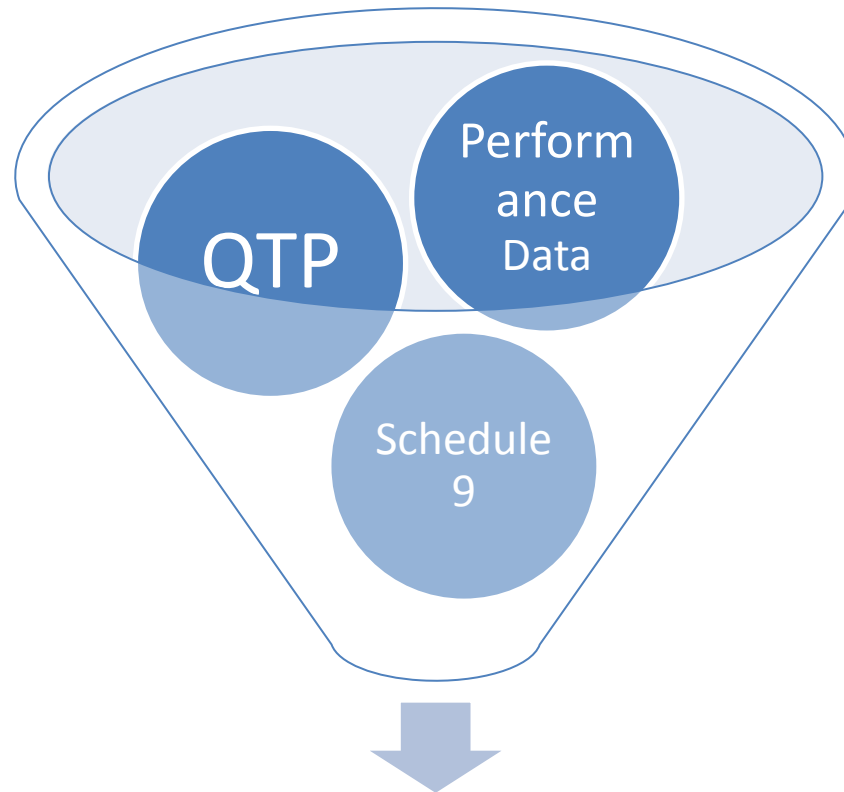
**18<sup>th</sup> April 2018**



# Topics

- Capability Management
- Commissioning and Compliance
- Guidance Document
- Testing
  - Evidence
  - Signalling and commissioning works
  - Procedure and Report templates
  - Examples
- Important Testing Dates
- Further Testing Information
- Performance Monitoring

# DS3 Capability Management



Compliance Process

# Commissioning and Compliance

A

- Review Performance Data
- Aggregator Application submission
- Test Procedures submission
- Agree schedules and parameters
- Request Signal list

B

- Signal and control commissioning
- Installation of Measurement Device
- Software updates

C

- On Load testing
- Test Data and Report

D

- Contract



# Guidance Document

- Assist units in planning and coordinating changes to capability.
  - List of proven technologies
  - Details for Test scheduling, Profiles and Tariffs
  - Requirements on Performance Data
  - Controller Modification process

# Testing Evidence

- All Providing units shall submit an approved DS3 report
- Conventional units
  - Submit approved DS3 report template based on Performance data or testing information
- Wind Farm Power Stations
  - Submit approved DS3 report template based on Frequency Response with Controller action using performance or tested data
- Signal commissioning and testing required
  - Aggregators(DSU's / AGU's)
  - Interconnectors and ESU's
  - Other approved technologies



# Signal Commissioning works

- Providing units (WFPS, Aggregators, Interconnectors, ESU's) shall request signal list update from TSO by **29<sup>th</sup> May 2018**.
- TSO will issue signal list
- Providing Unit shall have signals and controls functionality available within their own controllers on the test date
- Complete wiring works to interface point and submit wiring certificate by **17<sup>th</sup> August 2018**.

## Examples:

- [Wind Farm Power Stations](#)
  - Emulated Inertia
- [Aggregators](#)
  - FFR Availability and Control Modes (1-5)
- Interconnectors and ESU's
  - Control Modes (1-5)

# Test Scheduling

Where Performance Data is not available or changes are being made

- Engage early using the existing process'
- Review and understand requirements
- Request Signal Specifications
- Submit and agree scope of works and timelines
- TSO will review appropriate compliance elements applicable for the System Service Product
- Submit and agree testing profiles

Testing date shall be agreed with TSO by 29<sup>th</sup> May 2018 and shall be completed before **20<sup>th</sup> July 2018**

- Limited availabilities per day
- First come first served basis





# DS3 Reserve Testing Procedure

- Detail the necessary test procedures required to be performed should that data not be available
- Requirements for contract to be met
- Providing Unit to redline update i.e. Frequency Triggers and trajectories
- Signals and control functionality, deadbands, response rate and volumes shall be demonstrated
- Measurement Device to standard shall be installed
- TSO shall approve in advance



# DS3 Reserve Testing Report

- Submission of document is required if a Unit does not have an existing contract or is making changes or updates to any of the effected parameters
- To complete the report, the Unit shall have either:
  - Recorded data as per the approved DS3 System Services Operating Reserve Test procedure; or
  - Performance Data
- Any issue with meeting any requirements or completing this report, please contact [generator\\_testing@eirgrid.com](mailto:generator_testing@eirgrid.com) or [generation-outages@soni.ltd.uk](mailto:generation-outages@soni.ltd.uk) as appropriate.



# Example – Conventional

1. Evaluate existing performance data
2. Submit DS3 Testing Report template to [Generator\\_testing@erigrd.com](mailto:Generator_testing@erigrd.com) for approval
3. Include approved report as evidence as part of the Tender Questionnaire by 29<sup>th</sup> May

# Example – Aggregators providing reserve

1. Submit Application Form incl. System Services
2. Signal Requirements
  - Review Protocol and published signal list templates
  - Arrange retrofit of existing RTU
  - Submit Wiring Completion Certificate required by 17<sup>th</sup> August
3. Install and commission Performance Measurement Device Standards for Fast Acting Services
  - Provide installed spec and list of applicable sites
4. Injection Testing in line with the approved Test Procedure agreed by 29<sup>th</sup> of May for a date no later than 20<sup>th</sup> July 2018.

# Important Testing Timelines

- Early engagement before the following dates is required.
- Before 29<sup>th</sup> of May, agreed TSO Testing dates which shall not be after **20<sup>th</sup> July 2018**.
- Report (and Wiring Cert where applicable) shall be approved by the TSO by **17<sup>th</sup> August 2018**.
- The Providing Unit shall be registered in SEM by **1<sup>st</sup> September 2018** in order to qualify to provide this service.

# Further information

- All relevant testing documents published
  - Guidance Document
  - Signal Lists
  - Reports & Procedures
- Developed for industry use
  - feedback welcome

<http://www.eirgridgroup.com>





# Performance Monitoring



# Performance Monitoring of Fast Acting Services

- Service Providers shall install their own Monitoring Equipment
- DS3 Performance Measurement Device Standards for Fast Acting Service [document](#) sets out the requirements
- If TSO has Monitoring Equipment installed on the site this may be used for a maximum period of 24 months



# Assessment of Fast Frequency Response

- Assessment based on **FFR Response Time**, where T equals the length of time from the start of a Frequency Event that it takes to provide the FFR response
- Two assessments are carried out:
  1. Difference between Expected and Achieved FFR response at FFR Response Time
  2. Difference between Expected and Achieved FFR response from FFR Response Time up to T=10s]
- Performance Incident Scaling Factor calculated based on 80% of assessment 1 and 20 % of assessment 2.

## FFR Performance Incident Scaling Factor, $Q_i$

Pass  $\geq 90\%$

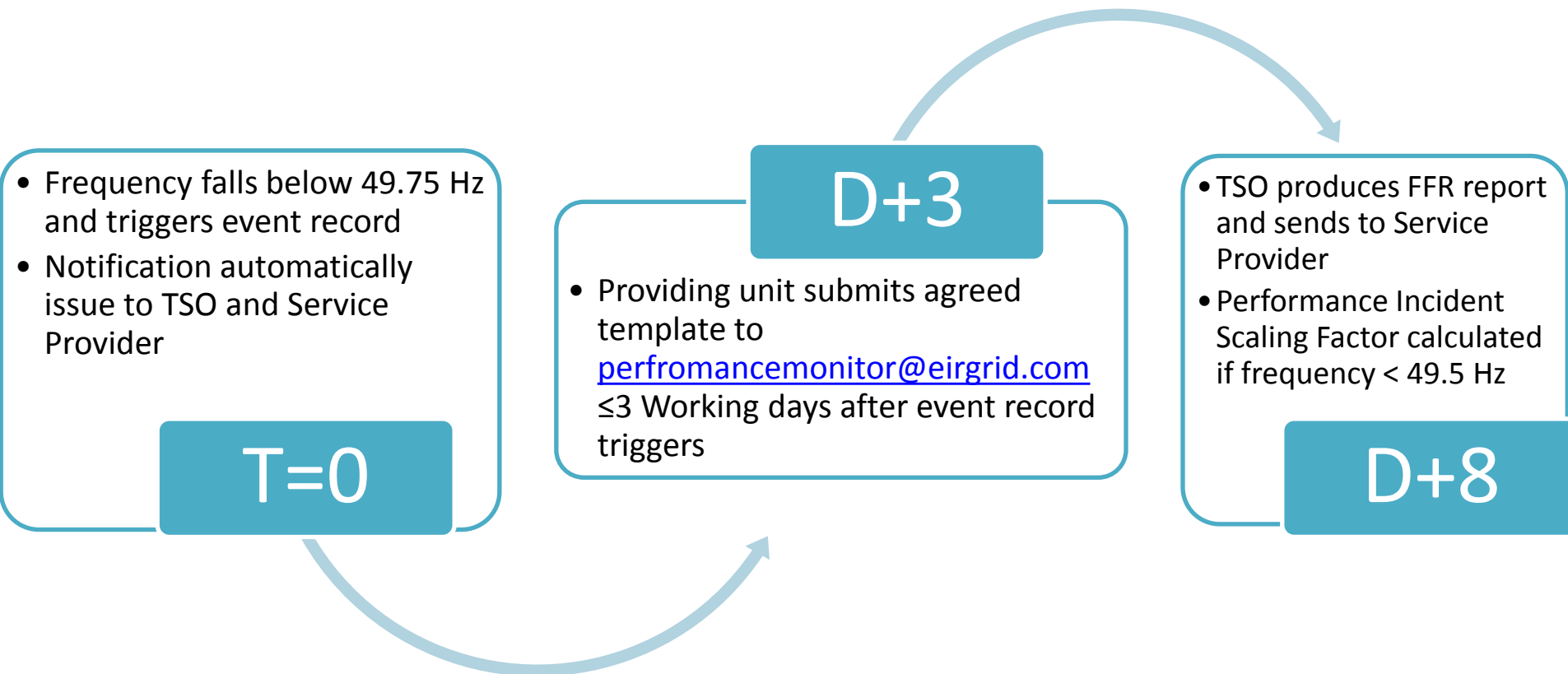
80% > Partial Pass < 90%

Fail  $\leq 80\%$

Where T=0s is the start of the Frequency Event when the frequency falls through the Reserve Trigger for that Providing Unit



# Data Provision from Service Provider to TSO for FFR



# Questions

