

**DRAFT**

**Domain Independent Reuse Methodology  
Development Document  
Version 1.0  
25 June 1996**

Michael DeSimone  
Lockheed Martin, Advanced Technology Laboratories  
E-mail: [mdesimon@atl.lmco.com](mailto:mdesimon@atl.lmco.com)  
phone: (609)-338-401 1

**DRAFT**

## Table Of Contents

1. INTRODUCTION	5
2. TASK DESCRIPTIONS	5
2.1 DOMAIN INDEPENDENT REUSE PROCESS/WOR~FLOW MODELING	5
2.2 CLASS HIERARCHY MODELING USING OMT	5
2.3 DEVELOP RASSP SPECIFIC DOMAIN ASSESSMENT GUIDELINES	5
2.4 DESIGN FOR REUSE GUIDELINES UPDATES	5
3. APPLICABLE DOCUMENTS	5
4. DOMAIN INDEPENDENT REUSE PROCESSES/WORKFLOWS	5
4.1 REUSE ELEMENT CREATION AND MAINTENANCE - TOP LEVEL PROCESSES	5
4.1.1 Propose Reuse Element Addition [1]	6
4.1.2 Identify Reuse Element [2]	6
4.1.3 Analyze Reuse Element For Class Determination [3]	6
4.1.4 Define New Class [4]	6
4.1.5 Modify Current Class [5]	7
4.1.6 Instantiate Class [6]	7
4.1.7 Transit To Operations [7]	7
4.2 REUSE ELEMENT ADDITION DECOMPOSITIONS	9
4.2.1 Decomposition For: Propose Reuse Element Addition Process	9
4.2.1.1 Present Reuse Element Proposal [1.1]	9
4.2.1.2 Receive Authorization To Proceed [1.2]	9
4.2.1.3 Modify Proposal [1.3]	9
4.2.2 Decomposition For: Identify Reuse Element Process	11
4.2.2.1 Document Utility [2.1]	11
4.2.2.2 Collect Data On Reuse Element [2.2]	11
4.2.2.3 Document Reuse Element [2.3]	11
4.2.2.4 Generate Material For Peer Review [2.4]	11
4.2.2.5 Perform Peer Review [2.5]	12
4.2.2.6 Obtain Peer Review Board Approval [2.6]	12
4.2.2.7 Generate Material for ERB Review [2.7]	12
4.2.2.8 Perform Review With ERB [2.8]	12
4.2.2.9 Obtain ERB Approval [2.9]	12
4.2.3 Decomposition For: Analyze RE For Class Determination Process	14
4.2.3.1 Review Current Class Hierarchy [3.1]	14
4.2.3.2 Review Current Class Hierarchy [3.2]	14
4.2.3.3 Produce Class Determination Report [3.3]	14
4.2.4 Decomposition For: Define New Class Process	15
4.2.4.1 Add New Class To OMT Model [4.1]	16
4.2.4.2 Review Class Determination Analysis [4.2]	16
4.2.4.3 Review Reuse Element Documentation [4.3]	16
4.2.4.4 Generate Material For Peer Review [4.4]	16
4.2.4.5 Perform Peer Review [4.5]	16
4.2.4.6 Obtain Peer Review Board Approval [4.6]	17
4.2.4.7 Generate Reuse Database Test Version [4.7]	17
4.2.4.8 Implement Class Definition [4.8]	17
4.2.4.9 Test Database Test Version [4.9]	17
4.2.4.10 Complete Testing Successfully [4.10]	17

## Table Of Contents (cont.)

4.2.4.11	Generate Material For ERB Review [4.11]	18
4.2.4.12	Obtain ERB Approval [4.12]	18
4.2.5	Decomposition For: Modify Current Class Process	20
4.2.5.1	Modify Current Class In OMT Model [5.1]	20
4.2.5.2	Review Class Determination Analysis [5.2]	20
4.2.5.3	Review Reuse Element Documentation [5.3]	20
4.2.5.4	Generate Material For Peer Review [5.4]	20
4.2.5.5	Perform Peer Review [5.5]	20
4.2.5.6	Obtain Peer Review Board Approval [5.6]	21
4.2.5.7	Generate Reuse Database Test Version [5.7]	21
4.2.5.8	Implement Modified Class [5.8]	21
4.2.5.9	Test Database Test Version [5.9]	21
4.2.5.10	Complete Testing Successfully [5.10]	21
4.2.5.11	Generate Material For ERB Review [5.11]	22
4.2.5.12	Obtain ERB Approval [5.12]	22
4.2.6	Decomposition For: Instantiate Class Process	24
4.2.6.1	Generate Reuse Database Test Version [6.1]	24
4.2.6.2	Update Metadata [6.2]	24
4.2.6.3	Attach Reuse Element Data [6.3]	24
4.2.6.4	Test Database Test Version [6.4]	24
4.2.6.5	Complete Testing Successfully [6.5]	24
4.2.6.6	Generate Material For ERB Review [6.6]	25
4.2.6.7	Perform Review With ERB [6.7]	25
4.2.6.8	Obtain ERB Approval [6.8]	25
4.2.7	Decomposition For: Transit To Operations	27
4.2.7.1	Freeze Test Version Of Reuse Database [7.1]	27
4.2.7.2	Perform Rigorous Testing [7.2]	27
4.2.7.3	Analyze Results [7.3]	27
4.2.7.4	Modify Test Version [7.4]	27
4.2.7.5	Generate Material For Peer Review [7.5]	27
4.2.7.6	Perform Peer Review [7.6]	28
4.2.7.7	Obtain Peer Review Board Approval [7.7]	28
4.2.7.8	Generate Material For ERB Review [7.8]	28
4.2.7.9	Perform Review With ERB [7.9]	28
4.2.7.10	Obtain ERB Approval [7.10]	28
4.2.7.11	Back-up Controlled Version Of Reuse Database [7.11]	29
4.2.7.12	Promote Test Version Of Reuse Database [7.12]	29
4.3	TOP LEVEL PROCESSES: REUSE ELEMENT UTILIZATION	31
4.3.1	Characterize Reuse Element [1]	31
4.3.2	Search For Reuse Element [2]	31
4.3.3	Review Candidate Reuse Elements [3]	31
4.3.4	Refine Search [4]	31
4.3.5	Utilize Reuse Element [5]	31
4.3.6	Decomposition For: Search For Reuse Element	33
4.3.6.1	Select Database(s) [2.1]	33
4.3.6.2	Browse Hierarchical Classes [2.2]	33
4.3.6.3	View Data Dictionary [2.3]	33
4.3.6.4	Determine Search Attributes [2.4]	33

## Table Of Contents (cont.)

4.3.6.5	Execute Search [2.5]	33
4.3.7	Decomposition For: Refine Search	35
4.3.7.1	Review Reuse Element Retrieved [4.1]	35
4.3.7.2	Search For Reuse Element [4.2]	35
4.3.8	Decomposition For: Utilize Reuse Element	37
4.3.8.1	Reuse Element Extraction [5.1]	37
4.3.8.2	Standalone Test Reuse Element [5.2]	37
4.3.8.3	Implement Reuse Element Into Unit [5.3] . .	37
4.3.8.4	Reuse Element Modification [5.4]	37
4.3.8.5	Test Unit [5.5]	37
4.3.8.6	Integrate Into Design [5.6]	38
5.	ACRONYMS	40

## Table Of Figures

FIGURE 1:	TOP LEVEL PROCESS DIAGRAM: REUSE ELEMENT ADDITION	8
FIGURE 2:	PROCESS DECOMPOSITION: PROPOSE REUSE ELEMENT ADDITION	10
FIGURE 3:	PROCESS DECOMPOSITION: IDENTIFY DESIGN REUSEELEMENT	13
FIGURE 4:	PROCESS DECOMPOSITION: ANALYZE REUSE ELEMENTS FOR CLASS DETERMINATION	14
FIGURE 5:	PROCESS DECOMPOSITION: DEFINE NEW CLASS	19
FIGURE 6:	PROCESS DECOMPOSITION: MODIFY CURRENT CLASS	23
FIGURE 7:	PROCESS DECOMPOSITION: INSTANTIATE CLASS	26
FIGURE 8:	PROCESS DECOMPOSITION: TRANSITION TO OPERATIONS	30
FIGURE 9:	TOP LEVEL PROCESS DIAGRAM: REUSE ELEMENT UTILIZATION	32
FIGURE 10:	PROCESS DECOMPOSITION: SEARCH FOR REUSE ELEMENT	34
FIGURE 11:	PROCESS DECOMPOSITION: REFINE SEARCH DETAILS	3 6
FIGURE 12:	PROCESS DECOMPOSITION: UTILIZE REUSE ELEMENT DETAILS	39

## **1. Introduction**

The purpose of this document is to provide a record of the RASSP Domain Independent Methodology Development Activity. The purpose of this activity is to provide an overall reuse methodology that is independent of the domain that it is resident.

## **2. Task Descriptions**

The following four (4) tasks comprise the RASSP Domain Independent Methodology Development Activity.

### **2.1 Domain Independent Reuse Process/Workflow Modeling**

This task involves the modeling of two (2) types of reuse activities. The first activity involves adding a new Reuse Element to the Reuse Database and the second is actually utilizing the Reuse Element. Process modeling is performed using the IDEF3 Integrated DEFinition 3 technique. The tool used for this modeling is ProCap 2.1.2, provided by KBSI (Knowledge Based Systems, Inc.). The tool used to provide workflows is Intergraph's Data Methodology Manager (DMM).

### **2.2 Class Hierarchy Modeling Using OMT**

This task involves the modeling of the current RASSP Reuse Design Object Class Hierarchy (RDOCH). The methodology used for this modeling is Dr. James Rumbaugh's Object Methodology Technique (OMT). The tool used to perform the modeling is CADRE Technologies ObjectTeam OMT version 4.0.

### **2.3 Develop RASSP Specific Domain Assessment Guidelines**

This task involves the development of guidelines that can be used to implement a reuse methodology and system in an enterprise environment.

### **2.4 Design For Reuse Guidelines Updates**

This task involves updating the RASSP Methodology Document with Design for Reuse Guidelines.

## **3. Applicable Documents**

RASSP Methodology, Version 2.0, October 1995,

## **4. Domain Independent Reuse Processes/Workflows**

This section contain both Reuse Processes and their associated Workflows.

### **4.1 Reuse Element Creation and Maintenance - Top Level Processes**

These are the Top Level Processes for creating and/or maintaining a reusable design object. These processes are illustrated in Figure 1.

#### **4.1.1 Propose Reuse Element Addition [1]**

##### **Description**

The Design Engineer proposes the addition of a Reuse Element to the Reuse Database to his/her supervisor.

##### **Objects**

Design Engineer  
Supervisor  
Reuse Element Proposal Material

#### **4.1.2 Identify Reuse Element [2]**

##### **Description**

The Design Engineer identifies the Reuse Element by providing utility documentation, the Reuse Element data, and descriptive documentation.

##### **Objects**

Design Engineer  
Reuse Element Utility Documentation  
Reuse Element Data  
Reuse Element Descriptive Documentation

#### **4.1.3 Analyze Reuse Element For Class Determination [3]**

##### **Description**

The Design Engineer and the Database Engineer analyze descriptive documentation and Reuse Element data for determination of the Class of the Reuse Element.

##### **Objects**

Database Engineer  
Design Engineer  
Reuse Element Utility Documentation  
Reuse Element Data  
Reuse Element Descriptive Documentation  
Class Determination Analysis Results

#### **4.1.4 Define New Class [4]**

##### **Description**

The Database Engineer and Design Engineer define a new class for the Reuse Element.

##### **Objects**

Design Engineer  
Database Engineer  
Class Determination Analysis Results  
Class Description and Attributes

#### 4.1.5 Modify Current Class [5]

##### Description

The Database Engineer and Design Engineer modify the attributes of a current Reuse Class for the Reuse Element.

##### Objects

Design Engineer  
Database Engineer  
Reuse Database Class

#### 4.1.6 Instantiate Class [6]

##### Description

The Database Engineer instantiates the Reuse Database Class with the new Reuse Element.

##### Objects

Database Engineer  
Reuse Database Class  
Reuse Element

#### 4.1.7 Transit To Operations [7]

##### Description

The Database Engineer and RDMS Administrator transit the updated Reuse Database to Operations.

##### Objects

Database Engineer  
RDMS Administrator  
Reuse Database

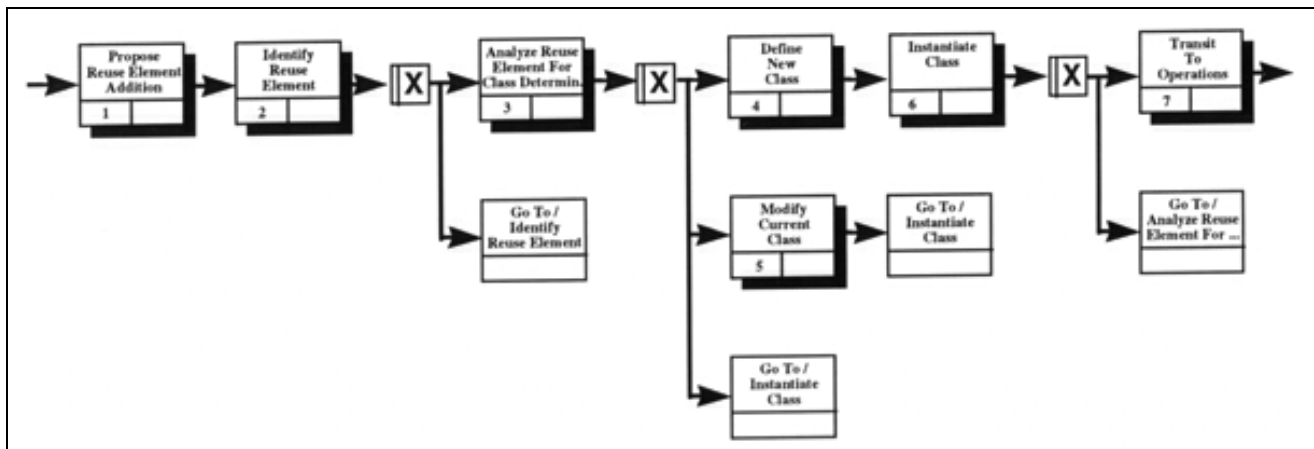


Figure 1: Top Level Process Diagram: Reuse Element Addition

## 4.2 Reuse Element Addition Decompositions

These are the decompositions for adding a Reuse Element to the reuse database.



#### 4.2.1 Decomposition For: Propose Reuse Element Addition Process

This is the decomposition for proposing the addition of a Reuse Element. These processes are illustrated in Figure 2.

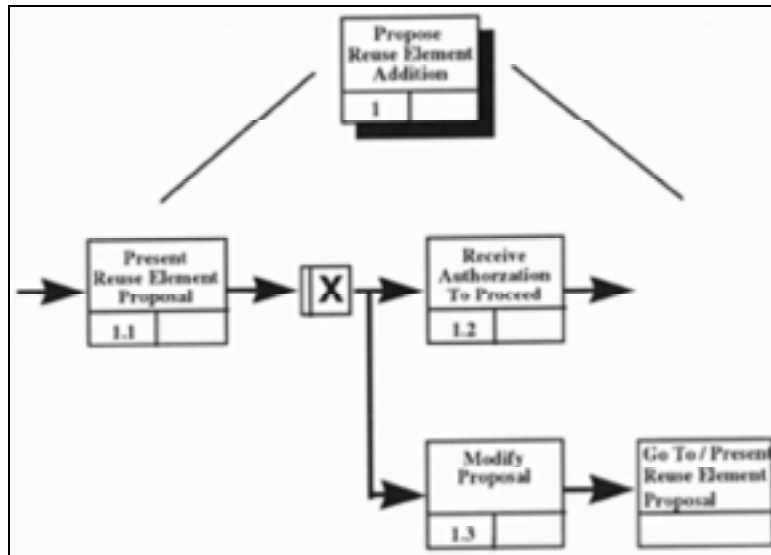


Figure 2: Process Decomposition: Propose Reuse Element Addition

##### 4.2.1.1 Present Reuse Element Proposal [1.1]

###### Description

The Design Engineer presents the Reuse Element proposed for addition to the Reuse Database to his/her supervisor.

###### Objects

Design Engineer  
Supervisor  
Reuse Element Proposal Material

##### 4.2.1.2 Receive Authorization To Proceed [1.2]

###### Description

The Design Engineer receives authorization to proceed from his/her supervisor.

###### Objects

Design Engineer  
Supervisor  
Authorization To Proceed

##### 4.2.1.3 Modify Proposal [1.3]

###### Description

The Design Engineer modifies the Reuse Element proposal based on the discussion with his/her supervisor.

**Objects**

Design Engineer  
Reuse Element Proposal Material

**4.2.2 Decomposition For: Identify Reuse Element Process**

This is the decomposition for identifying the Reuse Element. These processes are illustrated in Figure 3.

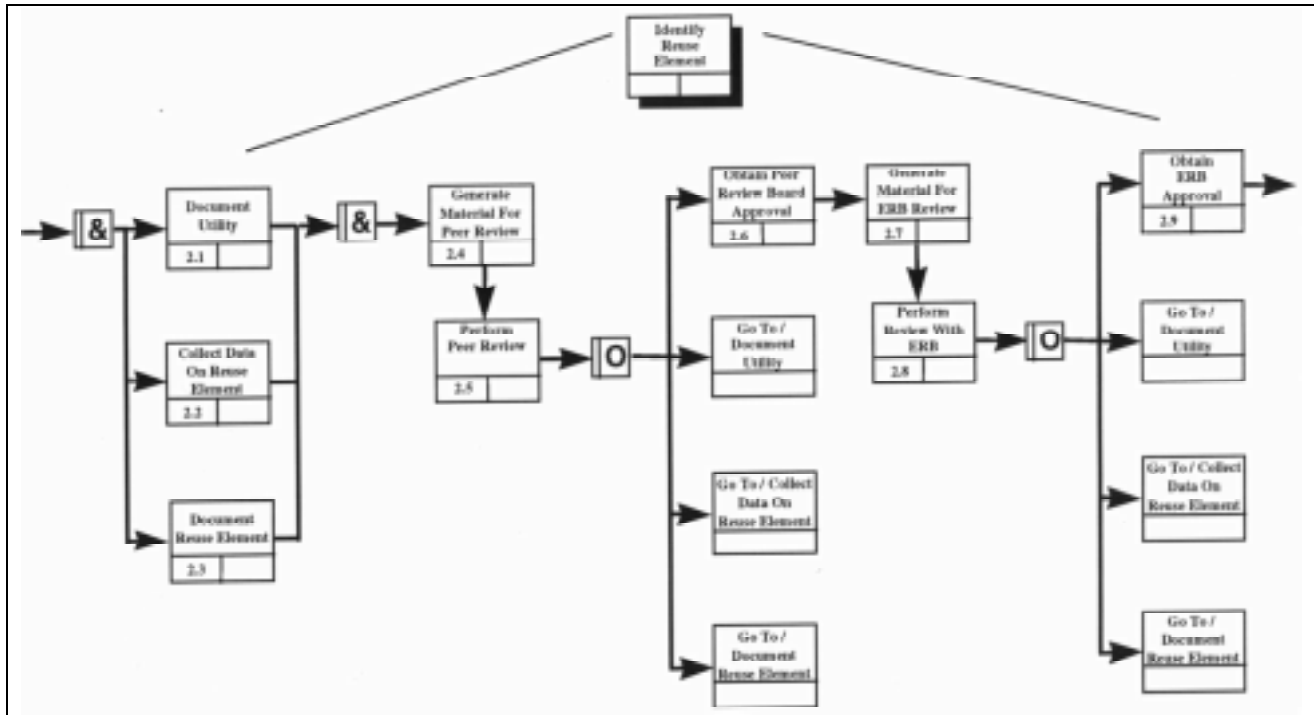


Figure 3: Process Decomposition: Identify Design Reuse Element

**4.2.2.1 Document Utility [2.1]**

**Description**

The Design Engineer documents the utility of the Reuse Element.

**Objects**

Design Engineer  
Utility Documentation

**4.2.2.2 Collect Data On Reuse Element [2.2]**

**Description**

The Design Engineer collects data on the Reuse Element.

**Objects**

Design Engineer  
Reuse Element Data

#### **4.2.2.3 Document Reuse Element [2.3]**

##### **Description**

The Design Engineer documents the Reuse Element.

##### **Objects**

Design Engineer

Reuse Element Descriptive Documentation

#### **4.2.2.4 Generate Material For Peer Review [2.4]**

##### **Description**

The Engineer generates material for the Peer Review

##### **Objects**

Design Engineer

Peer Review Presentation Material

#### **4.2.2.5 Perform Peer Review [2.5]**

##### **Description**

The Engineer presents the Peer Review Presentation Material to the Peer Review Board.

##### **Objects**

Design Engineer

Peer Review Board

Peer Review Presentation Material

#### **4.2.2.6 Obtain Peer Review Board Approval [2.6]**

##### **Description**

Obtain approval from the Peer Review Board.

##### **Objects**

Design Engineer

Peer Review Board

Peer Review Board Approval

#### **4.2.2.7 Generate Material For ERB Review [2.7]**

##### **Description**

The Engineer generates presentation material for the Engineering Review Board (ERB) Review.

##### **Objects**

Design Engineer

ERB Review Presentation Material

#### **4.2.2.8 Perform Review With ERB [2.8]**

##### **Description**

The Engineer presents the Engineering Review Board (ERB) Review Presentation Material.

## Objects

Design Engineer

Engineering Review Board (ERB)

Engineering Review Board (ERB) Review Presentation Material

### 4.2.2.9 Obtain ERB Approval [2.9]

## Description

Obtain Engineer Review Board (ERB) approval.

## Objects

Design Engineer

Engineering Review Board (ERB)

Engineering Review Board (ERB) Approval

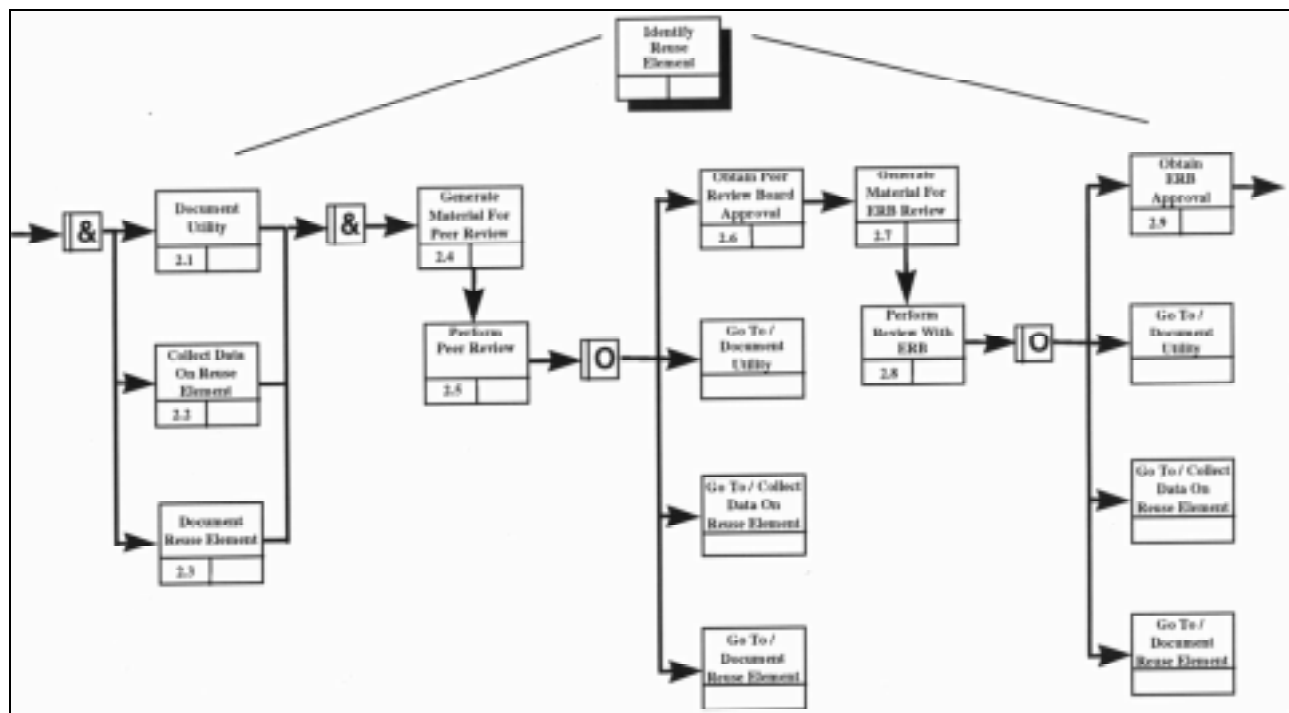


Figure 3: Process Decomposition: Identify Design Reuse Element

### 4.2.3 Decomposition For: Analyze RE For Class Determination Process

This is the decomposition for analyzing the Reuse Element for class determination. These processes are illustrated in Figure 4.

#### 4.2.3.1 Review Current Class Hierarchy [3.1]

## Description

The Design Engineer and Database Engineer review the current reuse database class hierarchy.

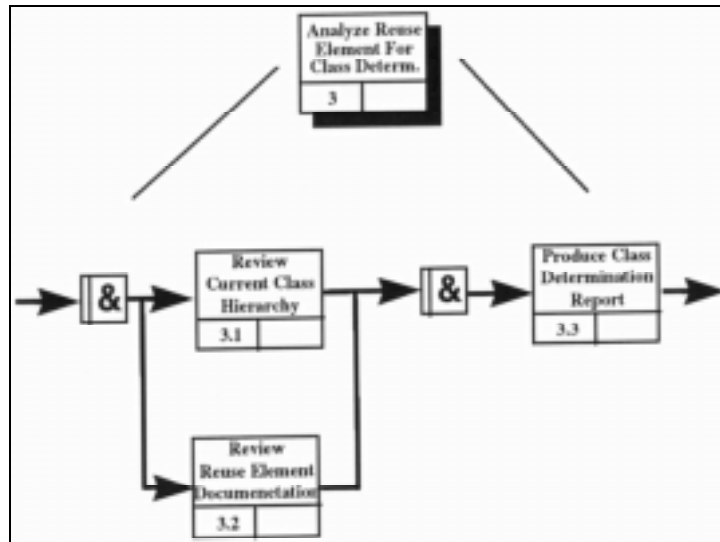


Figure 4: Process Decomposition: Analyze Reuse Elements for Class Determination

### Objects

Design Engineer  
Database Engineer  
Reuse Database Class Hierarchy

#### 4.2.3.2 Review Current Class Hierarchy [3.2]

### Description

The Design Engineer and Database Engineer Review the Reuse Element Documentation.

### Objects

Design Engineer  
Database Engineer  
Reuse Element Data  
Reuse Element Descriptive Documentation

#### 4.2.3.3 Produce Class Determination Report [3.3]

### Description

The Design Engineer and Database Engineer produce a report containing the results of the class determination analysis.

### Objects

Design Engineer  
Database Engineer  
Reuse Class Determination Report

#### 4.2.4 Decomposition For: Define New Class Process

This is the decomposition for defining a new class in the reuse database. These processes are illustrated in Figure 5.

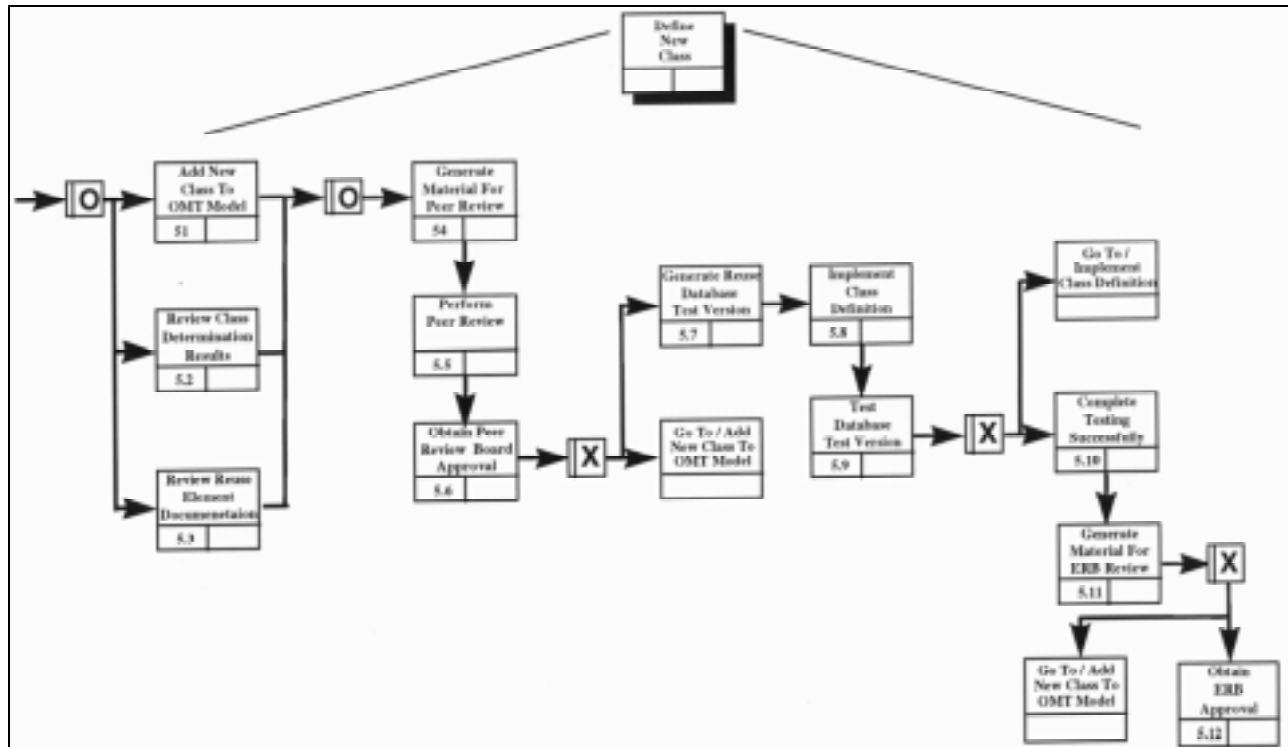


Figure 5: Process Decomposition: Define New Class

#### 4.2.4.1 Add New Class To OMT Model [4.1]

##### Description

The Database Engineer adds the new class to the OMT Model.

##### Objects

Database Engineer  
OMT Model  
OMT Modeling Tool

#### 4.2.4.2 Review Class Determination Analysis [4.2]

##### Description

The Database Engineer reviews the class determination analysis report.

##### Objects

Database Engineer  
Class Determination Results

#### 4.2.4.3 Review Reuse Element Documentation [4.3]

##### Description

The Database Engineer Reviews the Reuse Element Documentation.

##### Objects

Database Engineer

Class Determination Results  
Reuse Element Descriptive Documentation

#### **4.2.4.4 Generate Material For Peer Review [4.4]**

##### **Description**

The Engineer generates material for the Peer Review.

##### **Objects**

Database Engineer  
Peer Review Presentation Material

#### **4.2.4.5 Perform Peer Review [4.5]**

##### **Description**

The Engineer presents the Peer Review Presentation Material to the Peer Review Board.

##### **Objects**

Database Engineer  
Peer Review Presentation Material  
Peer Review Board

#### **4.2.4.6 Obtain Peer Review Board Approval [4.6]**

##### **Description**

Obtain approval from the Peer Review Board.

##### **Objects**

Database Engineer  
Peer Review Board  
Peer Review Board Approval

#### **4.2.4.7 Generate Reuse Database Test Version [4.7]**

##### **Description**

The Database Engineer generates a test version of the reuse database.

##### **Objects**

Database Engineer  
Reuse Database Test Version

#### **4.2.4.8 Implement Class Definition [4.8]**

##### **Description**

The Database Engineer implements the new class in the test version of the reuse database.

##### **Objects**

Database Engineer  
Reuse Database Test Version  
OMT Model

#### **4.2.4.9 Test Database Test Version [4.9]**

##### **Description**

The Database Engineer tests the database test version with the new class implemented.

##### **Objects**

Database Engineer

Reuse Database Test Version

#### **4.2.4.10 Complete Testing Successfully [4.10]**

##### **Description**

Testing of the implementation of the new class into the test version of the database is completed successfully.

##### **Objects**

Database Engineer

Test Results

#### **4.2.4.11 Generate Material For ERB Review [4.11]**

##### **Description**

The Engineer generates presentation material for the ERB Review.

##### **Objects**

Database Engineer

Engineering Review Board (ERB) Review Presentation Material

#### **4.2.4.12 Obtain ERB Approval [4.12]**

##### **Description**

Obtain Engineer Review Board (ERB) approval.

##### **Objects**

Database Engineer

Engineering Review Board (ERB)

Engineering Review Board (ERB) Approval

#### **4.2.5 Decomposition For: Modify Current Class Process**

This is the decomposition for modifying a current class in the reuse database. These processes are illustrated in Figure 6.

##### **4.2.5.1 Modify Current Class In OMT Model [5.1]**

##### **Description**

The Database Engineer modifies the appropriate current class in the OMT Model.



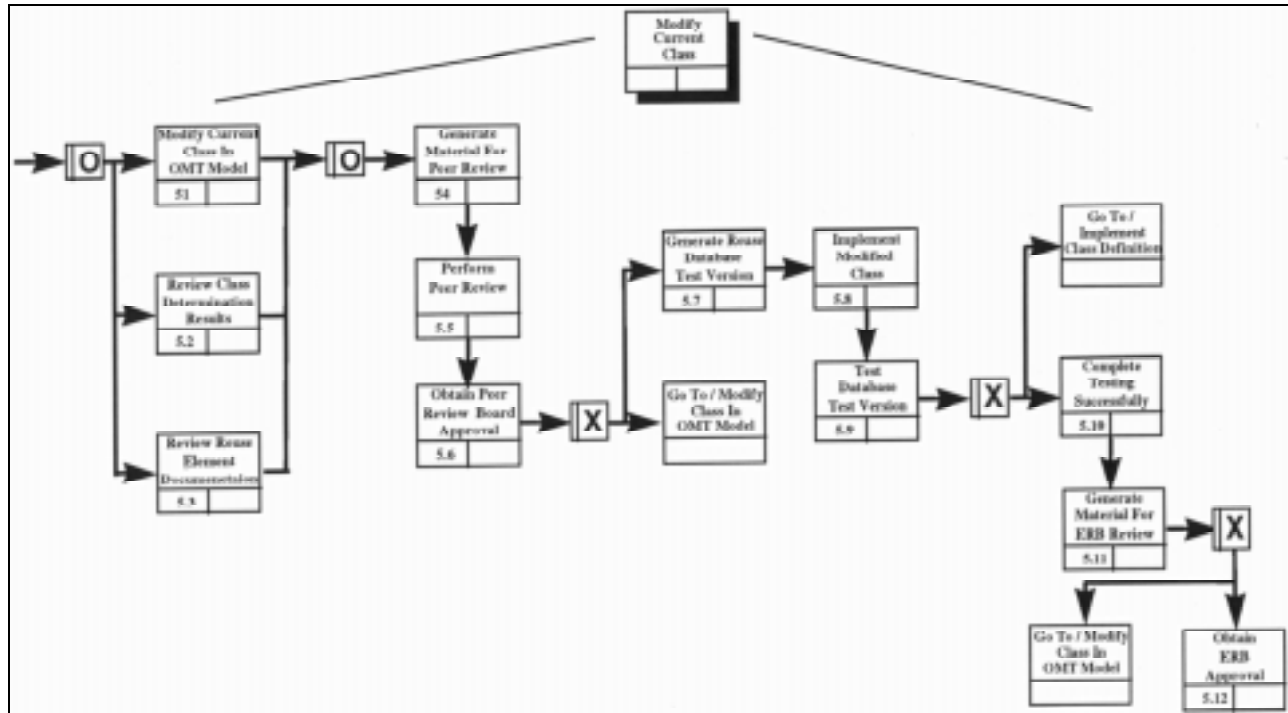


Figure 6: Process Decomposition: Modify Current Class

### Objects

Database Engineer  
 OMT Model  
 OMT Modeling Tool

### 4.2.5.2 Review Class Determination Analysis [5.2]

#### Description

The Database Engineer reviews the class determination analysis report.

### Objects

Database Engineer  
 Class Determination Results

### 4.2.5.3 Review Reuse Element Documentation [5.3]

#### Description

The Database Engineer Reviews the Reuse Element Documentation.

### Objects

Database Engineer  
 Reuse Element Descriptive Documentation

### 4.2.5.4 Generate Material For Peer Review [5.4]

#### Description

The Engineer generates material for the Peer Review.

**Objects**

Database Engineer  
Peer Review Presentation Material

**4.2.5.5 Perform Peer Review [5.5]****Description**

The Engineer presents the Peer Review Presentation Material to the Peer Review Board.

**Objects**

Database Engineer  
Peer Review Presentation Material  
Peer Review Board

**4.2.5.6 Obtain Peer Review Board Approval [5.6]****Description**

Obtain approval from the Peer Review Board.

**Objects**

Database Engineer  
Peer Review Board  
Peer Review Board Approval

**4.2.5.7 Generate Reuse Database Test Version [5.7]****Description**

The Database Engineer generates a test version of the reuse database.

**Objects**

Database Engineer  
Reuse Database Test Version

**4.2.5.8 Implement Modified Class [5.8]****Description**

The Database Engineer implements the modified class in the Reuse Database Test Version

**Objects**

Database Engineer  
Reuse Database Test Version  
OMT Model

**4.2.5.9 Test Database Test Version [5.9]****Description**

The Database Engineer tests the database test version with the modified class implemented.

**Objects**

Database Engineer

Reuse Database Test Version

#### **4.2.5.10 Complete Testing Successfully [5.10]**

##### **Description**

Testing of the implementation of the modified class into the test version of the database is completed successfully.

##### **Objects**

Database Engineer  
Test Results

#### **4.2.5.11 Generate Material For ERB Review [5.11]**

##### **Description**

The Engineer generates presentation material for the ERB Review.

##### **Objects**

Database Engineer  
Engineering Review Board (ERB) Review Presentation Material

#### **4.2.5.12 Obtain ERB Approval [5.12]**

##### **Description**

Obtain Engineer Review Board (ERB) approval.

##### **Objects**

Database Engineer  
Engineering Review Board (ERB)  
Engineering Review Board (ERB) Approval

#### **4.2.6 Decomposition For: Instantiate Class Process**

This is the decomposition for instantiating a reuse class in the reuse database. These processes are illustrated in Figure 7.

##### **4.2.6.1 Generate Reuse Database Test Version [6.1]**

##### **Description**

The Database Engineer generates a test version of the reuse database.

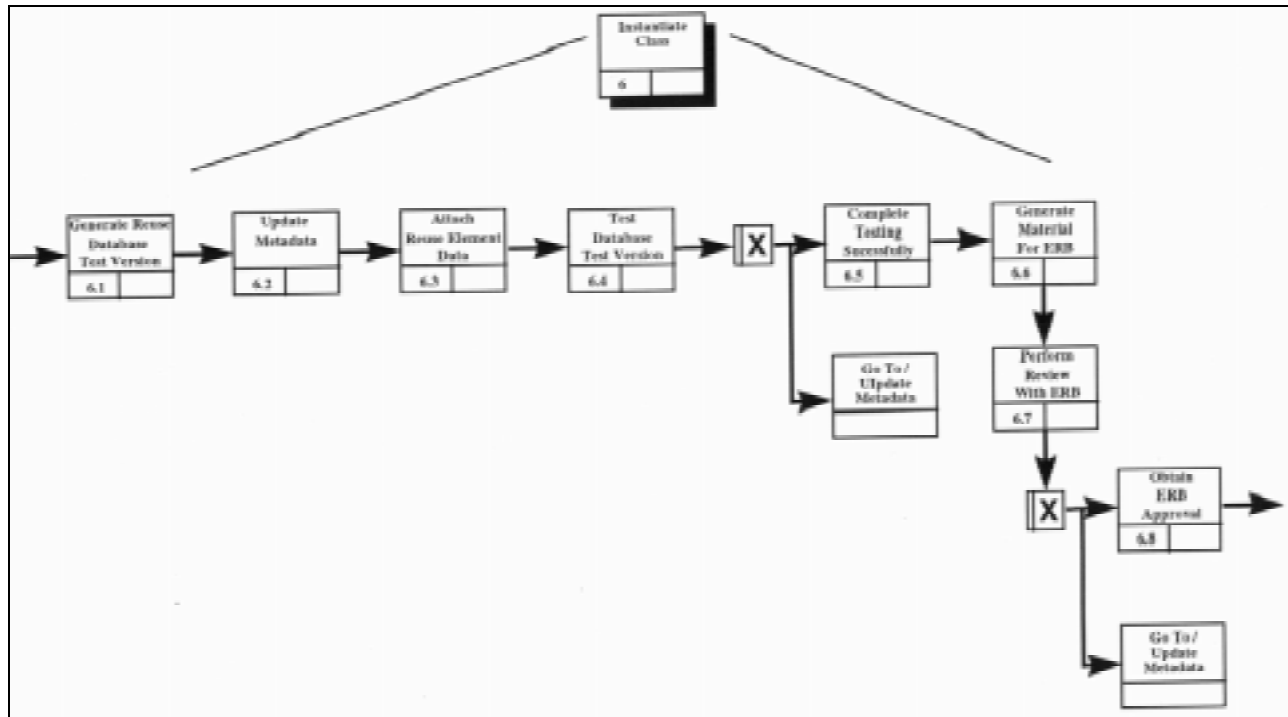
##### **Objects**

Database Engineer  
Reuse Database Test Version

##### **4.2.6.2 Update Metadata [6.2]**

##### **Description**

The Database Engineer updates the Reuse Database with metadata corresponding to the Reuse Element.



**Figure 7: Process Decomposition: Instantiate Class**

### Objects

Database Engineer  
Reuse Database Test Version  
Reuse Element Descriptive Documentation

#### 4.2.6.3 Attach Reuse Element Data [6.3]

### Description

The Database Engineer either attaches the Reuse Element data to the Test Version of the Reuse Database or provides a pointer to the location of the data.

### Objects

Database Engineer  
Reuse Database Test Version  
Reuse Element Data

#### 4.2.6.4 Test Database Test Version [6.4]

### Description

The Database Engineer tests the database test version with the modifications made to the Reuse Element metadata and attachment.

### Objects

Database Engineer  
Reuse Database Test Version

#### **4.2.6.5 Complete Testing Successfully [6.5]**

##### **Description**

Testing of the implementation of the modifications made to the Reuse Element metadata and attachment, into the test version of the database is completed successfully.

##### **Objects**

Database Engineer  
Testing Results

#### **4.2.6.6 Generate Material For ERB Review [6.6]**

##### **Description**

The Engineer generates presentation material for the ERB Review.

##### **Objects**

Database Engineer  
Engineering Review Board (ERB) Presentation Material

#### **4.2.6.7 Perform Review With ERB [6.7]**

##### **Description**

The Engineer presents the ERB Review Presentation Material.

##### **Objects**

Database Engineer  
Engineering Review Board (ERB)  
Engineering Review Board (ERB) Presentation Material

#### **4.2.6.8 Obtain ERB Approval [6.8]**

##### **Description**

Obtain Engineer Review Board (ERB) approval.

##### **Objects**

Database Engineer  
Engineering Review Board (ERB)  
Engineering Review Board (ERB) Approval

#### **4.2.7 Decomposition For: Transit To Operations**

This is the decomposition for transitioning the Reuse Database with the added Reuse Element to operations. These processes are illustrated in Figure 8.

##### **4.2.7.1 Freeze Test Version Of Reuse Database [7.1]**

##### **Description**

The Database Engineer freezes the test version of the Reuse Database.

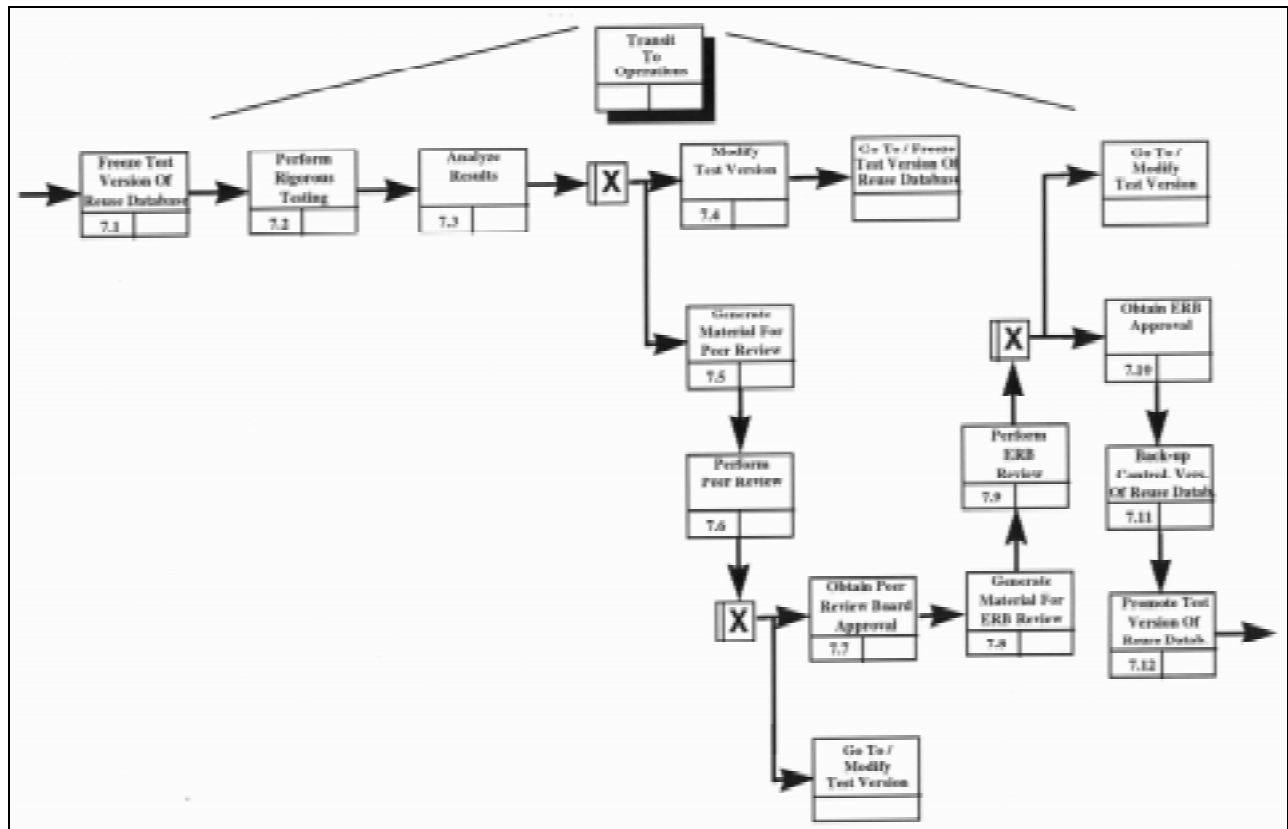


Figure 8. Process Decomposition: Transition to Operations

### Objects

Database Engineer  
Reuse Database Test Version

#### 4.2.7.2 Perform Rigorous Testing [7.2]

### Description

The Database Engineer and RDMS Administrator perform rigorous testing on the frozen configuration.

### Objects

Database Engineer  
RDMS Administrator  
Reuse Database Test Version

#### 4.2.7.3 Analyze Results [7.3]

### Description

The Database Engineer and RDMS Administrator analyze the results of the rigorous testing.

### Objects

Database Engineer  
RDMS Administrator  
Testing Results

#### **4.2.7.4 Modify Test Version [7.4]**

##### **Description**

The Database Engineer performs appropriate modifications to the Reuse Database Test Version.

##### **Objects**

Database Engineer  
Reuse Database Test Version

#### **4.2.7.5 Generate Material For Peer Review [7.5]**

##### **Description**

The Engineer generates material for the Peer Review.

##### **Objects**

Database Engineer  
Peer Review Presentation Material

#### **4.2.7.6 Perform Peer Review [7.6]**

##### **Description**

The Engineer presents the Peer Review Presentation Material to the Peer Review Board.

##### **Objects**

Database Engineer  
Peer Review Board  
Peer Review Presentation Material

#### **4.2.7.7 Obtain Peer Review Board Approval [7.7]**

##### **Description**

Obtain approval from the Peer Review Board.

##### **Objects**

Database Engineer  
Peer Review Board  
Peer Review Board Approval

#### **4.2.7.8 Generate Material For ERB Review [7.8]**

##### **Description**

The Engineer generates presentation material for the ERB Review.

##### **Objects**

Database Engineer  
ERB Presentation Material

#### **4.2.7.9 Perform Review With ERB [7.9]**

##### **Description**

The Engineer presents the ERB Review Presentation Material.

**Objects**

Database Engineer

ERB Presentation Material

**4.2.7.10 Obtain ERB Approval [7.10]**

**Description**

The Engineer presents the ERB Review Presentation Material.

**Objects**

Database Engineer

Engineering Review Board (ERB)

Engineering Review Board (ERB) Approval

**4.2.7.11 Back-up Controlled Version Of Reuse Database [7.11]**

**Description**

The RDMS Administrator generates a back-up of the controlled Reuse Database.

**Objects**

RDMS Administrator

Reuse Database

**4.2.7.12 Promote Test Version Of Reuse Database [7.12]**

**Description**

The RDMS Administrator promotes the test version of the reuse database to the controlled version.

**Objects**

RDMS Administrator

Reuse Database Test Version

**4.3 Top Level Processes: Reuse Element Utilization**

These are the Top Level Processes for utilizing a reuse element. These processes are illustrated in Figure 9.

**4.3.1 Characterize Reuse Element [1]**

**Description**

The Design Engineer characterizes the Reuse Element required.

**Objects**

Design Engineer

Reuse Element Characteristics



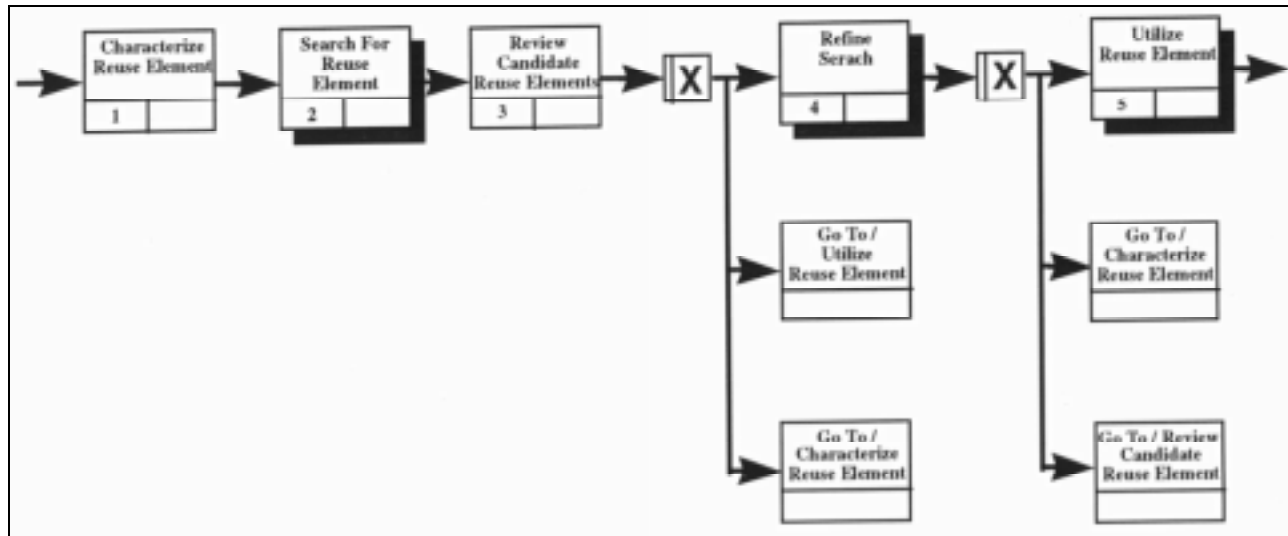


Figure 9: Top Level Process Diagram: Reuse Element Utilization

#### 4.3.2 Search For Reuse Element [2]

##### Description

The Design Engineer uses a search engine to search for a Reuse Element with the appropriate characteristics.

##### Objects

Design Engineer  
Search Engine

#### 4.3.3 Review Candidate Reuse Elements [3]

##### Description

The Design Engineer reviews the results of the search for Reuse Elements.

##### Objects

Design Engineer  
Search Results

#### 4.3.4 Refine Search [4]

##### Description

The Design Engineer Refines The Search using the results of the previous search.

##### Objects

Design Engineer  
Search Results  
Search Engine

#### 4.3.5 Utilize Reuse Element [5]

##### Description

The Design Engineer utilizes the Reuse Element in the design.

##### Objects

Design Engineer  
Search Results  
Reuse Element

#### 4.3.6 Decomposition For: Search For Reuse Element

This is the decomposition for searching for a Reuse Element to use in a design. These processes are illustrated in Figure 10.

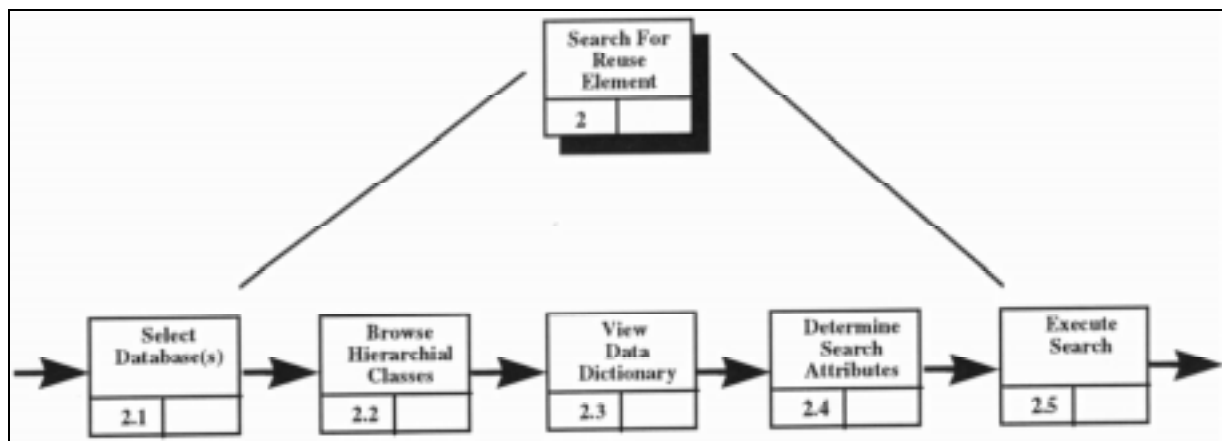


Figure 10: Process Decomposition: Search for Reuse Element

##### 4.3.6.1 Select Database(s) [2.1]

##### Description

The Design Engineer Selects the appropriate Reuse Database to search.

##### Objects

Design Engineer  
Search Engine

##### 4.3.6.2 Browse Hierarchical Classes [2.2]

##### Description

The Design Engineer Browses the hierarchial class representation in the selected database(s).

##### Objects

Design Engineer  
Search Engine

### 4.3.6.3 View Data Dictionary [2.3]

#### Description

The Design Engineer views the Data Dictionary for the classes.

#### Objects

Design Engineer  
Search Engine

### 4.3.6.4 Determine Search Attributes [2.4]

#### Description

The Design Engineer enters search attributes.

#### Objects

Design Engineer  
Search Engine

### 4.3.6.5 Execute Search [2.5]

#### Description

The Design Engineer executes the search.

#### Objects

Design Engineer  
Search Engine

### 4.3.7 Decomposition For: Refine Search

This is the decomposition for refining the search for a Reuse Element to use in a design. These processes are illustrated in Figure 11.

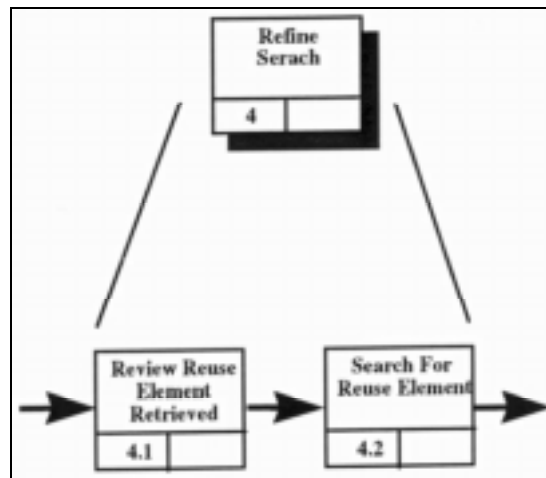


Figure 11: Process Decomposition: Refine Search Details

#### 4.3.7.1 Review Reuse Element Retrieved [4.1]

##### Description

The Design Engineer reviews the Reuse Elements retrieved from the latest search.

##### Objects

Design Engineer  
Search Results

#### 4.3.7.2 Search For Reuse Element [4.2]

##### Description

The Design Engineer uses a search engine to search for a Reuse Element with the appropriate characteristics.

##### Objects

Design Engineer  
Search Engine

#### 4.3.8 Decomposition For: Utilize Reuse Element

This is the decomposition for utilizing a Reuse Element in a design. These processes are illustrated in Figure 12.

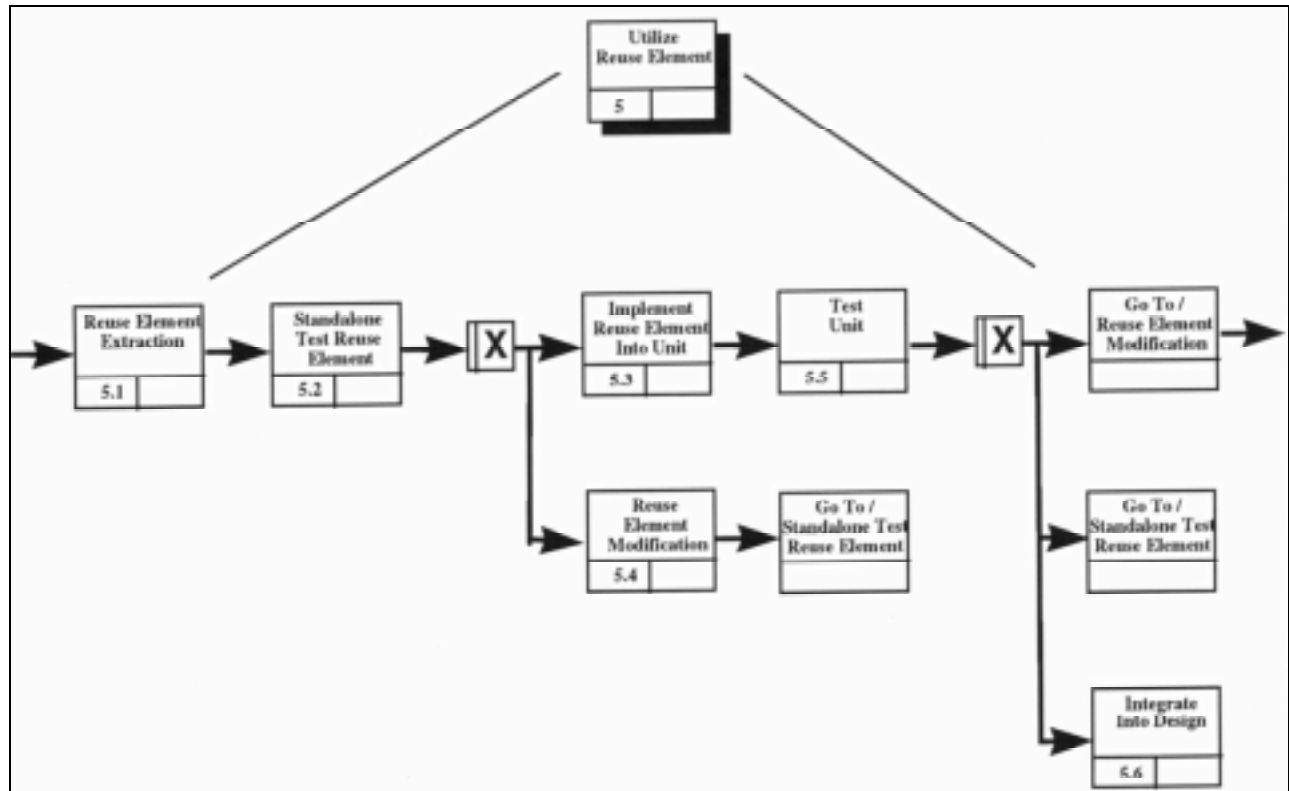


Figure 12: Process Decomposition: Utilize Reuse Element Details

#### **4.3.8.1 Reuse Element Extraction [5.1]**

##### **Description**

The Design Engineer extracts the Reuse Element From its stored location.

##### **Objects**

Design Engineer  
Search Results

#### **4.3.8.2 Standalone Test Reuse Element [5.2]**

##### **Description**

The Design Engineer performs standalone testing of the Reuse Element.

##### **Objects**

Design Engineer  
Reuse Element

#### **4.3.8.3 Implement Reuse Element Into Unit [5.3]**

##### **Description**

The Design Engineer implements the Reuse Element into the unit.

##### **Objects**

Design Engineer  
Reuse Element  
Unit Configuration

#### **4.3.8.4 Reuse Element Modification [5.4]**

##### **Description**

The Design Engineer modifies the Reuse Element

##### **Objects**

Design Engineer  
Reuse Element

#### **4.3.8.5 Test Unit [5.5]**

##### **Description**

The Design Engineer tests the unit.

##### **Objects**

Design Engineer  
Unit Configuration

#### **4.3.8.6 Integrate Into Design [5.6]**

##### **Description**

The Design Engineer integrates the Unit containing the Reuse Element into the overall design.

## **Objects**

Design Engineer  
Unit Configuration  
Design Configuration

## **5. Acronyms**

ATL	Advanced Technology Laboratories
CPC	Communications and Power Center
CSES	Commercial Satellite Enterprise Solution
IDEF	Integration Definition
KSL	Knowledge System Laboratories
OMT	Object Methodology Technique
RASSP	Rapid Prototyping of Application-Specific Signal Processors
RDOCH	Reuse Design Object Classification Hierarchy
RDMS	Reuse Data Management System
RRDMS	RASSP Reuse Data Management System
SPC	Software Productivity Consortium