Common FMEA Challenges

DIGITAL SYSTEMS

Historic Challenges?

- “Takes too long & too complicated, difficult to navigate”
- “Dedicated time and people to support, constant scope creep”
- “Inconsistent Scoring of Severity, Occurrence and Detection”
- “Many people involved, session descend into talking sessions”
- “SC & CC definition – constant discussion between departments on FMs FCs & FEs

Define Success?

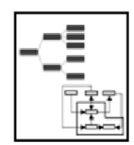
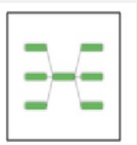
- “Generic DFMEA that is easy to understand, with links to DVP”
- “Relevant control identified not just SCs & CCs”
- “Generic DFMEA prepared for components, which can be tailored
- “SC & CC justification to wider business, and lead DFMEA with customers”
- “Knowledge is captured and accessed across the business and not **lost**”
- “Risk based mindset in the business”

Future Potential?

- “lead workshops with customers to manage their tech & product development risk”
- “Anticipate potential faults in customer products ”
- “Build and Document company knowledge”
- “Roll out to the PFMEA”
- “Live valued added document process which facilitates training & robust design”

Case Study - UKBIC DFMEA

DIGITAL SYSTEMS

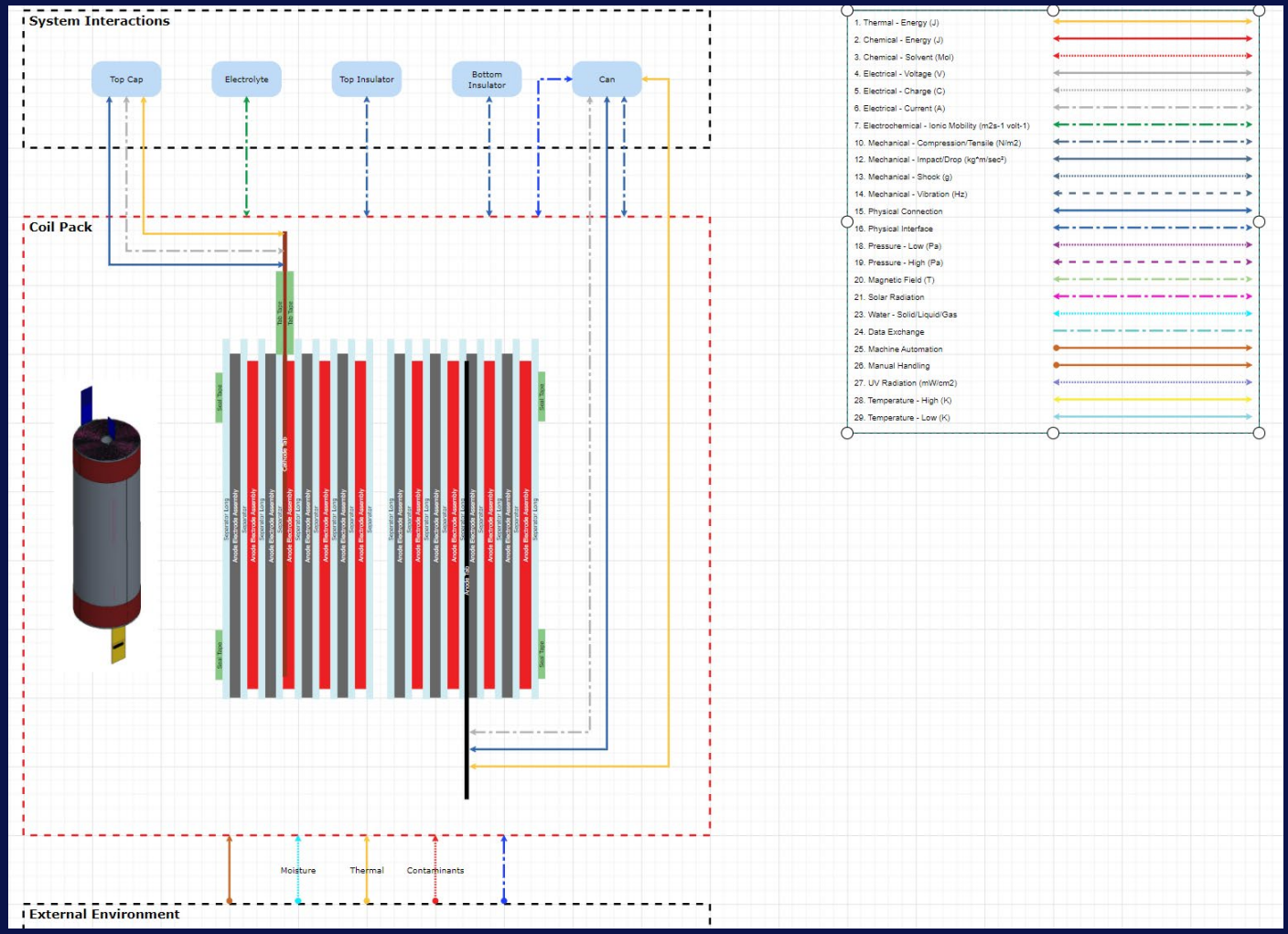
1st Step Scope Definition	2nd Step Structure Analysis	3rd Step Functional Analysis	4th Step Failure Analysis	5th Step Risk Analysis	6th Step Optimization
					
• Scope & Planning • What is included / excluded in dFMEA scope	• Boundary Diagrams • Internal Block Diagram • Interface Matrix	• Function decomposition • P-Diagrams – to include function inputs, outputs, noises and error states)	• P-Diagrams – (Partial Noises) • RCL (Cause and Effect)	• Assignment of prevention controls of failure causes and modes	• Robustness checklist (RCL) • DVP

- TJ Digital were approached to develop UKBICs NMC 21700 Design FMEA
- Structured approach using AIAG VDA 2019 standard was selected
- The scope of work included boundary, diagram, p-diagram and worksheet creation, with total time to deliver estimated at 200 hours
- A full structure analysis of eBOM from product to material level was undertaken to understand Failure Effects, Modes & Causes.
- ~1500-line FMEA worksheet for all eBOM items

Case Study - UKBIC DFMEA

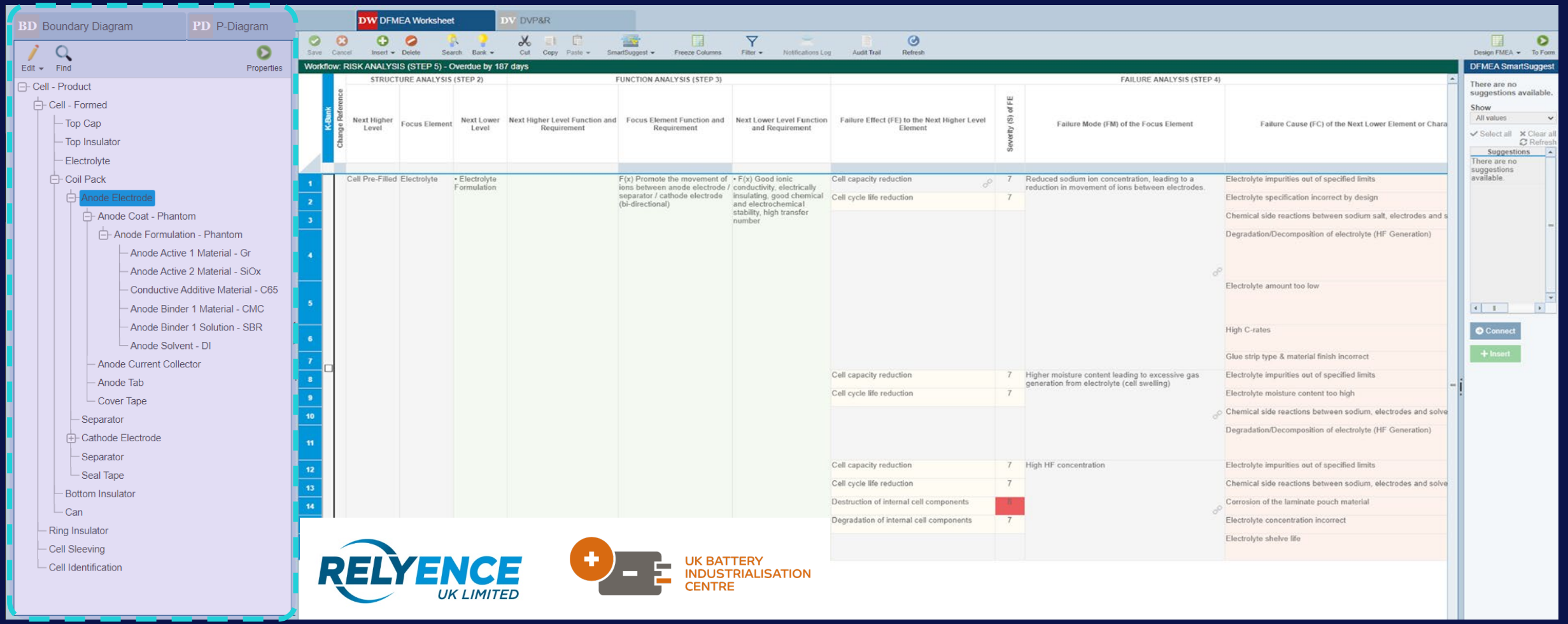
Boundary diagram are a systematic way to capture:

1. Visual representation of systems
2. **Energy** transfers / flows
3. **Interfaces** between systems
4. **Functions** of system, sub-system and component.
5. **External** environment influences



Case Study – UKBIC DFMEA

DIGITAL SYSTEMS



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