# Software Fault Tree Analysis Services

The software fault tree analysis is a misnomer as the software fault tree(s) are part of the system fault tree. One should not conduct the software FTA in a vacuum as the top level hazards for software are often the top level hazards for hardware. The FTA is one of the few analyses that can identify a failure that is due to both the hardware and the software hence another reason to not conduct the software FTA in a vacuum.
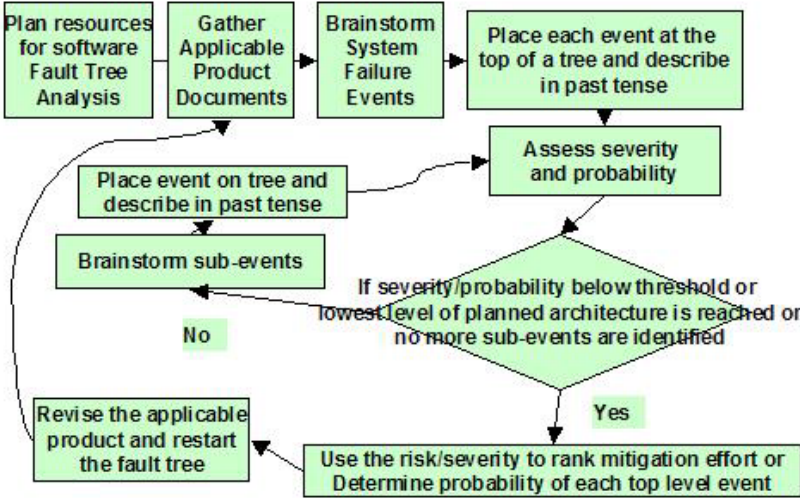


Figure 1 Software Fault Tree Analysis steps

**Statement of Work**

The system FTA is constructed with engineers representing each component of the system. Ann Marie Neufelder facilitates this brainstorming session. At each level the software is considered as both a single point failure and a multiple point failure. The following failure modes are considered:

- Faulty timing – The software executes too early or too late, encounters a race condition
- Faulty sequencing – The software executes tasks in the wrong order, not at all or inadvertently
- Faulty state management – The software encounters a dead or orphan state, transitions when it should not, fails to transition when it should
- Faulty data – The software can't handle data that's missing, null, blank, improperly formatted, improperly scaled, improperly converted, stale, wrong type or wrong size
- Faulty processing – The software is interrupted due to power loss, etc.
- Faulty error handling – The software doesn't detect or recover from faults due to hardware, computations, interfaces, etc.

## Related products and training

| Related products | Related training |
|---|---|
| System Software Reliability Module | Software Fault Tree Analysis Training |

## Pricing

Call 321-514-4659 for quotation.