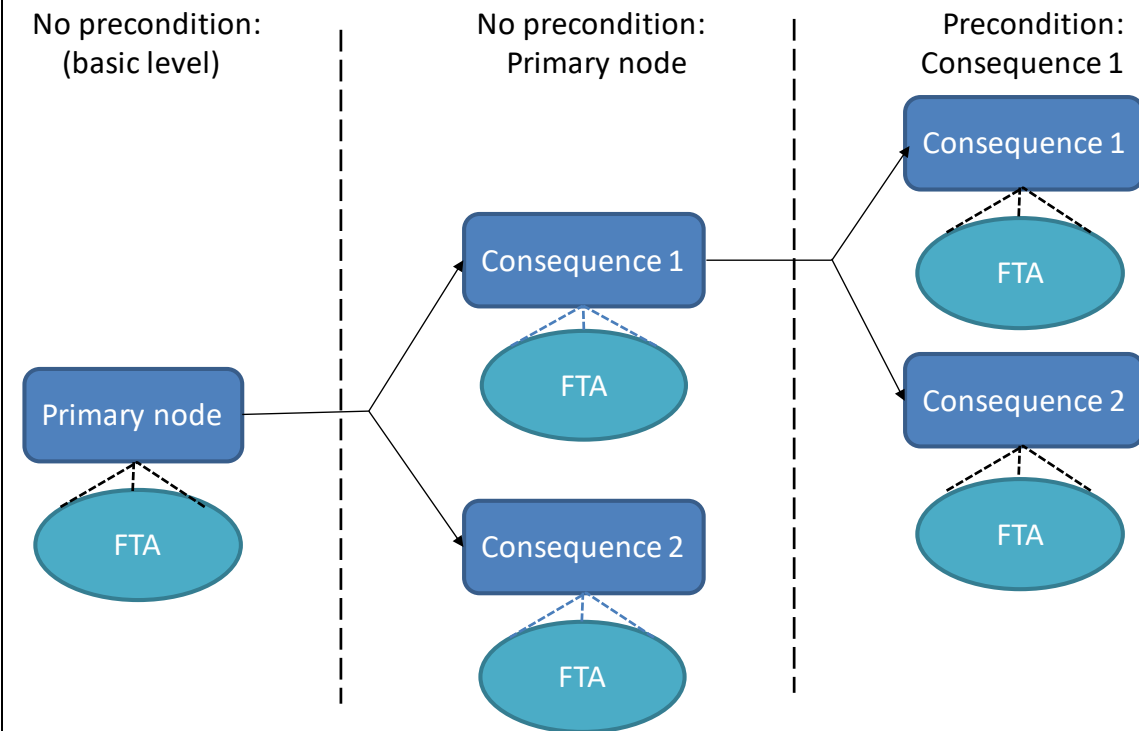


Description

The Cause-Consequence Diagram is developed based on an initiating top event that triggers a specific operational sequence or an event, which activates certain safety systems. The Cause-Consequence Diagram consists of two reliability analysis methods, the Fault Tree Analysis (FTA) and Event Tree Analysis (ETA). The ETA focuses on identifying the different paths the system could take if a top event occurs. The FTA analyses the failure causes of the systems considered in the event tree part as shown in the following figure:



Basic procedure

1. carrying out a system analysis, i.e. close examination of the system and its interfaces
2. definition of undesired events (errors)
3. determination of consequences
4. determination of the causes and failure probabilities if possible (FTA)

### Prerequisites/Aids

- System or process descriptions must be available
- Documentation that can already provide information on the causes and consequences of failures should be available

### Effort

Depends strongly on the length of the fault paths.

### Advantages

- Systematic presentation of the causes and consequences
- Measures for risk minimization can be derived
- Very comprehensive risk analysis

### Disadvantages

- Training is necessary before the first execution
- The availability of resources must be guaranteed

### Related Literature

Andrews, J.D. and Ridley, L.M., 2002. Application of the cause–consequence diagram method to static systems. *Reliability Engineering & System Safety*, 75(1), pp.47-58.