

GC0048 – RfG Work Stream Timings

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Overview

Implementation Mods	Dependencies	On-going related GC Mods	2015		2016				2017				2018				2019
			Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1
1	Banding	X															
2A	Compliance	1															
2B	Compliance	1;4-7															
3	General	1															
4	Fault Ride Through Voltage + Reactive	1															
5	Power	1															
6	Frequency	1															
7	System Management	1;6															

Enabling/Related workstreams

X	Ofgem/DECC Member States Decisions																
	GC0086 - Open Governance																
	HVDC																
	DCC																

Key

Workgroup Output
NRA Decision

Approach for the RfG work streams

- Formed on the basis of code mapping exercise at GC0048
- x7 work streams identified (plus x2 for D-Code), which would split into sub-workgroups (also separate mods?)
 - Some sub-workgroups would be done by existing Grid Code mods, e.g. Frequency – GC0087 + GC0079
- GC0048 would convene solely to manage Banding, Compliance, and General work streams
- It would then have Project Management oversight for the technical sub-groups and ensure timely progress and feed back to GCRP/DCRP
- **What does GCRP think about this approach?**

Work stream Details

■ **Mod 1 - Banding**

- Banding thresholds levels
- Legal text to apply into the codes
- Link to licences
- CBA + public consultations
- Future changes process

■ **Estimated Completion Date: Q1 2016**

Work stream Details

■ Mod 2 – Compliance

- Type B/C/D - testing - validation of models
- ONs
- Simulation/Testing (SPGMs; PPMs)
- Derogations*

■ Estimated Completion Date (Phase 1): Q2 2016

Work stream details

■ Mod 3 - General

- Definitions
- Scope:
 - New vs Existing
 - Exclusions
 - Retrospectivity
 - Application to heavily 'modified' existing generators
 - Public consultations process
- Emerging Technologies carve out
- STC changes (Offshore?)
- CBAs (above + derogations)*

Work stream details

■ Mod 4 - Fault Ride Through **[NOT GC0062]**

- Type B-D (inc settings)
- NEW! Type B (SPGM) active power recovery
- NEW! Type B-D (PPM) fast fault current injection + active power recovery

■ Mod 5 - Voltage and Reactive Power

- Type C-D voltage stability - automatic disconnection (inc type c-d SPGM; PPM)
- Type C-D provision of active power over a range of system voltage changes
- Type C-D angular stability (incl Type D SPGM)
- Voltage ranges (B-D; SPGM; PPM)
- Type B-C (SPGM) - reactive power (inc settings; max capacity/below max capacity)
- Type B (SPGM) - voltage control
- Type D (SPGM) - excitation control system (inc AVR)
- Type C-D (PPM) - reactive power control modes (voltage/reactive/power factor) (GC0075?)

Work stream details

■ Mod 6 – Frequency [GC0087 + GC0079?]

- Type A-D frequency ranges
- RoCoF/withstand (GC0079!)
- LFSM-O, inc settings
 - reconnection + disconnection
- Maintenance of active power during falling frequency (+ parameters)
- Type C-D: period within which the adjusted active power set point must be reached
- NEW Type C-D: LFSM-U (inc settings)
- Type C-D: FSM (inc settings) (GC0087?)
- Ancillary Services Monitoring
- Type C-D: Frequency relay settings
- Type C-D: Under frequency disconnection (pump-storage/generators acting as load)
- Type C-D: Island operation
- Type C-D (PPM): Synthetic inertia

Work stream details

■ **Mod 7 - System Management**

Mostly parameter setting or evolving existing requirements:

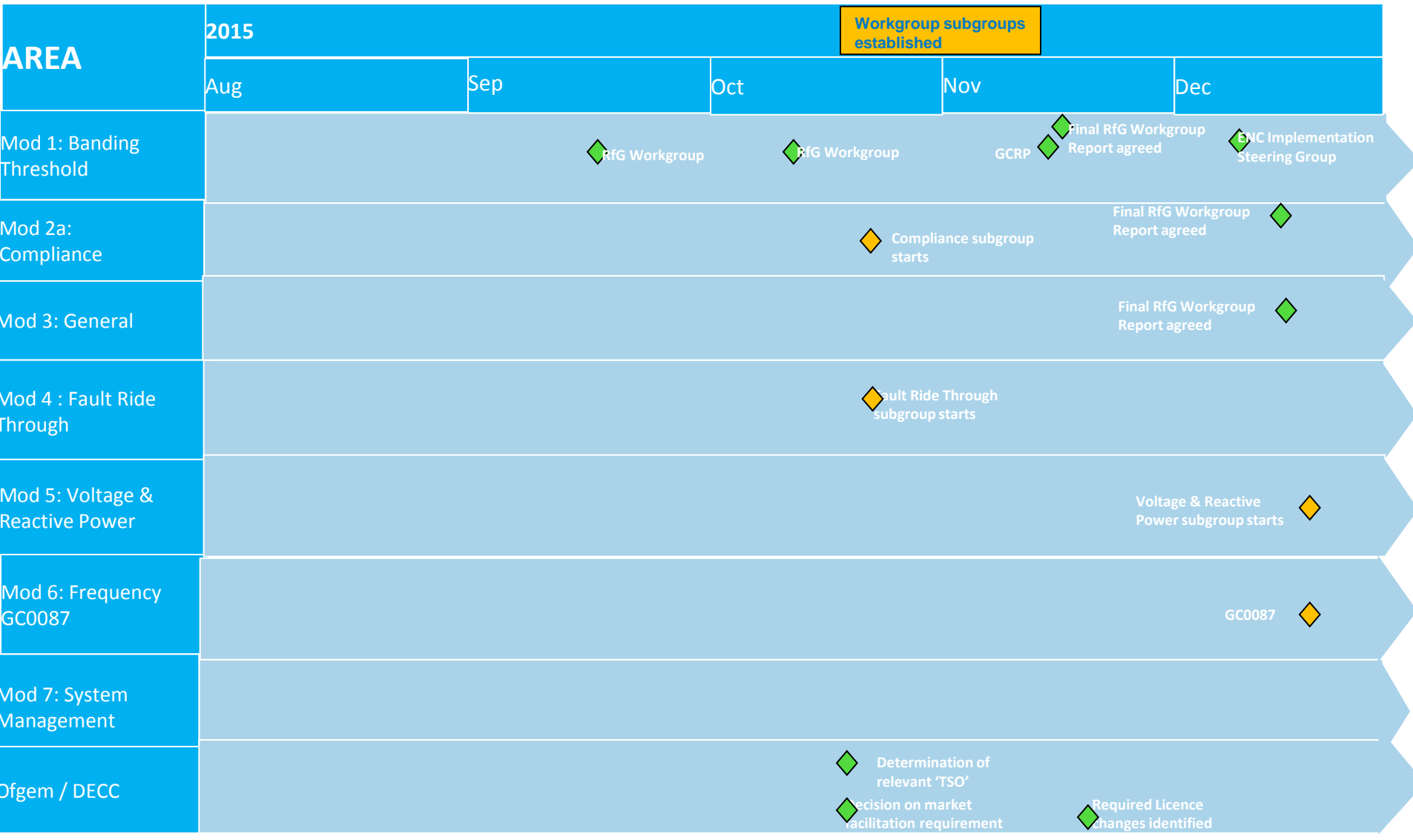
- Type A - automatic reconnection (inc settings)
- Type B - System restoration (inc settings)
- Type B - Control Schemes
- Type B - Protection
- Type B - Operational Metering
- Type C-D - Black start capability [Peter Chandler MO]
- Type C-D - quick re-synchronisation capability
- Type C-D - monitoring (DSM; fault recording; quality of supply)
- Type C-D - simulation/models
- Type C-D - devices for system operation/security
- Type C-D - ramp rates
- Type C-D - earthing
- Type D - synchronising (inc settings)

Work stream details

- ****NEW** Mod X - Regulatory Authority/Member State (Ofgem/DECC) responsibilities**
 - Determine who 'Relevant TSO(s)' for GB Synchronous area are
 - Assign actions under code to TSO(s) (RACI)
 - Confidentiality
 - Consider Licence changes

Back-up slides

RfG Plan On a Page



RfG Plan On a Page

