

Agenda Items 7&8

Requirements for Generators (RfG) - Modification Grouping, Assumptions Log, Project Plan

RfG Workgroup Meeting 5

20 November 2014

Anthony Johnson / Rob Wilson

Version 2

Packaging RfG work

- A project plan and assumption log has been developed to track modifications related to RfG deliverables
- It assumes March 2016-2017 for code implementation (ie 1 year for code implementation and another year for manufacturer implementation), this date being dependant on conclusion of the RfG drafting process *currently assumed* for March 2015
- Commencement of some work (such as banding and compliance) begins 'immediately' to ensure GB compliance by entry-into-force
- Technical requirements deriving from the Generator bandings have been bundled into thematic chunks, and will be taken forward as separate Working Groups and Modifications in 2015/16

Modification Grouping (1)

- Workstream 1 / Mod 1 - Structure / Banding
- Workstream 2 / Mod 2 – Compliance
- Workstream 3 / Mod 3 - General
 - Glossary and Definitions*
 - Remote operations / automatic connection and disconnection
 - Control Schemes and settings
 - Protection
 - Simulation models
 - Operational Metering
 - Dynamic System Monitoring / Fault Recording / Quality of Supply Monitoring
 - Synchronising facilities
 - Black Start / Island operation / Trip to Houseload
 - Rates of change of Active Power
 - Earthing
 - Plant Changes / Modifications
 - Offshore
 - Derogations
 - Emerging Technologies

Modification Grouping (2)

- Workstream 4 / Mod 4 – Fault Ride Through
 - Fault Ride Through – Synchronous / Non Synchronous (Types B – D)
 - Active Power Recovery
 - Reactive Current Injection
- Workstream 5 / Mod 5 – Voltage / Reactive Power
 - Voltage Range
 - Reactive Capability (Synchronous)
 - Reactive Capability (Asynchronous)
 - Excitation performance (Synchronous)
 - Voltage Control performance (Asynchronous)
 - Control Modes (Voltage Control, Reactive Power Control and Power Factor Control)
 - Power Oscillation Damping

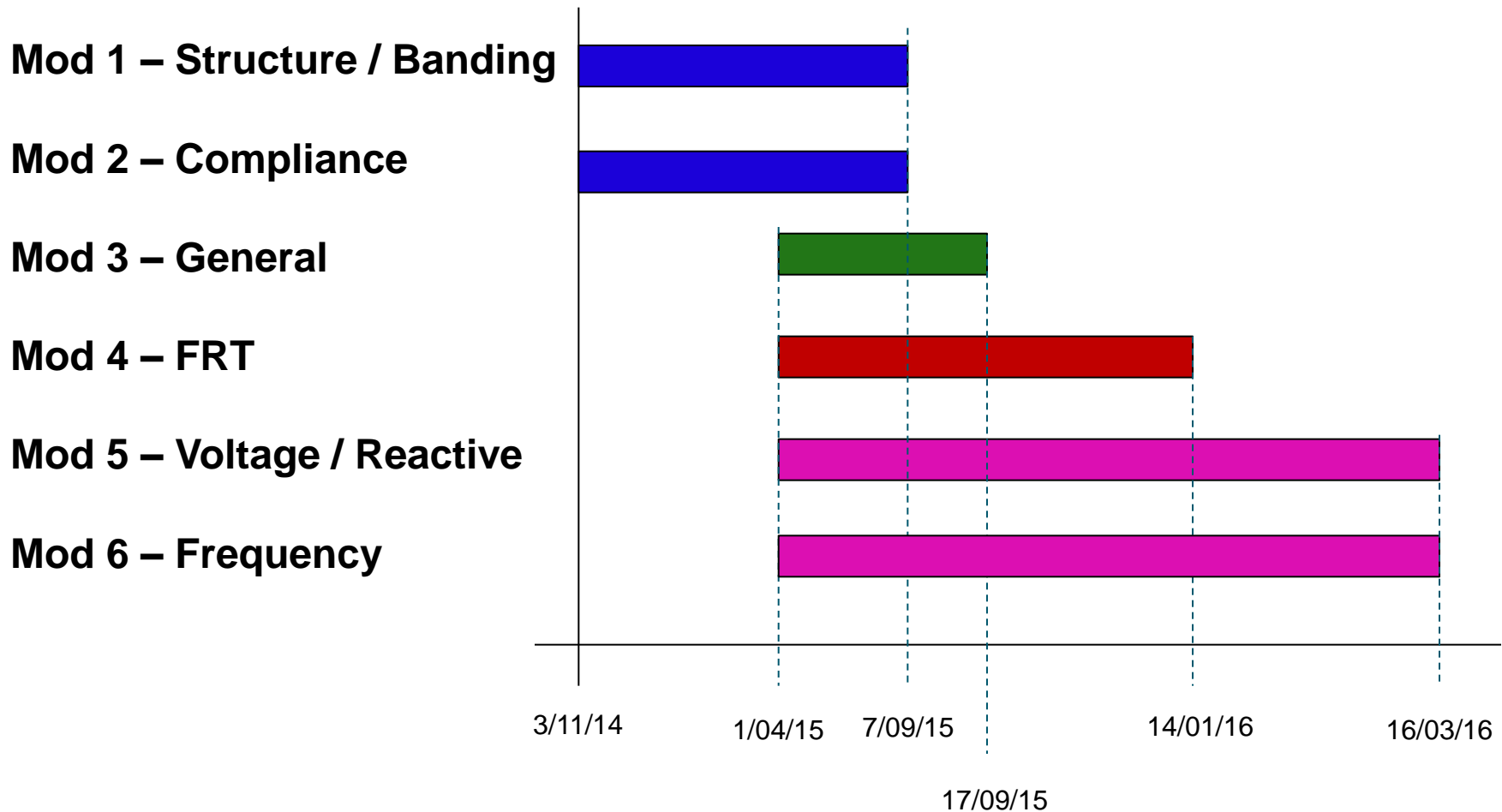
Modification Grouping (3)

- Workstream 6 / Mod 6 – Frequency
 - Frequency Range
 - Rate of Change of Frequency
 - Limited Frequency Sensitive Mode under and over frequency (LFSM-U / LFSM-O)
 - Frequency Sensitive Mode (FSM)
 - Maintenance of Active Power
 - Power Output with falling frequency
 - Synthetic Inertia
 - Ancillary Services Monitoring

Aggregation of Issues into Workstream / Modifications

- Workstream 1 / Mod 1 - Structure / Banding
 - 3/11/14 – 7/09/15
- Workstream 2 / Mod 2 – Compliance
 - 3/11/14 – 7/09/15
- Workstream 3 / Mod 3 - General
 - 1/04/15 – 17/9/15
- Workstream 4 / Mod 4 – Fault Ride Through
 - 1/04/15 – 14/01/16
- Workstream 5 / Mod 5 – Voltage / Reactive Power
 - 01/4/15 – 16/3/16
- Workstream 6 / Mod 6 – Frequency
 - 01/4/15 – 16/3/16

Timeline



Assumptions Log

- *RfG Code has a compliance window of 3 years in the Jan 2014 draft from the Entry Into Force Date, but this may be reduced*
- *RfG Code will have an Entry Into Force date of 31st March 2015*
- *Current work is based on ENTSO-E RfG Code Version dated 14 January 2014*
- *"Modifications will be made to the GB Grid Code using the current Grid Code Modification Process UKBP/TP 223 - Issue 1 – November 2012"*
- *Key individuals will be available when required throughout RfG EU Codes Implementation*

Map to project plan

Task Name	Duration	Start	Finish
EU CODES IMPLEMENTATION PLAN			
REQUIREMENTS FOR GENERATORS			
CODE DEVELOPMENT	86 days	Mon 01/12/14	Tue 31/03/15
CODE IMPLEMENTATION	260 days	Thu 31/03/16	Fri 31/03/17
IDENTIFICATION OF RELEVANT DNO AND TSO			
GB PARAMETER SETTING			
TRANSITIONAL ARRANGEMENTS			
GB CODE MODIFICATION PROCESS	358 days	Mon 03/11/14	Wed 16/03/16
RfG Modification One: Banding and Structural	221 days	Mon 03/11/14	Mon 07/09/15
RETROSPECTIVITY PROCESS			
IDENTIFICATION OF PLANT AS NEW OR EXISTING			
BANDING THRESHOLDS			
Industry Workgroup	144 days	Mon 03/11/14	Thu 21/05/15
Industry Consultation	46 days	Fri 22/05/15	Fri 24/07/15
Report to the Authority	5 days	Mon 27/07/15	Mon 03/08/15
Modification Approval	25 days	Mon 03/08/15	Mon 07/09/15
RfG Modification Two: Compliance Processes	220 days	Mon 03/11/14	Mon 07/09/15
Industry Workgroup	143 days	Mon 03/11/14	Wed 20/05/15
Industry Consultation	48 days	Wed 20/05/15	Fri 24/07/15
Report to the Authority	5 days	Mon 21/07/15	Mon 03/08/15
Modification Approval	25 days	Mon 03/08/15	Mon 07/09/15

Workstream/Mod 1 - General

Workstream/Mod 2 - Compliance

Project Plan Headlines

Task Name	Duration	Start	Finish
RfG Modification Three: General	121 days	Wed 01/04/15	Thu 17/09/15
Industry Workgroup	36 days	Wed 01/04/15	Wed 20/05/15
Industry Consultation	56 days	Wed 01/04/15	Wed 05/08/15
Report to the Authority	5 days	Thu 06/08/15	Thu 13/08/15
Modification Approval	25 days	Thu 13/08/15	Thu 17/09/15
RfG Modification Four: Fault Ride Through	207 days	Wed 01/04/15	Thu 14/01/16
Industry Workgroup	121 days	Wed 01/04/15	Thu 17/09/15
Industry Consultation	49 days	Thu 17/09/15	Wed 13/11/15
Report to the Authority	5 days	Thu 19/11/15	Thu 26/11/15
Modification Approval	35 days	Thu 26/11/15	Thu 14/01/16
RfG Modification Five: Voltage and Reactive Power	251 days	Wed 01/04/15	Wed 16/03/16
Industry Workgroup	166 days	Wed 01/04/15	Thu 19/11/15
Industry Consultation	58 days	Thu 19/11/15	Tue 02/02/16
Report to the Authority	6 days	Tue 02/02/16	Tue 09/02/16
Modification Approval	25 days	Wed 10/02/16	Wed 16/03/16
RfG Modification Six: Frequency	251 days	Wed 01/04/15	Wed 16/03/16
Industry Workgroup	166 days	Wed 01/04/15	Thu 19/11/15
Industry Consultation	58 days	Thu 19/11/15	Tue 02/02/16
Report to the Authority	5 days	Tue 02/02/16	Tue 09/02/16
Modification Approval	25 days	Wed 10/02/16	Wed 16/03/16
LICENSING			
CUSTOMER ENGAGEMENT			
Governance	605 days	Wed 19/11/14	Wed 15/03/17