

Fault Analysis Methods and Their Impact on the Systems Reliability and Beam Availability of Accelerator Driven Facilities

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1. Fault Analysis Methods: a selection
2. Outcome from conventional fault analysis methods
3. A maybe more pragmatic approach ?
4. List of recommendations
5. Summary

- Every system and process has “failure modes”
- Analysis of failures can help to prioritize & understand the impact of risks/failures
- Several systematic methods have been developed

Failure Analysis Methods: a selection

Preliminary Hazard Analysis (PHA)

Hazard & Operability Analysis (HAZOP)

What-If Analysis

Failure Modes & Effects Analysis (FMEA)

Failure Modes, Effects and Criticality Analysis (FMECA)

Fault Tree Analysis (FTA)

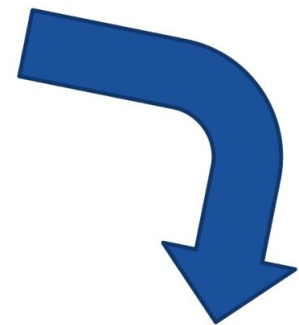
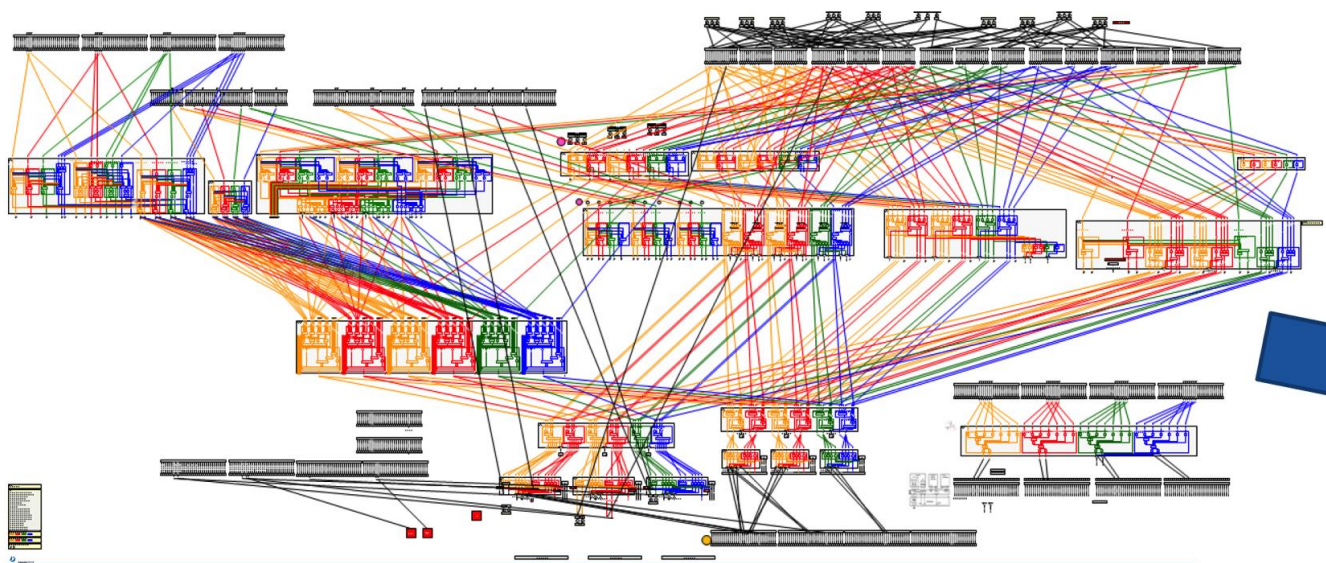
Event Tree Analysis

RAMI analysis (Reliability, Availability, Maintainability, Inspectability)

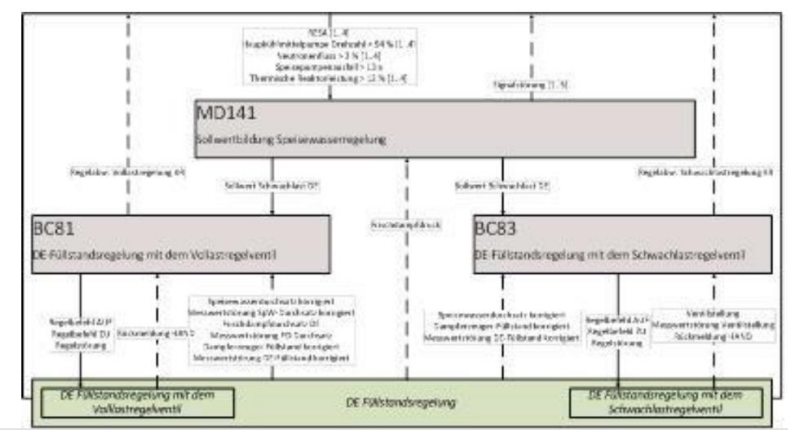
etc.....

Different approach: STPA

STPA-System Theoretic Process Analysis



Looks like the KISS principle has been applied??



Courtesy of C. Hilbes/ZHAW

Let's share ideas

