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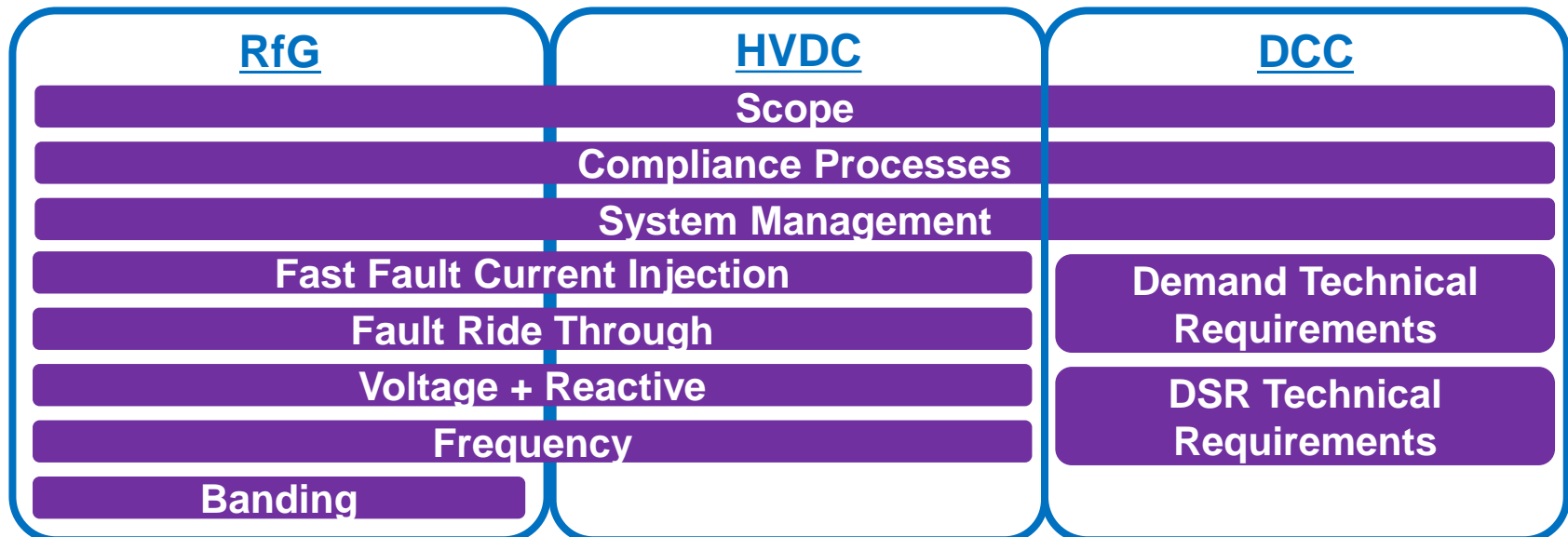# EU Connection Code Mods Overview

Grid Code/D-Code Review Panels
August 2017

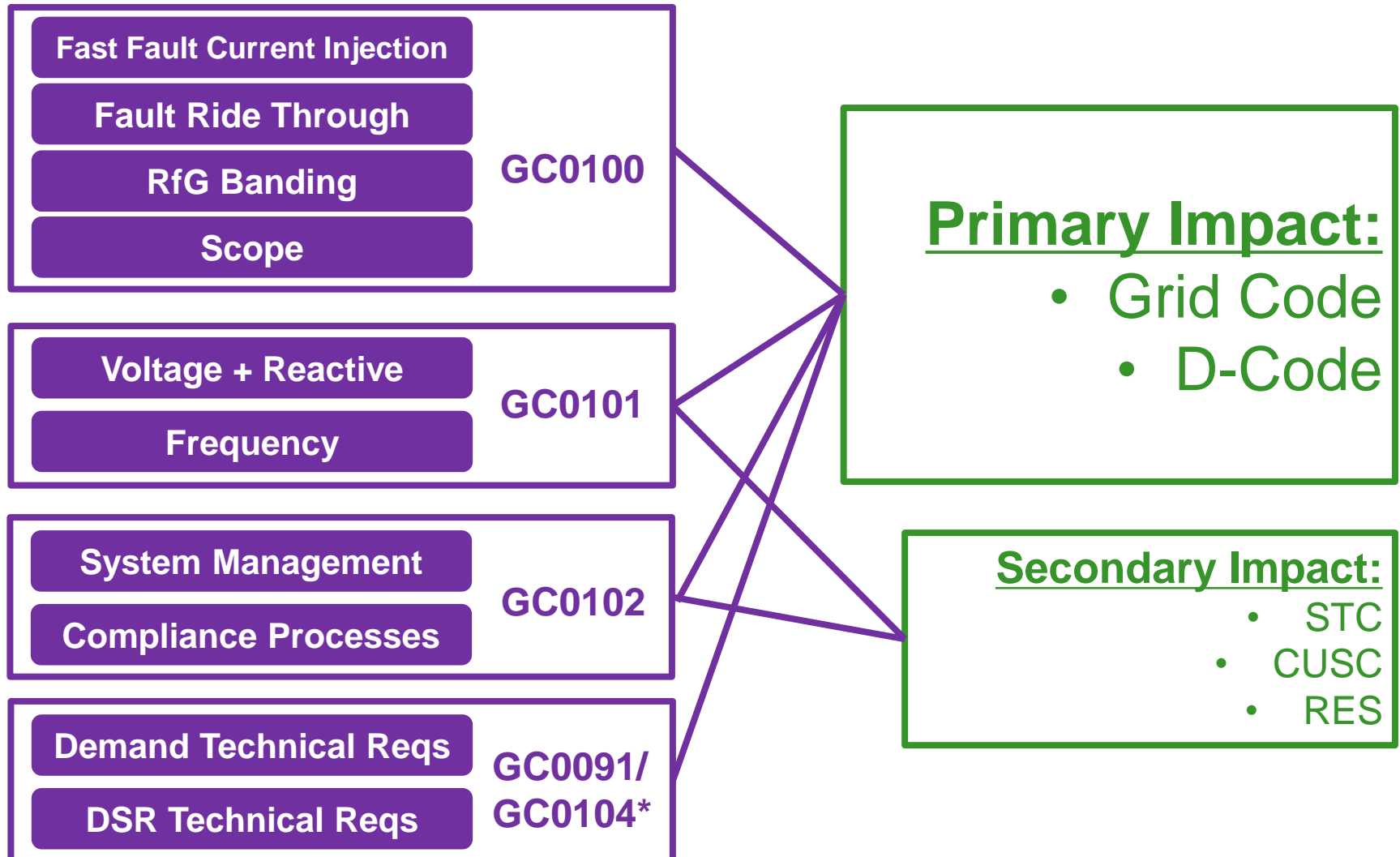# Background - Implementing the EU Connection Codes

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- Industry Issue groups were raised to understand EU Connection Code impacts. They undertook a mapping to existing GB frameworks and formed early proposals

  - GC0048 – Requirements for Generators (2014)
  - GC0090 – High Voltage Direct Current (2015)
  - GC0091 – Demand Connection Code (2015)

- **<u>Each</u>** clause in the Connection Codes was reviewed by the industry Issue groups to consider implementation:

  - For entirely new requirements a logical GB framework destination was identified
  - For similar requirements, a map to an existing code clause was set out. **The EU requirement will take precedence over the GB equivalent**

Background - Implementing the EU Connection Codes

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- The EU Code Article sections plus collections of code mappings to the GB Codes were used as a means of sub-dividing content areas for potential mods

- There were initially 10 of these, but they were later consolidated to four groups of interrelated requirements.

- From these, four mods were raised in 2017 (see next slide)

RfG	HVDC	DCC
Scope		
Compliance Processes		
System Management		
Fast Fault Current Injection		Demand Technical Requirements
Fault Ride Through		
Voltage + Reactive		DSR Technical Requirements
Frequency		
Banding		

EU Code Requirement to GB Mod mapping

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Fast Fault Current Injection

Fault Ride Through

RfG Banding

Scope

GC0100

Voltage + Reactive

Frequency

GC0101

System Management

Compliance Processes

GC0102

Demand Technical Reqs

DSR Technical Reqs

GC0091/
GC0104*

Primary Impact:
- Grid Code
- D-Code

Secondary Impact:
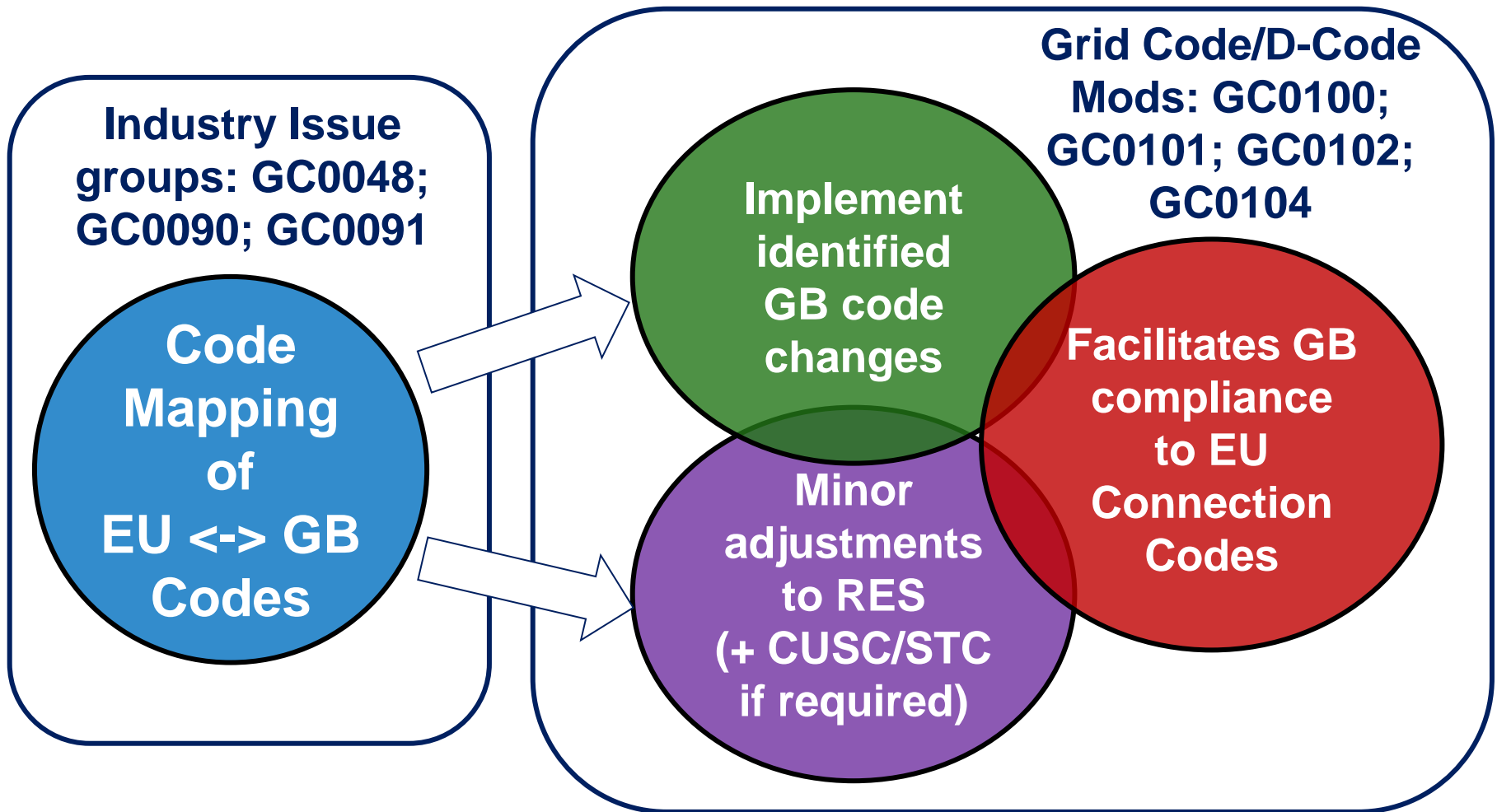- STC
- CUSC
- RES

Secondary changes to other GB codes/standards

- Along with the 'primary' changes identified for the Grid Code and D-Code, some minor adjustments ('secondary' changes) for consistency will be required in other GB Codes (e.g. STC) and supporting documents; e.g. Bilateral Connection Agreements (BCAs) and the RES

- These changes will be delivered via the GC0100-102 where governance permits, and will depend on the requirement area (e.g. GC0102 will deal with System Management changes for example)

- For the RES specifically, changes have already been identified to Protection, Control, Synchronising, Active and Dynamic System Monitoring standards – *see next slide for full table of changes*

RES references in EU Connection Code Code Mapping (including delivery mod)

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EU Code	Article Reference	Specific Requirement	GB Mapping Details	Mod Reference
RfG	Article 15 General requirements for type C power-generating modules	Real-time monitoring of FSM	Ancillary Services Monitoring covered under OC5.4.1(c) and the Bilateral Agreement and RES [TS.3.24.95_RES]	GC0101
RfG	Article 15 General requirements for type C power-generating modules	DSM & Fault Recording	CC.6.6.1 and RES [TS.3.24.70_RES]	GC0102
RfG	Article 16 General requirements for type D power-generating modules	System Management requirements (Synchronising)	Specified in Bilateral Connection Agreement and RES [TS.3.24.60_RES]	GC0102
HVDC	Article 53 Fault recording and monitoring	Clauses 1&4	TS.3.24.69	GC0102
HVDC	Article 29 Interaction between HVDC systems or other plants and equipment		Potential linkage to TS.3.24.90_RES; subject to GC0102 proposals	GC0102
DCC	Article 18 Information exchange		Potential link to RES identified, subject to GC0102 proposals	GC0102

Clarification of EU Connection Code Mods Scope

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Industry Issue groups: GC0048; GC0090; GC0091

Code Mapping of EU <-> GB Codes

Grid Code/D-Code Mods: GC0100; GC0101; GC0102; GC0104

Implement identified GB code changes

Facilitates GB compliance to EU Connection Codes

Minor adjustments to RES (+ CUSC/STC if required)

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Questions