



Dynamic Containment (DC) / Dynamic Moderation (DM) /  
Dynamic Regulation (DR)  
Performance Monitoring Connectivity FAQ

(v4) 18/01/2022

# Version Control

Date	Version	Comments	Author
17/11/2020	1	Initial release	National Grid ESO
16/03/2021	2	Re-submission and data cleansing description updated	National Grid ESO
29/09/2021	3	Re-submission window updated, clarification on data cleansing	National Grid ESO
18/01/2022	4	DC, DM and DR updates, file naming convention updated	National Grid ESO

# Document purpose

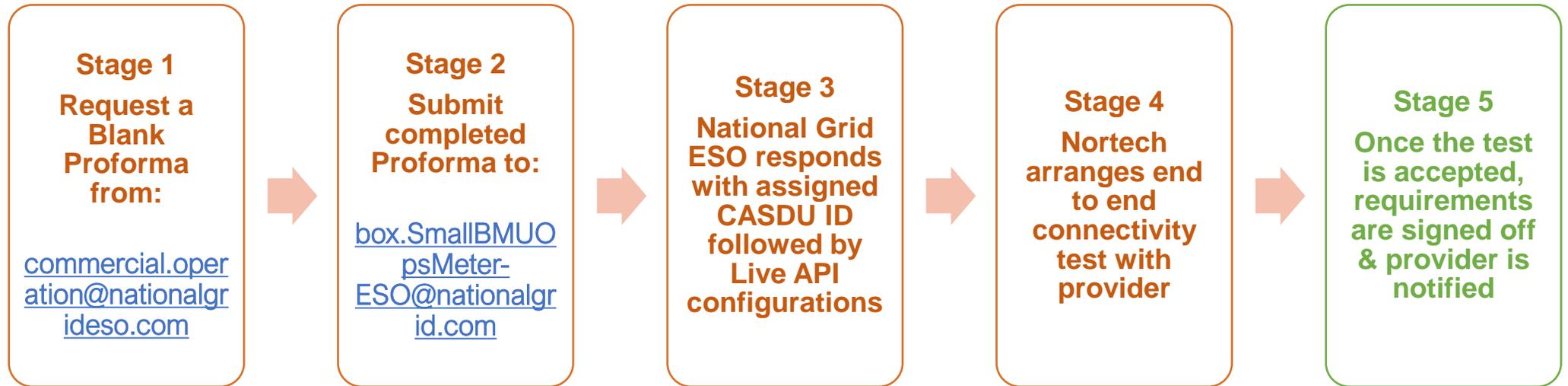
- This document aims to address frequently asked questions National Grid ESO has received on the Dynamic Containment/ Dynamic Moderation/ Dynamic Regulation service from providers with regards to data connectivity and submissions.
- It will be updated at regular intervals to address further topics as well as guidance/advice/information that providers could benefit from.
- The first edition of this document concerns first time setup and sending performance monitoring data to our API.

# Setup Process



# Where to start as a new Dynamic Containment (DC) Dynamic Moderation (DM) / Dynamic Regulation (DR) provider?

## Connectivity Process



## Where do I find the API Documentation?

The API documentation will be sent to you upon submission of a completed proforma to National Grid ESO.

## Where do I find the API CSV Data template?

The latest Performance Monitoring CSV Data Template can be found here, this will tell you how each piece of performance monitoring data sent through the API should be formatted:

<https://www.nationalgrideso.com/document/225781/download>

## How can providers submit test data?

Any test file submitted through our Performance monitoring API should have the following naming convention:

**UID\_Timestamp\_FREQ\_perfmonv1\_test.csv.**

FREQ is the Frequency of the Data in Hertz (e.g. 20Hz for 20Hz data, 01Hz for 1Hz Data)

*Example: ABCDE\_20200915170000\_20Hz\_perfmonv1\_test.csv*

*For Unit **ABCDE**, date timestamp of **2020-09-15 17:00:00**, collected at “**20Hz**”*

# How is the data being checked upon submission to the performance monitoring API?

Shortly after a successful API call, you may receive one of the following complimentary error messages to your technical mailbox if such errors exist within your submitted performance monitoring file:

Category	Error Message
General	File was uploaded after submission window closed at [close date/time]
	Unit [unit ID] has not been configured
Filename and size	Invalid filename. Not in expected format
	Filename contains invalid timestamp
	File contains data for time period that has not yet elapsed
	Filename timestamp is not at the exact start of the performance hour
	Filename contains invalid capture rate [X]. Must be numeric value between 1-20HZ
Invalid file size. Maximum allowed file size for import is 10MB	
File structure	[Line ?][Column ?] Bad CSV data
Headers	[Line ?][Column ?] Invalid header count. Expected at least [X], actual [X]
	[Line ?][Column ?] Header [header name] is not supported
	[Line ?][Column ?] Missing header [header name]
	[Line ?][Column ?] Invalid heading. Expected [header name]
Data rows	[Line ?][Column ?] File contains no data
	[Line ?][Column ?] Missing Unit ID
	[Line ?][Column ?] Unit ID does not match unit ID in filename
	[Line ?][Column ?] Missing timestamp.
	[Line ?][Column ?] Invalid timestamp.
	[Line ?][Column ?] Duplicate timestamp [X]
	[Line ?][Column ?] Timestamp is in the future (allowing 60 min tolerance).
	[Line ?][Column ?] First timestamp is not at the exact start of the performance hour
	[Line ?][Column ?] First timestamp does not match timestamp included in filename
	[Line ?][Column ?] Timestamp [X] milliseconds are not exact multiple of [X]ms
	[Line ?][Column ?] Timestamp [X] is not exactly [X]ms after previous timestamp
	[Line ?][Column ?] Missing value for [header name]
	[Line ?][Column ?] Invalid value. Cannot parse as double.
	[Line ?][Column ?] Value for [X] is outside valid range of [min]-[max][units]
[Line ?][Column ?] File contained data covering an elapsed time period of more than 1 hour	
[Line ?][Column ?] File contained [X] data rows. Expected exactly [X] data rows at [X]Hz data capture	
Catch-all	[Line ?][Column ?] Unexpected error occurred

- **Please note that these error messages are constantly being revised with new ones being added or old ones getting deleted**
- **This mechanism acts as a complimentary alerting system. Providers continue to be responsible for the data quality they submit**

# How can I re-submit corrected performance data?

In case an erroneous file is submitted with any of the error categories explained in the previous page, the provider has until 5<sup>th</sup> of the next month at 00:00:00 UTC to upload correct or amended data (with the same naming convention as before) before it is considered final. Beyond this period, the system would block any old data resubmitted.

*Example:*

*Performance file submitted at end of performance hour of 17:00 on 15<sup>th</sup> September 2020 from unit ABCDE*

*ABCDE\_20200915170000\_20Hz\_perfmonv1.csv*



*Automated email to providers technical email address states that there is an error (as listed under question 6)*



*Provider now has until 00:00 on 05<sup>th</sup> October 2020 to submit a corrected file with the same name:*

*ABCDE\_20200915170000\_20Hz\_perfmonv1.csv*



# Service Unavailability

For any unavailability period declared in the performance monitoring CSV data, the associated rows with the unavailability should have 0 submitted as the “availability” field against the correct timestamp “t” and unit id “unit”.

The remaining fields could have the metered data as normal or, if they are not available, they should be defaulted to 50.000 for frequency “f\_hz” and 0 for the fields “baseline\_mw”, “p\_mw”, “soe\_import\_mwh” and “soe\_export\_mwh”.

If a file for a full hour is not submitted, the unit will be considered "Unavailable" for that full hour.

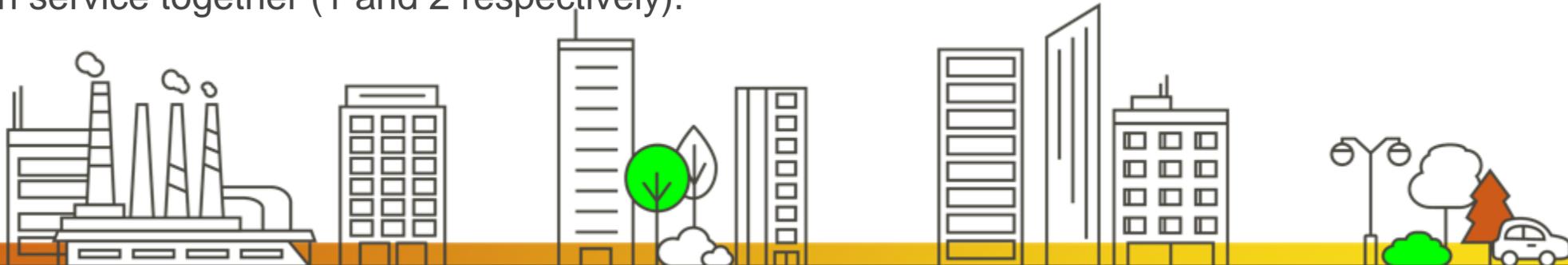


# Availability Status

The Availability Status field should be calculated by setting the relevant bits for Available Services to '1' and leaving the bits for Unavailable Services to '0'.

Bit	Service	Availability Bit Value
0	Dynamic Containment, Low Frequency	1
1	Dynamic Containment, High Frequency	2
2	Dynamic Moderation, Low Frequency	4
3	Dynamic Moderation, High Frequency	8
4	Dynamic Regulation, Low Frequency	16
5	Dynamic Regulation, High Frequency	32

Example: If a unit is available for Dynamic Containment, Low Frequency, and Dynamic Containment, High Frequency, bits 0 and 1 should be set, giving a field value of 3, calculated by adding the bit values for each service together (1 and 2 respectively).



# Armed / Disarmed Status

The Armed/Disarmed Status field should be calculated by setting the relevant bits for Armed Services to '1' and leaving the bits for Unarmed Services to '0'

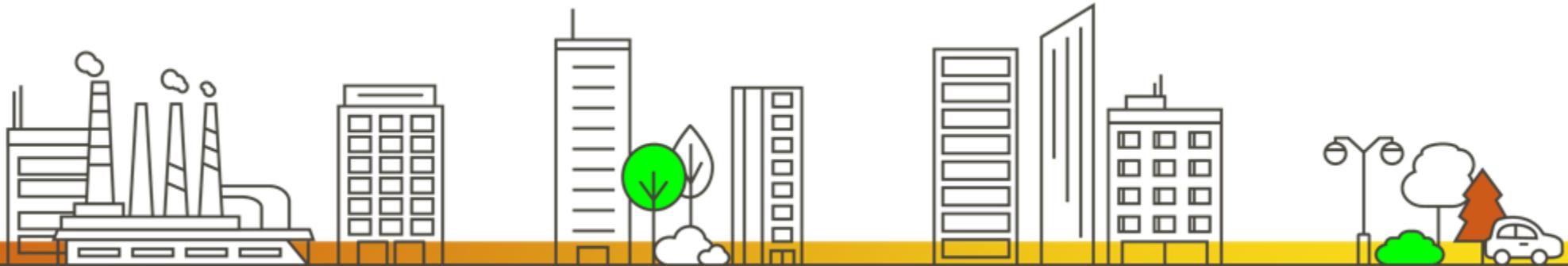
Bit	Service	Armed Bit Value
0	Dynamic Containment, Low Frequency	1
1	Dynamic Containment, High Frequency	2
2	Dynamic Moderation, Low Frequency	4
3	Dynamic Moderation, High Frequency	8
4	Dynamic Regulation, Low Frequency	16
5	Dynamic Regulation, High Frequency	32

Example: If a unit is armed for Dynamic Moderation, Low Frequency, and Dynamic Moderation, High Frequency, bits 2 and 3 should be set, giving a field value of 12, calculated by adding the bit values for each service together (4 and 8 respectively).



# Data Cleansing

- If the missing data points are recorded by the unit but not transmitted to NG system successfully, then it is highly recommended that a further attempts are made to submit a complete file as instructed in the previous slides
- If no good replacement for the missing data is available, then it is advised that the missing data points are replaced with default values (that is 50.000 for frequency “f\_hz” and 0 for the fields “baseline\_mw”, “p\_mw”, “soe\_import\_mwh” and “soe\_export\_mwh”).



# Feedback

If there are topics that you think would be beneficial to include in this document, please contact us at [box.futureofbalancingservices@nationalgrideso.com](mailto:box.futureofbalancingservices@nationalgrideso.com)

