

**D0 PREPARE FOR THE 8D PROCESS**

In response to a symptom, evaluate the need for the 8D process. If necessary, provide Emergency Response Action to protect the customer and initiate the 8D process.

**D1 ESTABLISH THE TEAM**

Establish a small group of people with the process and/or product knowledge, allocated time, authority and skill in the required technical disciplines to solve the problem and implement corrective actions. The group must have a designated champion and team leader. The group begins the team building process.

**D2 DESCRIBE THE PROBLEM**

Describe the internal/external customer problem by identifying “what is wrong with that” and detail the problem in quantifiable terms.

**D3 DEVELOP INTERIM CONTAINMENT ACTIONS (ICAs)**

Define, verify and implement the Interim Containment Actions to isolate effects of the problem from any internal/external customer until Permanent Corrective Actions are implemented. Validate the effectiveness of the containment actions.

**D4 DEFINE AND VERIFY ROOT CAUSE AND ESCAPE POINT**

Isolate and verify the root cause by testing each root cause theory against the problem description. Also isolate and verify the place in the process where the effect of the root cause could have been detected and contained.

**D5 CHOOSE AND VERIFY PERMANENT CORRECTIVE ACTIONS (PCAs) FOR ROOT CAUSE**

Select the best Permanent Corrective Actions to remove the root cause. Also select the best PCAs to contain the effect of the root cause. Verify that both decisions will be successful when implemented without causing undesirable effects.

**D6 IMPLEMENT AND VALIDATE PERMANENT CORRECTIVE ACTIONS (PCAs)**

Plan and implement selected Permanent Corrective Actions. Remove the ICAs. Validate the actions and monitor the long term-results.

**D7 PREVENT RECURRENCE**

Modify the necessary systems including policies, practices and procedures to prevent recurrence of this problem and similar ones. Make recommendations for systematic improvements, as necessary, and document Technical lessons learned.

**D8 RECOGNIZE TEAM AND INDIVIDUAL CONTRIBUTIONS**

Complete the team experience. Sincerely recognize both team and individual contributions and celebrate.

**8D ASSESSING QUESTIONS**

To ensure consistency in application of the process, the following list of questions have been developed to assist the team in achieving the objective of this discipline.

**DO – PREPARE FOR THE 8D PROCESS**Emergency Response Action (ERA)

1. Necessity for Emergency Response Actions has been evaluated?
2. If an Emergency Response Action was taken, it has been verified?
3. If an Emergency Response Action was taken, it has been validated?

8D Application Criteria

4. The symptom(s) has been defined and quantified?
5. The 8D customer(s) who experienced the symptom(s) and, if appropriate, the affected parties, have been identified.
6. Measurements taken to quantify the symptom(s) demonstrate that a performance gap exists AND/OR that priority (severity, urgency, growth) of the symptom warranted initiation of the process?
7. The cause of the problem is unknown?
8. Management is committed to dedicate the necessary resources to fix the problem at the root cause level and to prevent recurrence?
9. Symptom complexity exceeds the ability of one person to resolve the problem?

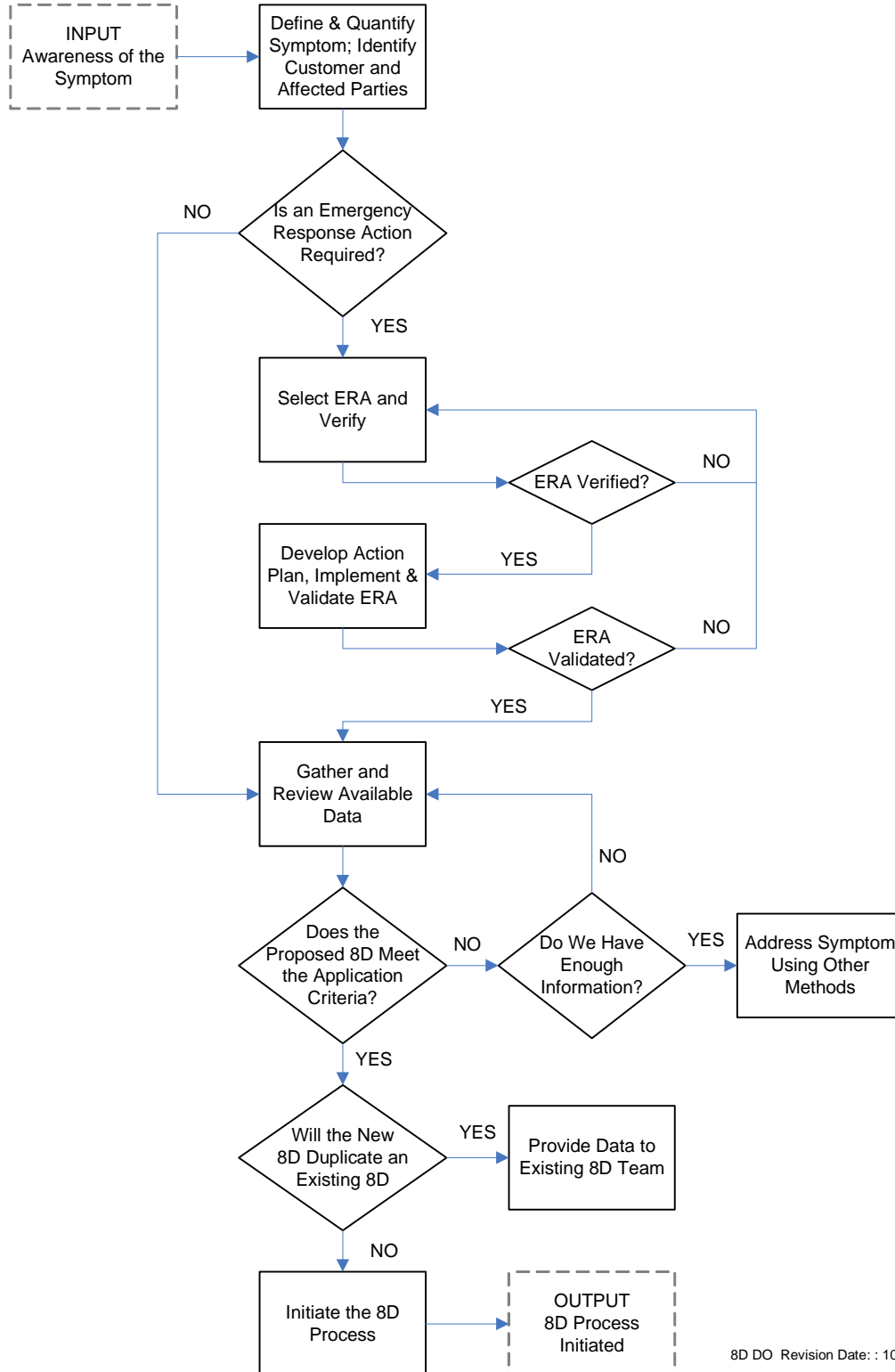
Other

10. The new 8D will not duplicate an existing 8D?

Common Tasks (as appropriate)

11. All changes are documented (e.g. FMEA, Control Plan, Process Flow)?
12. Measurables have been reviewed?
13. The 8D Report has been updated?
14. The need for a service action has been determined?

### DO – PREPARE FOR THE 8D PROCESS



8D DO Revision Date : 10/25/2005

To ensure consistency in application of the process, the following list of questions have been developed to assist the team in achieving the objectives of this discipline and satisfy customer requirements.

**D1 - ESTABLISH THE TEAM**Warming-Up

1. A regular team meeting time and place is established?
2. The team meeting room is user-friendly?
3. Adequate team building has been done to build relationships with team members?
4. Preparation is adequate to help team members focus on the team's activity?
5. The purpose of each meeting has been highlighted?
6. The team is informed of each meeting's agenda?

Membership

7. The people affected by the problem are represented on the team?
8. The 8D Customer's viewpoint is represented?
9. Each individual has a reason for being on the team and this has been communicated to them?
10. The team is large enough to include all necessary input but small enough to act effectively?
11. The team membership reflects the problem's current status?
12. The team members agree on the team membership?

Product/Process Knowledge

13. Special skills or experience that the team will require is available?

Operating Procedures and Working Relationship

14. The team's goals and membership roles have been clarified?
15. The team has sufficient decision making authority to accomplish its goals?
16. Communication plans have been developed for both internal and external team information?
17. All individual members agree with and understand the team's goals?

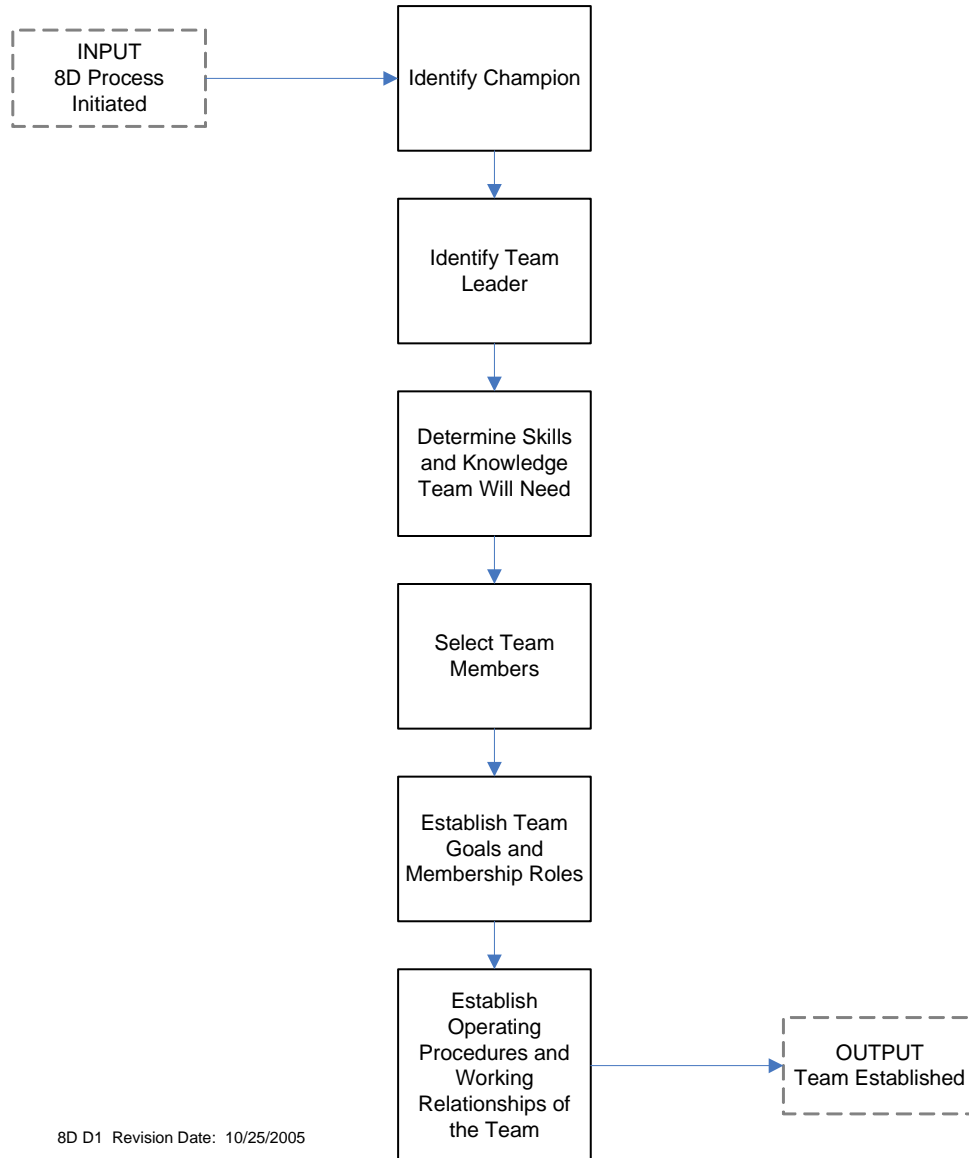
Roles

18. The Champion of the team has been identified?
19. The Team Leader has been identified?
20. Team Member's roles and responsibilities are clear?
21. Need for a facilitator to coach the process and manage team consensus has been considered?

Common Tasks (as appropriate)

22. All changes are documented (e.g. FMEA, Control Plan, Process Flow)?
23. Measurables have been reviewed?
24. The 8D Report has been updated?

## D1 - Establish the Team



To ensure consistency in application of the process, the following list of questions have been developed to assist the team in achieving the objectives of this discipline.

**D2 - DESCRIBE THE PROBLEM**Problem Statement

1. The question "What's wrong with what?" has been answered?
2. Repeated Why's were used asking the question "Do we know for certain why this is occurring"?
3. A specific problem statement has been defined (object and defect)?

Problem Description

4. Is/Is Not Analysis has been performed (what, where, when, how big)?
5. Prior experience has been considered to determine if this problem has appeared before?
6. The current process flow has been identified?
7. Changes from the original process flow, if any, have been evaluated?
8. Process details have been reviewed to determine where this problem first appears?
9. The engineering system design has been studied and system delivery, system function and interactions between components in the system are understood?
10. Problem pattern(s) has been considered/evaluated?
11. Similar components and/or parts have been reviewed for the same problem?
12. All required data has been collected and analyzed?
13. The affect of the ERA on the data has been evaluated?
14. Physical evidence of the problem has been obtained?
15. A Cause & Effect Diagram has been completed?

Type of Problem

16. Determination has been made as to whether this problem describes a "something changed" or a "never been there" situation?

Review of Problem Description

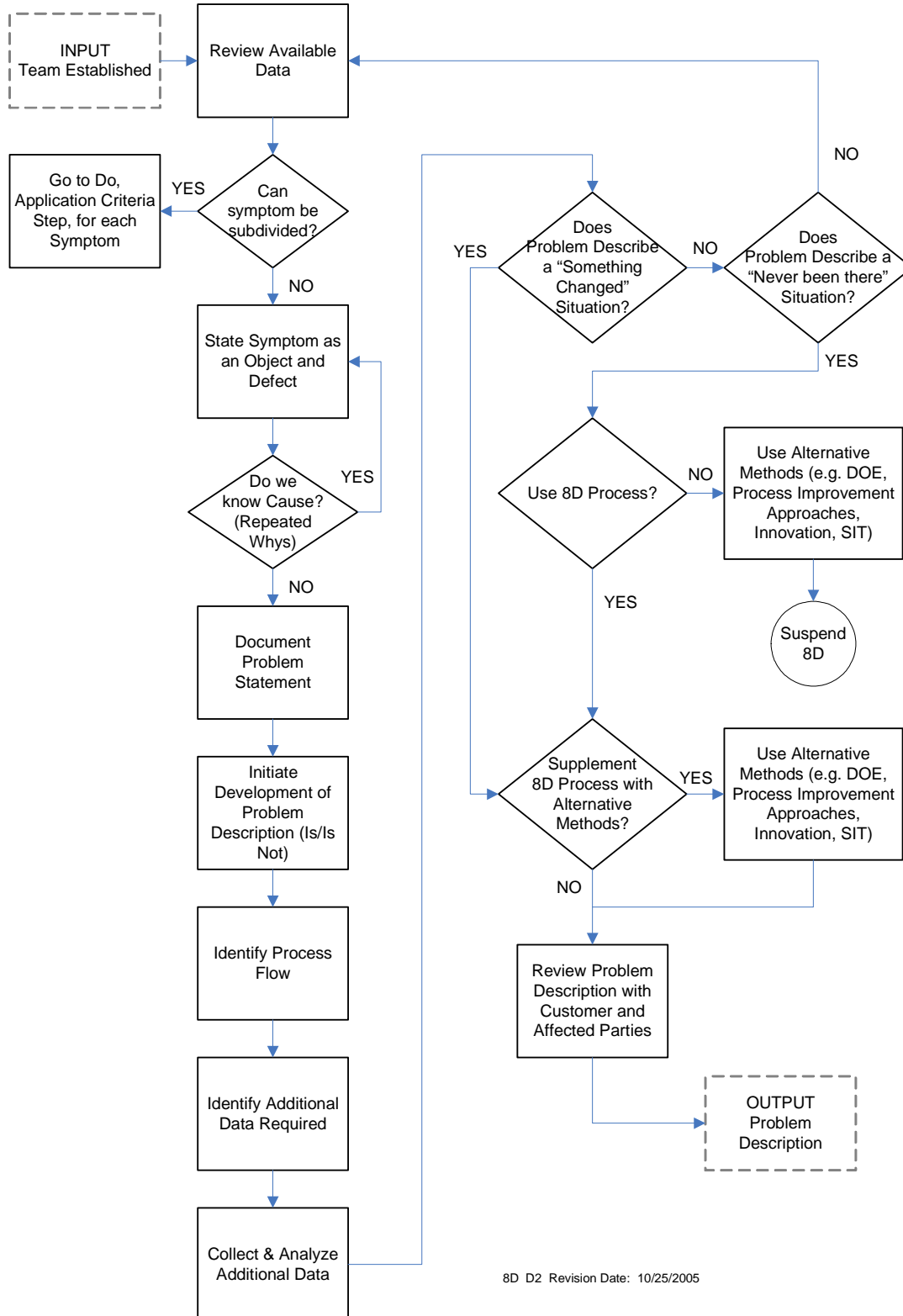
17. The problem description has been confirmed as to what the customer(s) and/or affected party(s) are experiencing?
18. The necessity of reviewing the problem with executive management has been evaluated?
19. Consideration has been made for setting aside financial reserves?
20. Moral, social, or legal obligations related to this problem have been considered?

Common Tasks (as appropriate)

21. All changes are documented (e.g. FMEA, Control Plan, Process Flow)?
22. The team composition has been reconsidered?
23. Measurables have been reviewed?
24. The need for a Service Action has been determined?
25. The 8D Report has been updated?

Effect on the Customer:

### D2 - DESCRIBE The PROBLEM



8D D2 Revision Date: 10/25/2005

To ensure consistency in application of the process, the following list of questions have been developed to assist the team in achieving the objectives of this discipline.

**D3 – INTERIM CONTAINMENT ACTIONS (ICAs)**Before ICA Implementation

1. The need for ICAs has been determined?
2. Evaluation made of the ERA to help select the “best” ICA?
3. Consultation with the 8D Customer and/or Champion has been conducted to establish criteria for ICA selection?
4. Based on the criteria established, the ICA provides the best balance of benefits and risks?
5. The ICA protects the customer 100% from the effect of the problem?
6. The ICA has been verified?
7. The ICA is cost effective and easy to implement?

Planning

8. Appropriate departments have been involved in the Planning of this decision?
9. Consideration has been given to the appropriate Advances Product Quality Planning (APQP) tools (e.g. FMEA, Control Plans, Instructions)?
10. Plans, including action steps, have been developed considering who needs to do what by when?
11. The customer’s viewpoint has been considered for this ICA (if required)?
12. The customer’s approval has been obtained?
13. A validation method has been determined?
14. Consideration has been given as to what could go wrong and to contingent actions?
15. Implementation resources are available and adequate?

Post Implementation

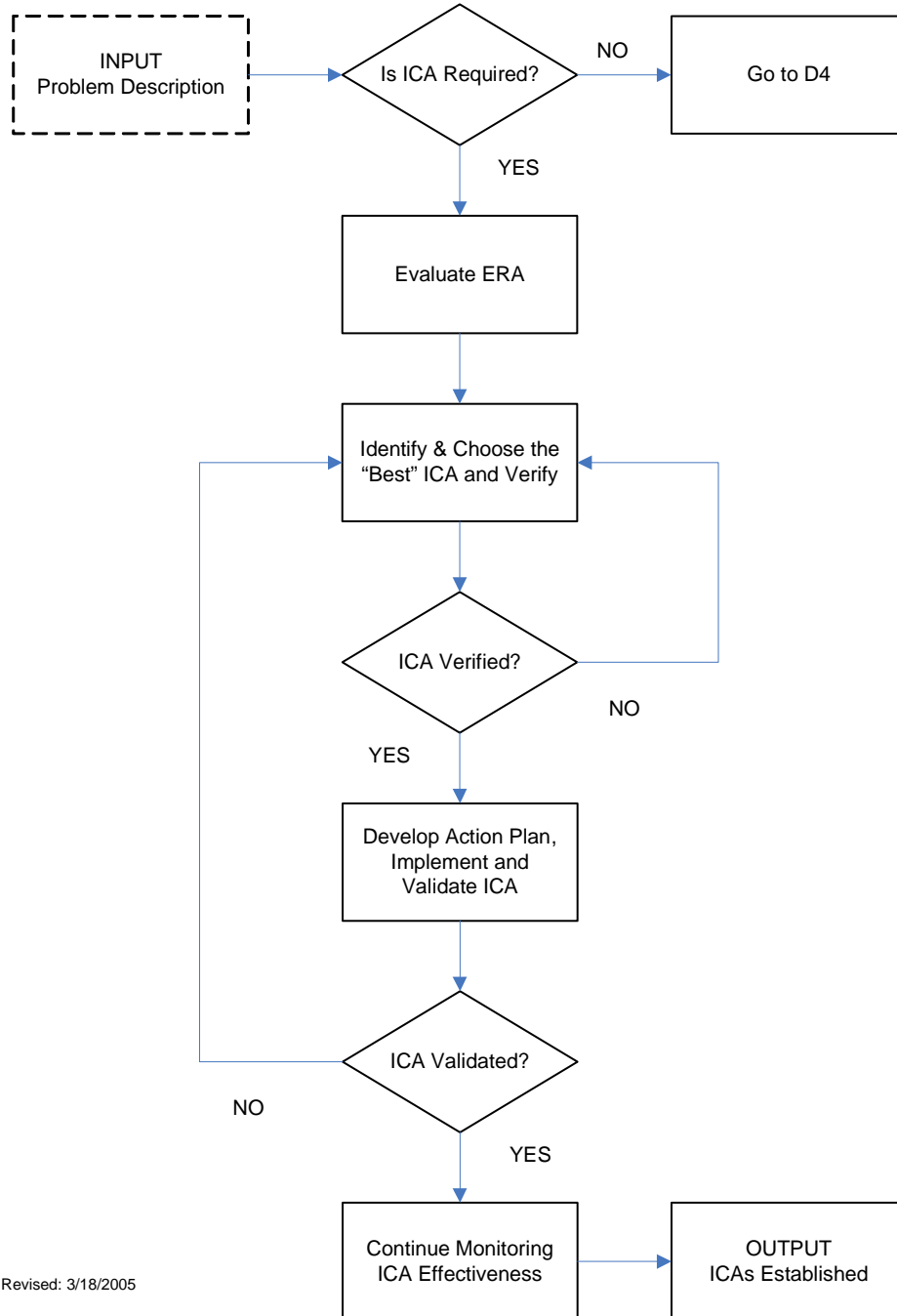
16. The validation data indicate that the 8D customer is being protected?
17. The ICA has been evaluated for improvement?

Common Tasks (as appropriate)

18. All changes are documented (e.g. FMEA, Control Plan, Process Flow)?
19. The team composition has been reconsidered?
20. Measurables have been reviewed?
21. The need for a Service Action has been determined?
22. The 8D Report has been updated?



## D3 – INTERIM CONTAINMENT ACTIONS (ICAs)



8D D3 Revised: 3/18/2005

To ensure consistency in application of the process, the following list of questions have been developed to assist the team in achieving the objectives of this discipline.

**D4 – DEFINE and VERIFY ROOT CAUSE and ESCAPE POINT**Root Cause

1. The factual information in the problem description (Is/Is Not) has been updated?
2. Differences unique to the Is when compared to the companion Is Not have been identified?
3. For a “Change-Induced” problem, changes in or around the differences have been uncovered?
4. The theories developed have been tested against all the facts at D2?
5. The Most Likely Cause accounts for all the facts at D2?
6. The Root Cause was verified passively and actively?
7. Root Cause Analysis has gone far enough (we don’t need to know why this root cause happened)?

More Than One Root Cause

8. The causes were reviewed to determine if, collectively, they account for all of the Problem Description (i.e. the desired performance level is achievable)?
9. If achievable, the team considered and reviewed with the Champion the benefit of developing a separate Problem Description and, by definition, initiating a separate 8D for each Root Cause identified?
10. If not achievable, the team considered and reviewed with the Champion the benefit of alternative problem solving methods/tools (e.g. DOE, Process Improvement Approaches, SIT): a) independent of an 8D, or b) as a compliment to an 8D?

Escape Point

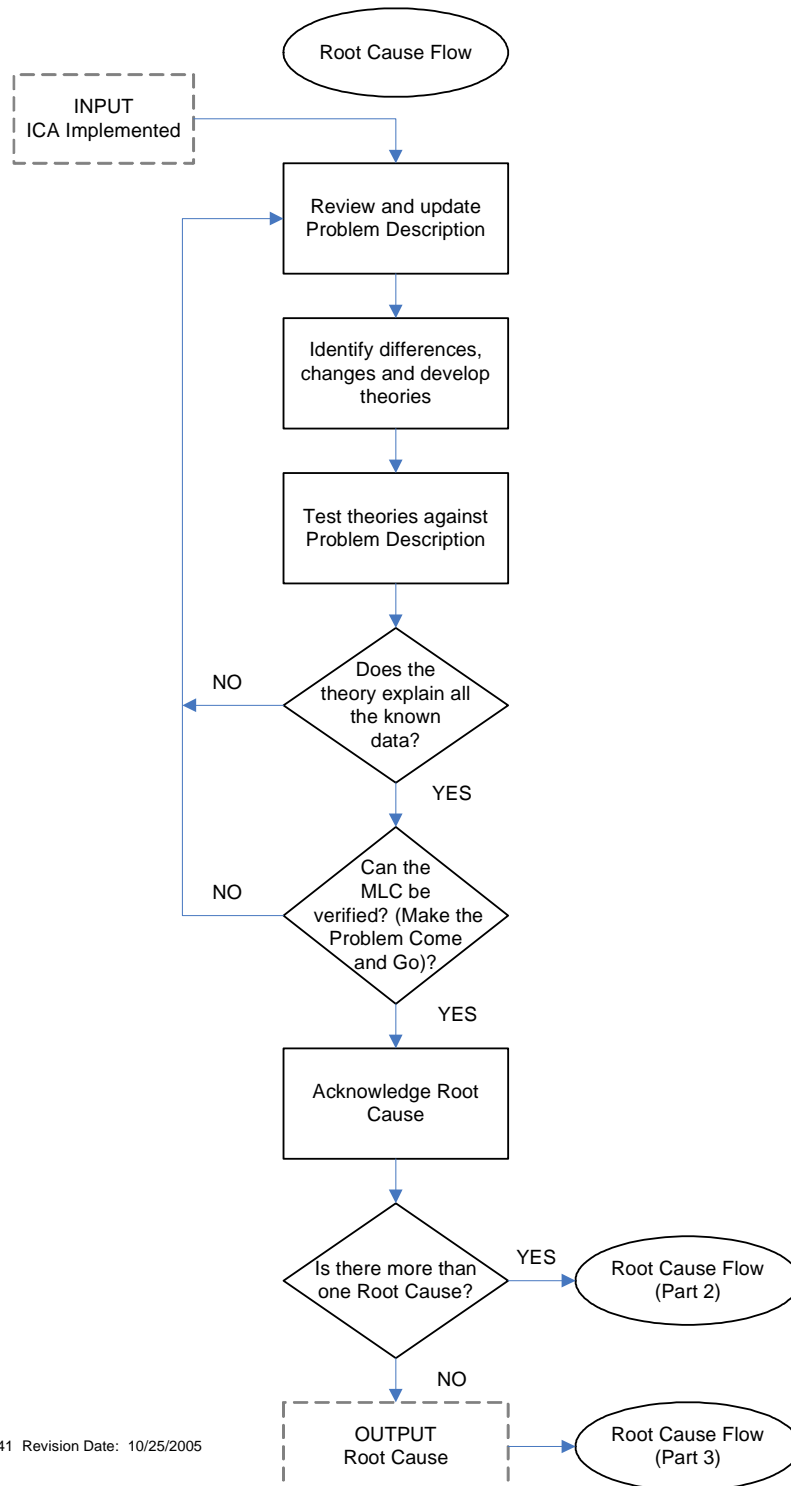
11. The Process flow was reviewed and control points associated with Root Cause(s) identified?
12. A determination was made as to the existence of a control system to detect the problem?
13. If a control system exists, changes from its original design (if any) have been identified?
14. Control Points closest to the Root Cause(s) were identified?
15. The capability of the Control System of detecting the problem has been verified?
16. The need to improve the Control System has been evaluated?

Common Tasks (as appropriate)

17. All changes are documented (e.g. FMEA, Control Plan, Process Flow)?
18. The team composition has been reconsidered?
19. Measurables have been reviewed?
20. The need for a Service Action has been determined?
21. The 8D Report has been updated?

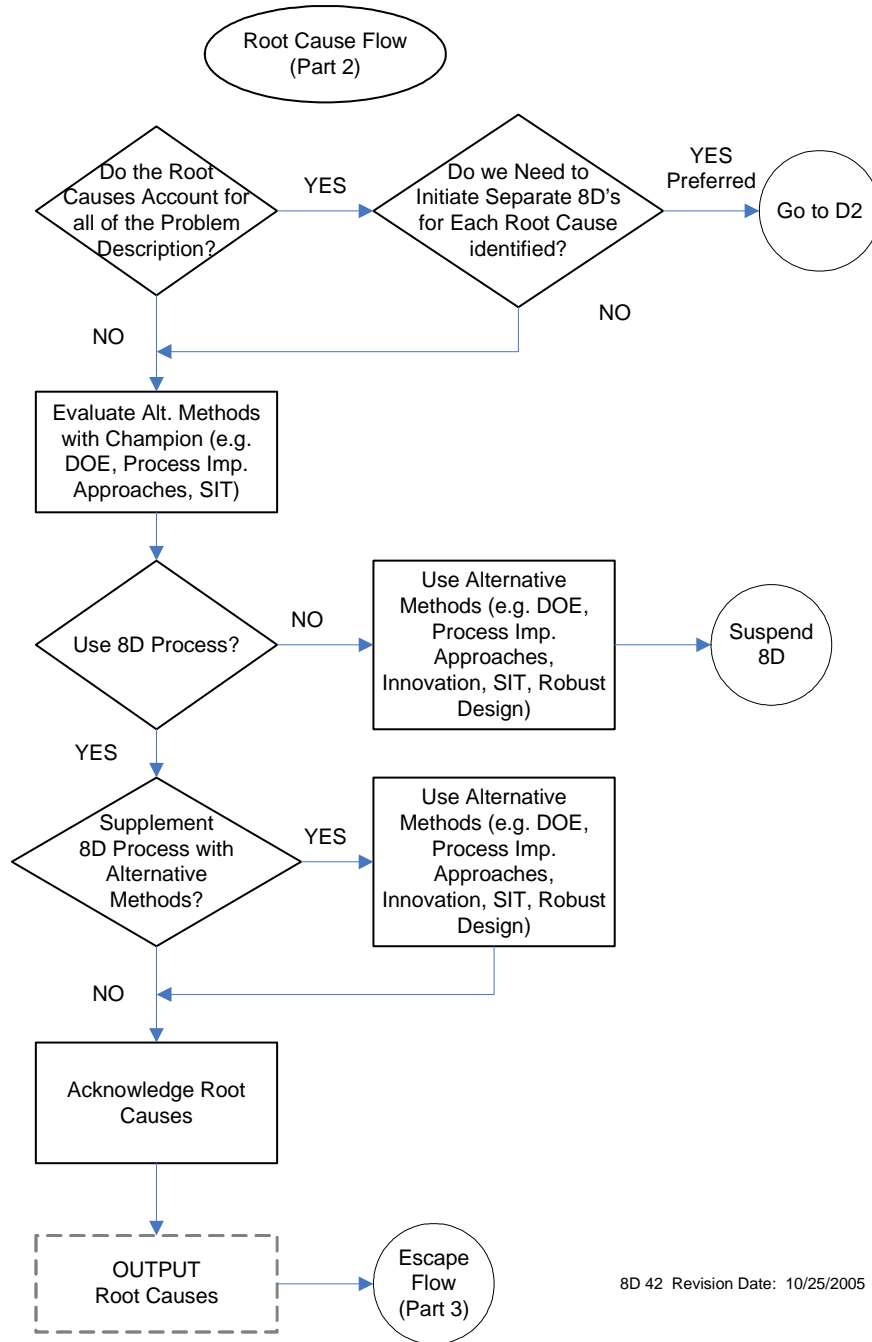
## D4 – DEFINE and VERIFY ROOT CAUSE and ESCAPE POINT

( Part 1 of 3 )



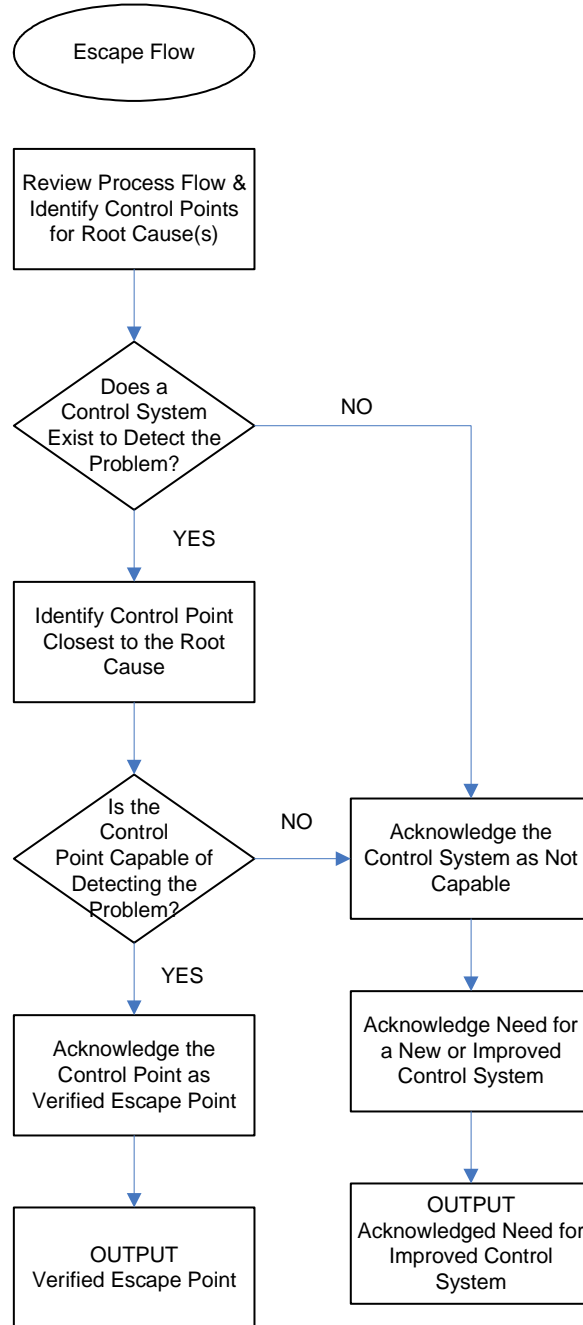
8D D41 Revision Date: 10/25/2005

( Part 2 of 3 )



8D 42 Revision Date: 10/25/2005

( Part 3 of 3)



8D 43 Revision Date: 10/25/2005

To ensure consistency in application of the process, the following questions have been developed to assist the team in achieving the objectives of this discipline.

**D5 – CHOOSE and VERIFY PERMANENT CORRECTIVE ACTIONS (PCAs) FOR ROOT CAUSE AND ESCAPE POINT**Before PCA Decision

1. Criteria has been established for choosing a PCA for root cause and escape point?
2. The Champion agrees with the PCA criteria?
3. The right experience is on this team to choose the best PCA?
4. A full range of alternatives have been considered for the PCA?
5. The features and benefits for the perfect choice have been preserved?
6. Risks associated with this decision are being managed?
7. The Champion concurs with the PCA selection?

Verification

8. Evidence (proof) exists that these actions will resolve the problem at the root cause level?
9. Verification methods made allowances for variations in the frequency (or patterns) created by the cause?
10. Variables measured during our verification step constitute sound verification?
11. Verification methods evaluated the PCA over the full range of production variation and operating conditions?

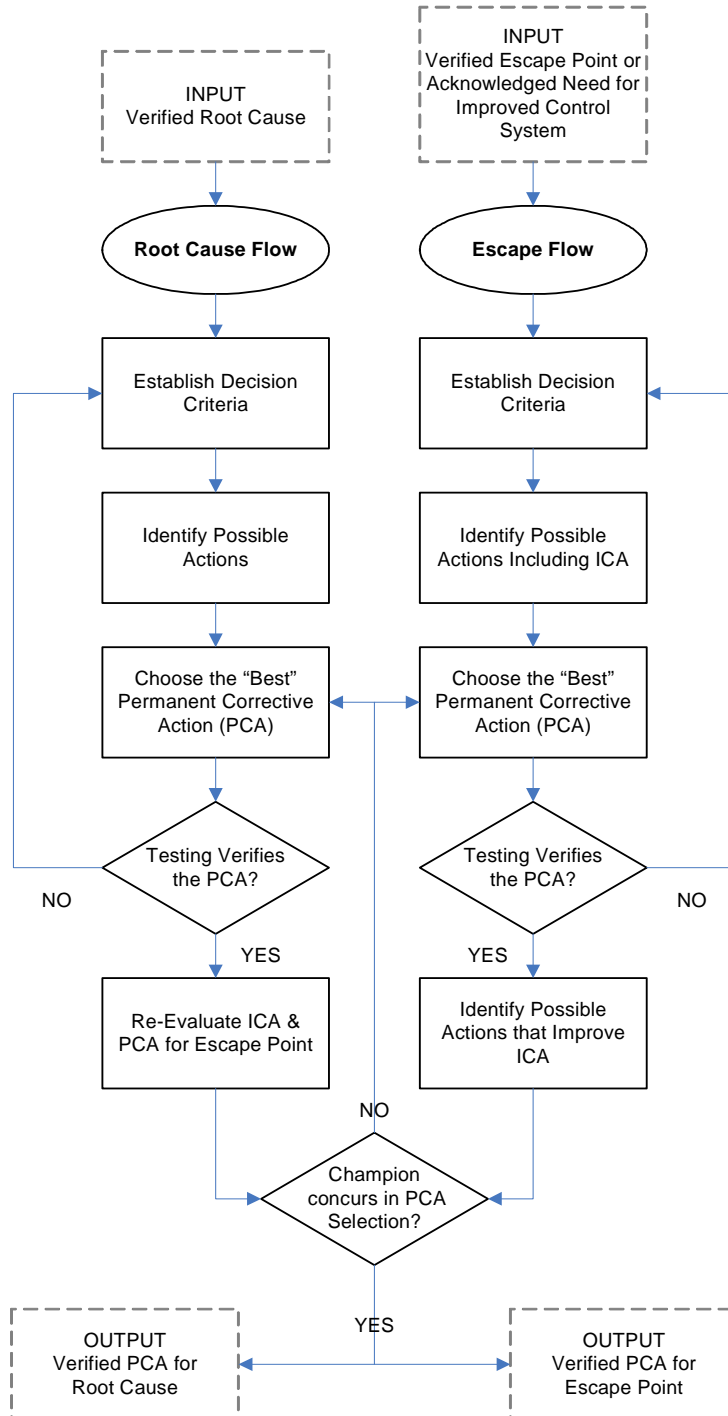
After PCA Decision

12. A Risk Analysis was performed on the PCA selected?
13. The customer and affected parties were consulted on the selected PCA (if required)?
14. The ICA will continue to be effective until the PCA can be implemented?
15. Consideration has been given to the resources required for PCA implementation?
16. Departments/other organizations that need to be involved in the planning and implementation of the PCA have been identified?
17. Actions have been considered that will improve the ICA prior to PCA implementation?

Common Tasks (as appropriate)

18. All changes are documented (e.g. FMEA, Control Plan, Process Flow)?
19. The team composition has been reconsidered?
20. Measurables have been reviewed?
21. The need for a Service Action has been determined?
22. The 8D Report has been updated?

### D5 – CHOOSE and VERIFY PERMANENT CORRECTIVE ACTIONS (PCAs) FOR ROOT CAUSE AND ESCAPE POINT



8D D5 Revision Date: 10/25/2005

To ensure consistency in application of the process, the following list of questions have been developed to assist the team in achieving the objectives of this discipline.

**D6 – IMPLEMENT AND VALIDATE PERMANENT CORRECTIVE ACTIONS (PCAs)**Planning / Problem Prevention

1. The need for PCA implementation support from other departments/organizations has been evaluated?
2. Representatives of those departments/other organizations are on our team to plan and implement the PCA?
3. Consideration was made to the need for customer and/or supplier involvement?
4. The responsible party for customer and/or supplier planning has been identified (if required)?
5. An action plan has been defined (responsibilities assigned; timing established; required support determined)?
6. Resources necessary to implement this plan have been identified?
7. Consideration (Problem Prevention Planning) has been given to what could go wrong for each step of the plan and what can be done to prevent these troubles from developing?
8. Appropriate contingent actions have been developed in case prevention efforts are unsuccessful?
9. The triggers (date or event) for the contingent actions have been identified?
10. Progress to the plan until completion is being effectively monitored?
11. Included in the plan is a date when the ICA will be removed?
12. The plan has been communicated to those that have a need to know?
13. Training required for plan implementation has been determined?
14. The Champion agrees with the plan?
15. Measurable(s) have been identified for validating the outcome of the PCA (pre-customer and customer)?

Validation

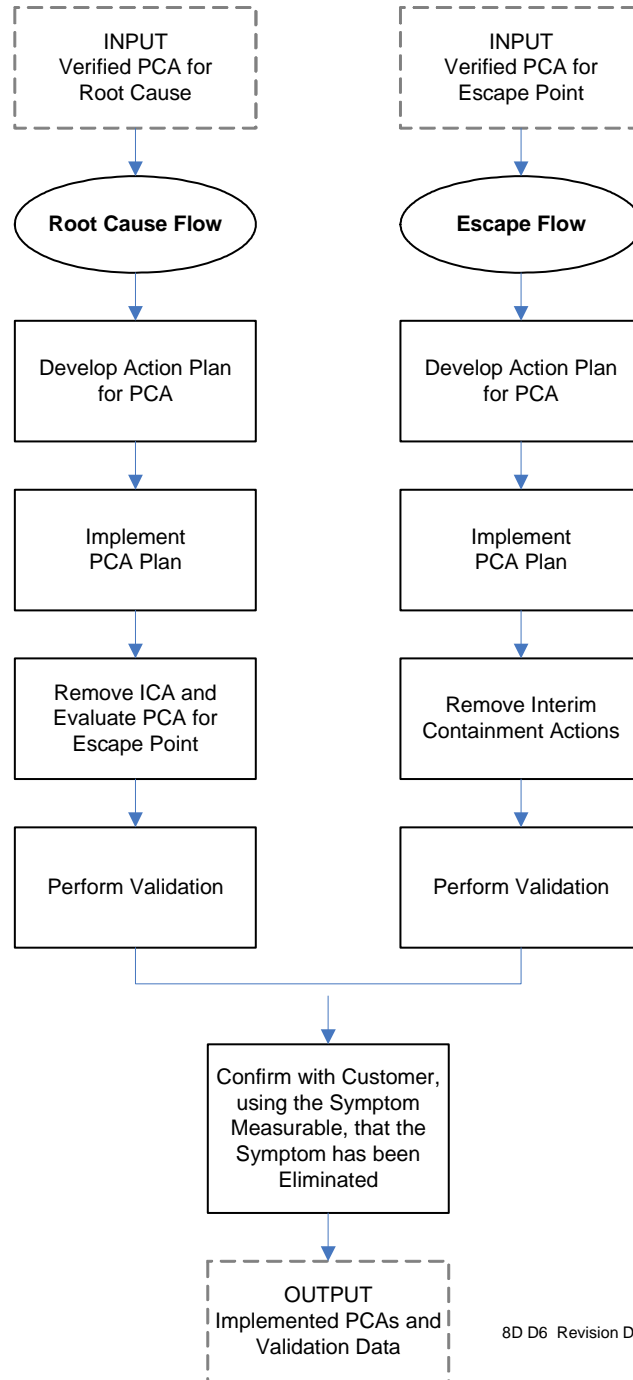
16. The ICA has been discontinued?
17. Validation measurables have proven that the unwanted effect has been totally eliminated?
18. Long-term results are continuing to be monitored?
19. The customer has provided confirmation that the PCA is effective?

Common Tasks (as appropriate)

20. All changes are documented (e.g. FMEA, Control Plan, Process Flow)?
21. The team composition has been reconsidered?
22. Measurables have been reviewed?
23. The need for a Service Action has been determined?
24. The 8D Report has been updated?



### D6 – IMPLEMENT AND VALIDATE PERMANENT CORRECTIVE ACTIONS (PCAs)



8D D6 Revision Date: 10/25/2005

To ensure consistency in application of the process, the following list of questions have been developed to assist the team in achieving the objectives of this discipline.

**D7 – PREVENT RECURRENCE**Problem History

1. How and where this problem entered the process has been identified?
2. Why the problem occurred there and why it was not detected has been confirmed?
3. We have considered whether confusion or lack of knowledge contributed to the creation of this root cause and/or escape?
4. Policies, methods, procedures and/or systems have been identified that allowed this problem to occur and escape?
5. If Ban-Aid fixes in the process have been identified, where they are located and what they are compensating for has been determined?
6. Affected parties have been identified?

Prevent Actions (this problem and similar problems)

7. Policies, methods, procedures and/or systems have been identified that need to be done differently to prevent recurrence of the root cause and escape?
8. Evidence evaluated to determine the need for a Process Improvement Approach (i.e. RAPID, Focused Improvement, Re-engineering)?
9. Individuals and/or organizations have been identified that are responsible for design improvements in any of the systems, policies, methods and/or procedures that resulted in this root cause and escape?
10. The best way to trial run these improvements has been determined?
11. Practices needing standardization have been identified?
12. Plans have been written to coordinate prevent actions and standardize the practices?
13. The Champion concurs with the identified prevent actions and plans?
14. A method for communicating to those affected by the changes in the new practice has been determined?
15. The new practices have been standardized?
16. Progress check points have been defined to assess system improvements?

Systemic Prevent Recommendations

17. The management policies, systems or procedures that allowed this problem to occur or escape and that are beyond the scope of the current champion have been identified?
18. Responsibility for these practices that are beyond the scope of the current champion have been established?
19. The current Champion agrees with the Systemic Prevent Recommendation of the Team?

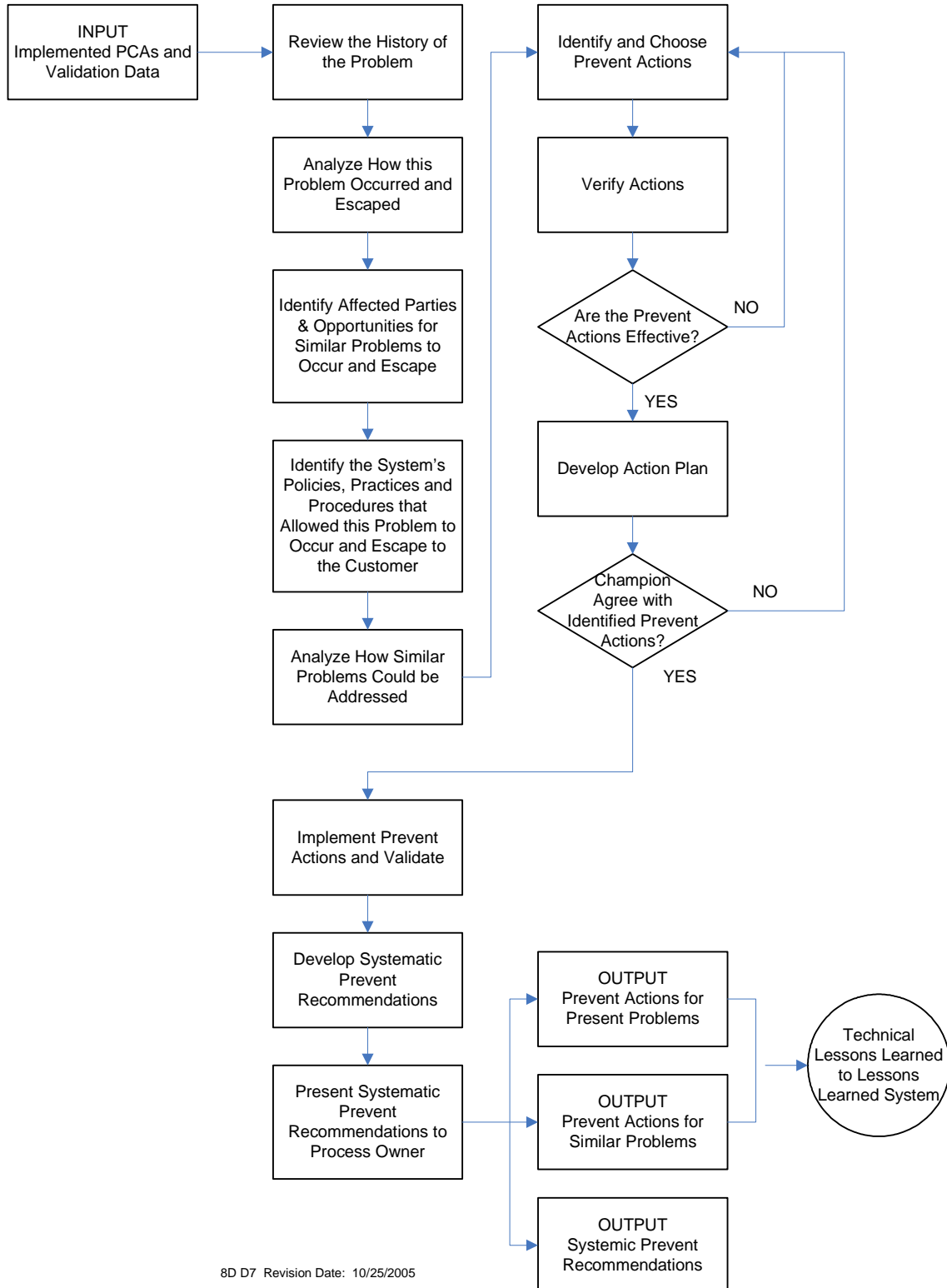
Lessons Learned

20. Appropriate Technical lessons learned have been developed and documented?

Common Tasks (as appropriate)

21. All changes are documented (e.g. FMEA, Control Plan, Process Flow)?
22. The team composition has been reconsidered?
23. Measurables have been reviewed?
24. The need for a Service Action has been determined?
25. The 8D Report has been updated?

### D7 – PREVENT RECURRENCE



8D D7 Revision Date: 10/25/2005

To ensure consistency in application of the process, the following list of questions have been developed to assist the team in achieving the objectives of this discipline.

**D8 – RECOGNIZE TEAM and INDIVIDUAL CONTRIBUTIONS**8D Report

1. The 8D report has been updated and published?
2. All who have a need to know, including the customer, have been informed of the status of this 8D?
3. The 8D report and attachments are retained in the historical file system?

Recognition Planning

4. All current and past team members are being recognized?
5. Significant contributions by individual team members have been identified?
6. The opportunities have been evaluated to provide recognition from leader to team, team member to team member, team to leader, team to champion?
7. Different ways to communicate the recognition message have been considered?
8. Contributions by non-team members to the 8D have been considered for recognition?

Recognition Implementation

9. Opportunities for team publicity considered (e.g. company newsletter)?
10. The recognition satisfies the fit, focus, timely criteria?
11. D8 is intended to be positive. The chance that it might backfire and turn into negative has been considered and guarded against?

Lessons Learned

12. Team process has been evaluated and lessons learned identified?

Warming Down

13. All unfinished business has now been finalized?
14. Each person has had an opportunity to express appreciation to the other team members?
15. Each person has made a final statement?
16. The team has appropriately celebrated?

## D8 – RECOGNIZE TEAM and INDIVIDUAL CONTRIBUTIONS

