

MICE Integration Engineering



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 - Outputs
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MICE Integration Engineering



- Integration Engineering

- » Inputs

- System 3D models = enable quick generation of ‘perfect’ geometry
- System 2D drawings = show tolerances i.e. Non-perfect sizing
- System inspection & survey = Actual sizes

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- Integration Engineering

- » Outputs

- **Overall MICE Hall model** = A record of the physical layout and volume usage
 - Generate 2D Envelope & clearance drawings from Hall model
- **Essential geometry drawing** = A specification document that shows the required placement and actual placement of the beam transport and cooling channel components
- **Interface drawing** = Shows volume occupancy (internal / external) and interface details for individual systems
- **Survey drawings** = e.g. Information for magnetic field survey

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- Integration Engineering

- » Checks

- Envelopes / Physical volume

- Ensure subsystems compatible
- Ensure systems are compatible

- Interfaces

- Ensure interface details match, including allowance for manufacturing tolerances, surveying accuracy etc
- Flexibility at interfaces

- Other

- Geometry and placement to system datums and MICE overall coordinate system.
- Services routing and connection

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- Design Change Control

- » Why?

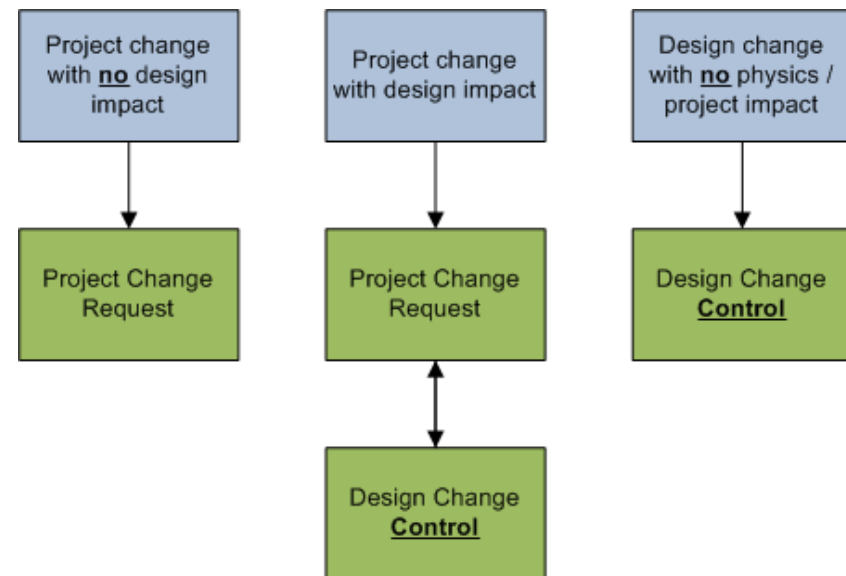
- Records the design modifications
- Forces checking of related detail

- » Who?

- Integration Engineer (based on information from systems engineering)

- » When?

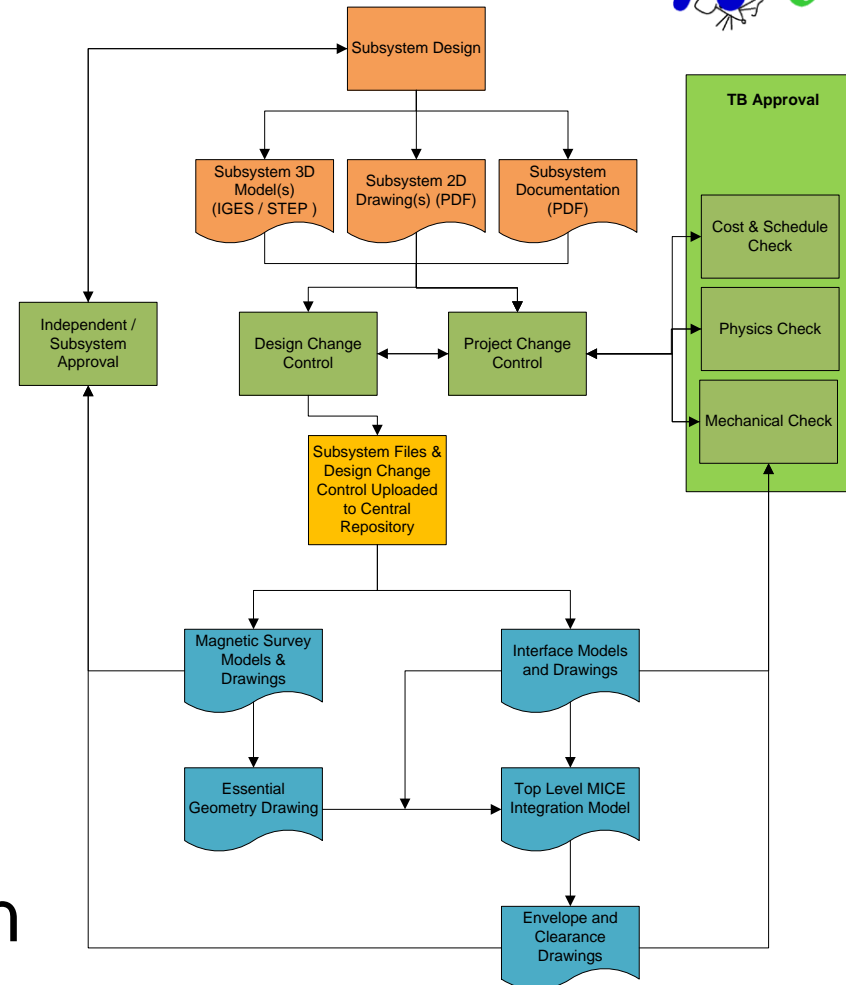
- Generated in response to:
 - Project Change Request / Control where the change needs physics or project and the design is modified - or
 - Design modification direct from systems engineers (stand-alone)



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- Design Change Control
 - » Change generated (via project change or direct design modification)
 - » Design Change Control raised
 - » Information stored in master folder / repository
 - » Integration models, drawings & documentation modified



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- Design Change Control
 - » Checks undertaken
 - Check modified Integration information matches design changes
 - Check the affects of the design changes
 - » Design Change Control completed
 - » OK to TB if required for TB decision

MICE Integration Engineering Design Change Control
Project Change Control document number (if Available):
Design Change Control document number:
Change originator:
Date:
Components and /or subsystems affected:
<input type="text"/>
Documents affected / changes required:
<input type="text"/>
Reason for changes (refer to Project Change Control if available):
<input type="text"/>
Checks undertaken and / or implications (related to Integration):
<input type="text"/>
Checker:
Checked date:
Approver:
Approval date:

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- Forthcoming Work

- » Get familiar with the systems, MICE hall and their integration (will take time but much learnt already)
- » Obtain models, drawings, inspection information...
- » Review previous interface checks
- » Create the Interface models & drawings (bulk of work)
- » Start Design Change Control and investigate information repository