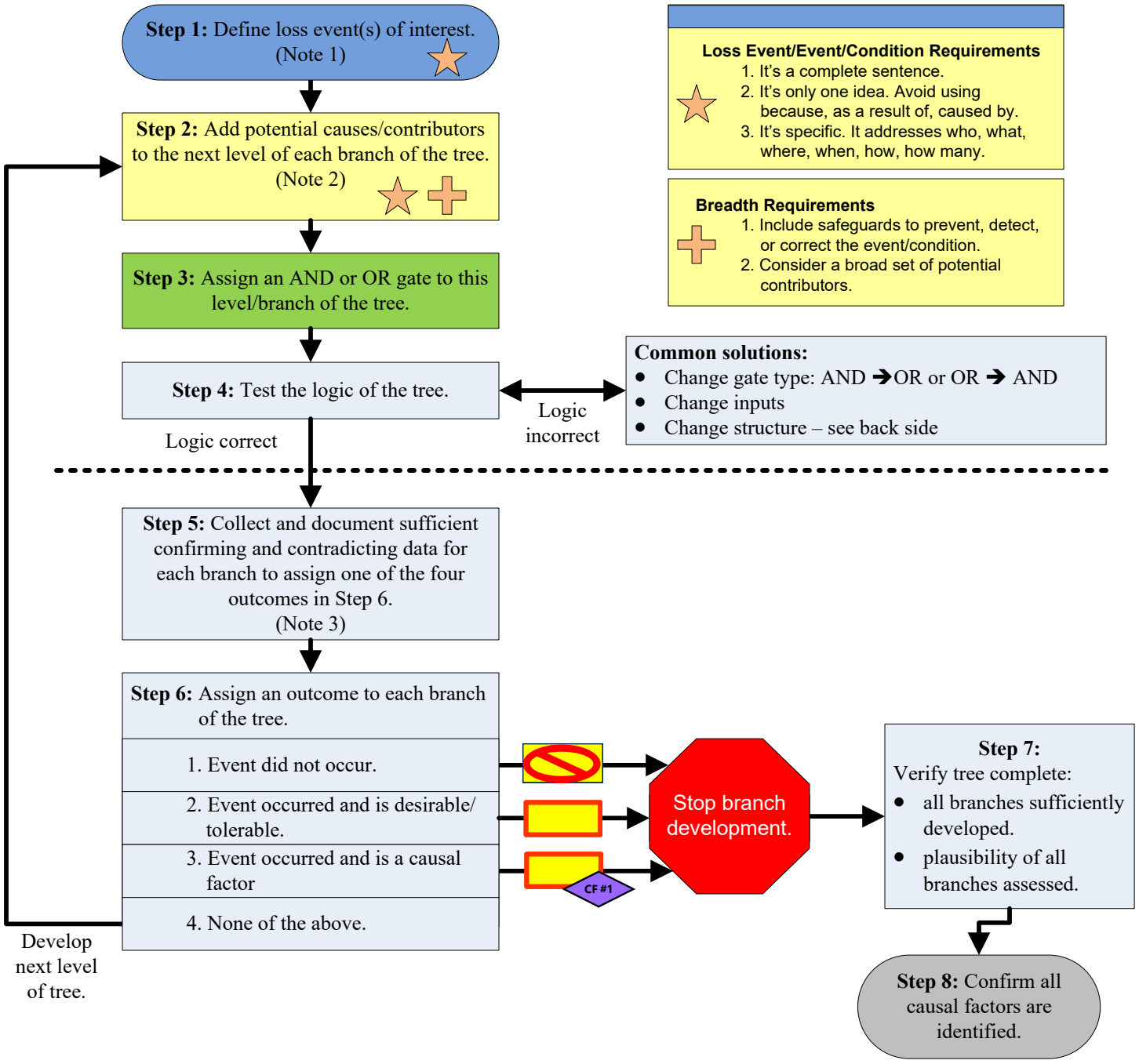
Job Aid for Creating a Cause and Effect Tree



NOTES
1. The top event is usually the loss event, but can be another performance gap associated with the incident (causal factor, intermediate cause, root cause, or item of note).
2. Work from general to specific (e.g., system, subsystem, components, subcomponents, etc.). Use the generic structures for component failures, human errors, and safeguards.
3. If the item cannot be assessed at this level, return to step 2 and continue branch development.
   If no more data are available (do not exist or too expensive to obtain), develop recommendations to create more data for the next RCA, or, develop recommendations with existing data.

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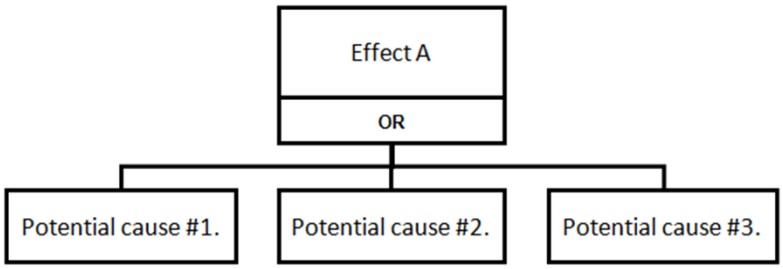


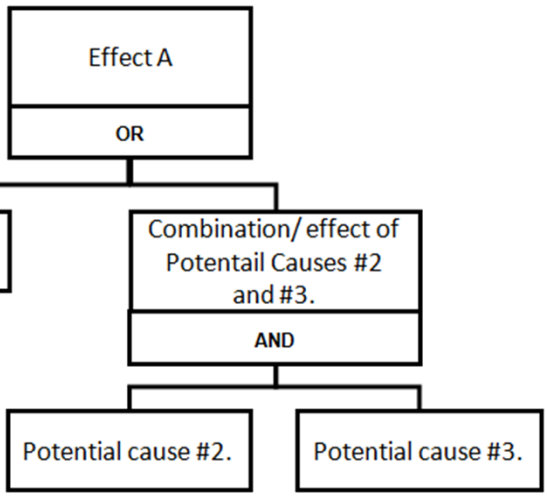
Testing an OR gate

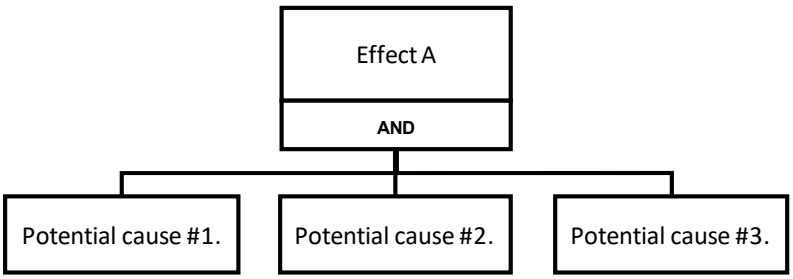
For an OR gate, each of the potential causes below the gate should cause the effect above the gate.

Modifying the tree

If after testing, Effect A only occurs when PC#2 and #PC3 BOTH occur, then:

1. Insert another level of the tree with PC#2 and PC#3 on the next level down.
2. Insert a new event that describes the combination of PC#2 and PC#3.
3. Connect PC#2 and PC#3 to the new event with an AND gate.





Testing an AND gate

All of the potential causes below the gate are required to cause the effect above the gate.

For an AND gate, eliminating any of the potential causes below the gate should PREVENT the effect above the gate from occurring.

Modifying the tree

If after testing, Effect A can occur when PC#1 and #2 BOTH occur, OR, when PC#3 occurs by itself, then:

1. Insert another level of the tree with PC#1 and PC#2 on the next level down.
2. Insert a new event that describes the combination of PC#2 and PC#3.
3. Connect PC#2 and PC#3 to the new event with an AND gate.
4. Change the gate under Effect A to an OR gate.