AllFusion® Process Modeler

Getting Started

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Chapter

1

Introduction

The Purpose of This Guide

This guide introduces you to AllFusion® Process Modeler. By the time you have finished reading this guide, you will have an overview of the wide scope of this product and its usability will be familiar to you. It is important that you feel comfortable with AllFusion Process Modeler before you begin to use it.

Business Process Design

Today's information revolution changes the way you conduct business. The boundless growth of the Internet redefines commerce and presents enormous opportunities and unique challenges. Now, more than ever, it is critical for organizations to keep up with necessary organizational and operational changes. AllFusion Process Modeler (hereafter referred to as AllFusion PM) is designed to help you meet and exceed your objectives.

AllFusion PM is a comprehensive business-modeling environment that helps you to visualize, analyze, and improve business processes. This impacts your bottom line by reducing the total costs and risks associated with adapting to operational changes. AllFusion PM lets you:

- Assess current business operations
- Formulate and evaluate alternative responses to market pressures
- Communicate operation changes quickly and intuitively

Comprehensive Business Perspectives

You can use AllFusion PM models to provide a framework that helps you gain a better understanding of your business processes, and determine how these processes interact with the data flowing through the organization. Using this powerful tool, you gain a clear understanding and analysis of process, dataflow, and workflow.

Modeling Helps Your Business

There are three modeling methods supported by AllFusion PM that you can use to help you model your business:

- **Business Process Modeling (IDEF0)**—Lets you to systematically analyze your business, focusing on the normal day-to-day functions and the controls that support these functions.
- **Process Flow Modeling (IDEF3)**—This is also referred to as Workflow modeling. It is used to graphically describe and document processes by capturing information on process flow, the relationships between processes, and important objects that are part of the process. You can use workflow diagrams to assist business process reengineering efforts, develop a measure for determining the completeness of deliverables, and collect information on policies and procedures in the company.
- **Data Flow Modeling (DFD)**—Focuses on the flow of data between various tasks. It ensures that your organization can maximize data availability while you minimize response times.

Distinctive Features and Benefits

AllFusion PM has many distinctive features such as:

- **Intuitive User Interface**—Navigate easily through the point-and-click, drag-and-drop interface.
- **Automated Design Process**—Use AllFusion PM to ensure correct and consistent design results. Object highlighting guides you as you build your model, eliminating common modeling errors.
- **User-Defined Properties**—Customize AllFusion PM to capture information relevant to your business. Then AllFusion PM makes this information available through a dictionary grid that can then export the data to other programs like Microsoft Word and Microsoft Excel.
- **Integration of Modeling Techniques**—AllFusion PM provides integrated reuse and coordination for Business Process, Process Flow, and Data Flow modeling processes.
- **Cost and Performance Metric Analysis**—Activity-based costing is made simple by employing the comprehensive reporting and bi-directional interface of AllFusion PM with dedicated ABC tools.
- **Pre-testing**—AllFusion PM offers an interface to simulation software, allowing you to explore the effect of change before it actually takes place.

- **US Government FIPS Standard**—AllFusion PM incorporates Federal Information Processing Standards (FIPS) for process modeling. It is used by successful Fortune 500 companies, the Department of Defense, and other US government agencies.
- **Integration with the AllFusion Product Suite**—AllFusion PM is part of the AllFusion family of products, a foundation for building, deploying, and managing applications. AllFusion consists of process and project management, change and configuration management, modeling and design, and knowledge publication and visualization. AllFusion strengthens your ability to automate critical application life cycle processes and to thrive in today's increasingly complex and rapidly changing business climate. The AllFusion Modeling Suite helps you simplify the complex aspects of analyzing, designing, and implementing applications and business processes by providing a visualization of the relationships between business and technology.

Functional Advantages

When you use AllFusion PM, you realize several functional advantages, which include:

- **Swim Lane Diagrams**—You can add a Swim Lane diagram to any model that contains a Process Flow Network (IDEF3) diagram. In a Swim Lane diagram, you can better visualize the process flow because you can see additional process properties as separate lanes in the diagram. You can also select and order the swim lanes as needed.
- **Organization Charts**—You can create hierarchical organization charts based on Roles, Role Groups, and Resources that you define. You can also select various display options to view and print organization charts using Role names, Role Group names, Resource names, bitmaps, shapes, and colors.
- **Node Tree Diagrams**—You can display Node Tree diagrams with orthogonal lines and you can change activity properties by double-clicking Node Tree diagram objects. Very large Node Tree diagrams can be printed.
- **Model Explorer**—The AllFusion PM Model Explorer has an interface that includes tabs for Activities, Objects, and Diagrams. You can drag dictionary objects from the Objects tab onto the diagram. From the Diagrams tab, you can view the entire diagram hierarchy and access other AllFusion PM diagrams including Organization chart, Node Tree, Swim Lane, FEO, and IDEF3 Scenario diagrams.
- **API interface**—AllFusion PM provides an open interface for integration to other software. This interface provides access to internal AllFusion PM operations, permitting modeling operations from within another environment.

- **XML Export Filter**—You can select the classes of objects and properties that you want to export in XML format. You can also limit the export to a particular diagram in a model, with or without children.
- **Reporting capabilities**—You can produce a variety of reports including a Where Used report that lists where selected objects are used within a model, and a Diagnostic Dump report that creates dump files of either the diagram, model, model data usage, or AllFusion Model Manager IDs.
- **Model synchronization**—When AllFusion PM and AllFusion® ERwin® Data Modeler are installed on the same machine, and you have shared entities and attributes, you can easily synchronize your models. Instead of exporting a file from one application and then reading it in the other, you simply specify the model from which to import or update entities and attributes.
- **Dictionaries**—All dictionaries have an easy to use grid interface. You can customize any dictionary to suit your specific needs, and you can print, export, import, and report on dictionary contents.
- **Customizable Grid Interface**—Easily enter and manage model information using the dictionary framework in AllFusion PM. The customizable grid interface has a mechanism for quickly populating models, whether you are manually entering data or importing it from external text sources.
- **Report Template Builder**—AllFusion PM includes the powerful Report Template Builder (RTB) reporting tool that you can use to easily and quickly create reports about your model. You can create reusable report templates and export reports in .txt (CSV), HTML, PDF, and RTF formats.
- **Property Dialogs**—Diagram property dialogs and diagram object property dialogs include tabs for Font, Color, Roles, Box Style, Header/Footer, and Page Setup. You can also customize diagram Kit and Title label text to local language.
- **Workspace Features**—In the AllFusion PM workspace, you can resize objects and dock toolbars or the Model Explorer. Toolbar buttons adjust to the diagram type that you have open.
- **Graphics Extensions**—You can import bitmap files into AllFusion PM and apply them to diagram objects along with various display options. You can also assign shapes to diagram objects and display UDP markers on activities.
- **Object Multi-select**—You can lasso-select (or use the control or shift keys to select) multiple diagram objects for repositioning and deleting. When you reposition a group of diagram objects, AllFusion PM automatically stretches or reroutes all connected arrows.
- **Entity/Data Store Association**—You can associate entities that you create in AllFusion PM or import from AllFusion ERwin Data Modeler with AllFusion PM data stores in Data Flow Diagrams (DFD).
- **Use of merged activities**—You can use activities merged from a source model in any diagram type (IDEF0, DFD, IDEF3).

CA Technology Services: Delivering on the Vision of Enterprise IT Management

CA Technology Services™ delivers enterprise IT management solutions to help our customers achieve more efficient operations and better manage the IT infrastructure, which drives meaningful business value and financial results. CA Technology Services leverages its global expertise and certified professionals in enterprise systems management, business service optimization, security management and storage management to maximize customers' IT investments.

We draw from our more than 27 years of management software experience, over 1,000 technology services professionals, most of whom are CISSP-, ITIL-, and SNIA-certified, and the complementary service delivery capabilities of industry-leading service partners, to offer you best practices and time-tested, proven methodologies.

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CA Technology Services education and training is focused on helping you realize streamlined implementations, reduced time-to-value, and improved productivity to maximize the business value of CA technology. We deliver instructor-led, self-paced, and extended learning solutions across CA's complete, integrated, and open solutions for enterprise IT management (EIM) and partner with leading value-added education providers to extend our course offerings in enterprise systems management, security management, storage management, and business service optimization. Our dynamic team of certified and experienced professionals transfers real-time expertise in optimizing CA software products and leveraging proven IT process models that educates your organization about how to make practical application of best practices in your IT environment.

For a complete list of education and training courses, visit http://ca.com/education.

More Information

After reading this Getting Started, you can refer to the numerous resources available to you for additional information. Your product CD contains instructional documents that showcase your software and provide detailed explanations about the product's comprehensive, feature-rich components.

For online technical assistance and a complete list of locations, primary service hours, and telephone numbers, contact Customer Support at http://ca.com/support.

AllFusion PM Online Help

The AllFusion PM Help menu includes an AllFusion PM Online Tutorial menu option for AllFusion PM. Full lessons and sample models are included for you to learn how to use AllFusion PM. You will also find Help buttons on most dialog boxes that will provide more general information about the dialog box. If a Help button is not present, you can press F1 on your keyboard for context-sensitive help for the current dialog.

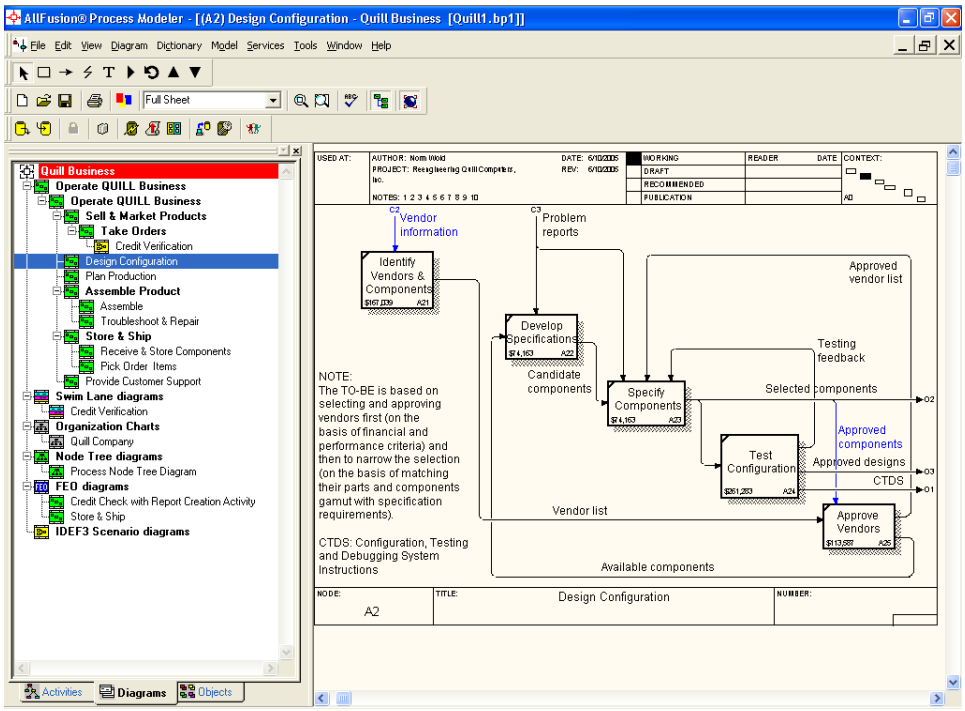
Chapter

2

Overview and Installation

Overview

The AllFusion PM model provides an integrated picture of how your organization gets things done, from small departments to the entire organization.



In today's complex and ever-changing world, businesses need to stay focused on the process of how they satisfy customer needs. Whether you are in a small or large organization, it is the process by which you deliver goods or services that defines quality and ultimately the success of the business. Business process improvement includes mapping and modeling the myriad of interactions within an organization to better understand and improve its operation. You can reengineer an entire organization or a distinct part of the organization such as aligning business requirements to the existing information technology.

Modeling is one of the most effective techniques for understanding and communicating business rules and processes. In a process model, extraneous detail is eliminated and important information is highlighted, thereby reducing the apparent complexity of the system under study. Graphics (namely boxes and arrows) are used to provide much of the structure, which is why most people think of process models as pictorial representations. With process modeling you can look at a system of interest in depth, so that subtle nuances of your organization can be analyzed, understood, and perhaps most importantly, communicated to others.

Before You Install AllFusion PM

Review the hardware and software requirements in the AllFusion PM readme file.

Install AllFusion PM

To install AllFusion PM, follow these steps:

1. Insert the installation CD into the CD drive.
2. If Autorun is enabled, you will be prompted to install. If autorun is disabled, click on the CD and double-click on Setup.exe.
3. A License Agreement appears for you to review. If you accept the terms as described in the License Agreement, select Yes. If not, select No and exit the installation process. You can click Print to print the license agreement.
4. You are prompted to follow the instructions provided by the Install program. The installation program asks a series of questions you must answer, including:
   - User information
   - Destination folder for the AllFusion PM files
5. When prompted to choose a Setup Type, you can choose Complete or Custom.
   - Choose Complete to install all program features.
   - Choose Custom to install features that you can select. A new window displays with options to select specific features for installation, such as the API files, sample models, the tutorial, and so on. You can also evaluate the space needed to install each feature, and change the destination folder for these files.

6. Click Next to continue with the installation wizard. When prompted, click Install to start the installation process.
7. When the install completes, a final screen displays with the following two options:
   - Launch AllFusion Process Modeler r7.
   - Show the readme file.

Both check boxes are selected by default so you can review the readme file, and proceed with product licensing. Click Finish to exit the wizard.

If you have not already licensed AllFusion Process Modeler, you can license the program at this time. Follow the on-screen prompts to open the License Verification dialog and enter the license key provided with the product CD.

Chapter 3

Introducing Basic Concepts and Features

Modeling Methods and Diagramming

The following sections describe the modeling methods and processes used by AllFusion PM.

Activity Models

An activity model presents a system as a collection of activities in which each activity transforms some object or collection of objects. Activity models represent activities as boxes, shapes, or graphical bitmaps. These shapes are then labeled with a verbal description to represent what the activity accomplishes. To further characterize the activity, arrows are used to represent the interface between an activity and its environment.

The level of detail that is shown in an activity model diagram is known as a hierarchical relationship. For instance, an activity hierarchy might look like the following outline:

Activity Hierarchy

```
Operate Business
    Plan Production
Manage Component Inventory
Schedule Production
Dispose of Outdated Component Parts
    Assemble Product
Populate Motherboards
Assemble
Configure
Perform Final Test
Troubleshoot and Repair
Prepare Order for Shipment
```

IDEF0 Function Modeling Method

IDEF0 is a technique that models entire systems as a set of interrelated activities or functions. In this way, the functions of a system can be analyzed independently of the objects performing those functions.

Before you begin building an IDEF0 model, you are required to identify the purpose of the model, the model's scope, and the intended audience for the model's presentation. You are also asked to submit the perspective (for example, customer, supplier, store owner, and editor) from which the model will view the system.

IDEF0 contains two graphical symbols—boxes and arrows. Use this AllFusion PM component at the beginning stage of a project and to provide an analysis for the IDEF3 method.

IDEF3 Process Description Capture Method

IDEF3 is a technique designed to provide a structured method by which a domain expert can describe a situation as an ordered sequence of events, and can describe any participating objects of those events.

Use this AllFusion PM component to model a process that may not yet be complete. You can judge the performance of the method by analyzing it through simulation.

Data Flow Diagramming

Similar to IDEF0, Data Flow Diagramming models systems as a network of activities connected to one another by pipelines of objects. Additionally, data flow diagrams also model holding tanks called data stores, and external entities, which represent interfaces with objects outside the system. The arrows used by DFD represent the movement of data from an activity.

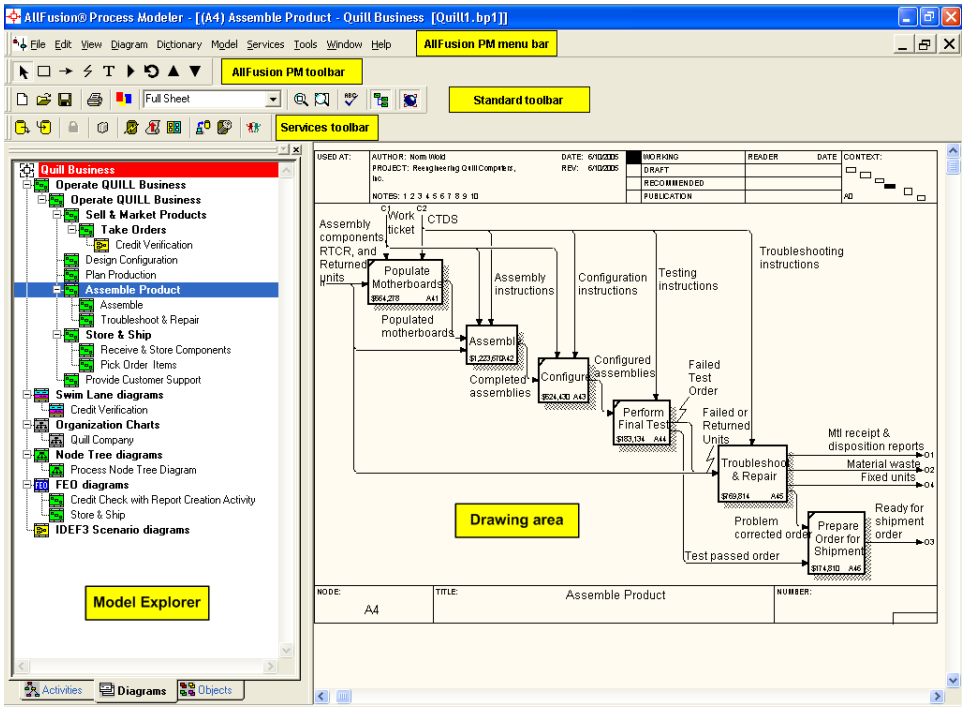
Data Flow Diagramming is widely used in software design.

Activity Based Cost and Performance Metrics

Activity Based Costing is a technique for capturing and analyzing activity costs. This method is used along with the results of other system, object, and activity models. This method is very valuable in delivering an accurate calculation of the production cost of a product based on the cost to perform all of the activities involved in its creation.

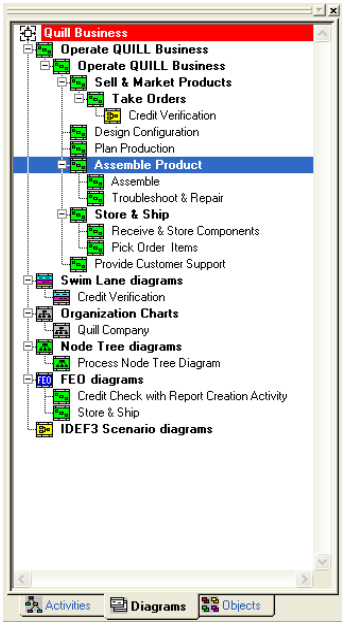
The AllFusion PM Workplace

The following diagram typifies the environment in which a AllFusion PM model is created:



AllFusion PM Model Explorer

The AllFusion PM Model Explorer is a powerful tool that you can use to globally view and access activity, diagram, and dictionary objects in any open AllFusion PM model. With one or more models open, you can view all diagrams, activities, and dictionary objects as graphical objects in a collapsible and expandable hierarchical tree-like structure. For any methodology you use, the Model Explorer gives you a total perspective of the entire model.



You can click the Activities tab or the Diagrams tab in the Model Explorer to view the activity hierarchy or diagram hierarchy of all activities and diagrams in any open model. In the Activities tab, you can open Activity Property Dialogs, cut and paste activities, and create decompositions within the same model or across different models. In the Diagrams tab you can view and open Diagram Property Dialogs for all AllFusion PM diagram types including Node Tree, FEO, IDEF3 Scenario, Swim Lane, and Organization Charts.

When you click the Objects tab in the Model Explorer, you can view unused dictionary names (diagram object names not used in a diagram) and drag unused dictionary names to a diagram as diagram objects. For example, if you have a RECEIVE ORDER activity name in the dictionary, you can simply drag the RECEIVE ORDER name to the diagram to create the activity complete with all the other dictionary properties.

To display and hide the Model Explorer, click the Model Explorer button on the toolbar. When it is displayed, the Model Explorer appears in an adjustable and dockable pane to the left of the current model diagram.

Arrows in AllFusion PM

Using correct arrow styles is imperative to the integrity of every type of diagram you create in AllFusion PM. When you choose Default Arrow Types on the Model menu, you can change the arrow style default for all new arrows that you add to a diagram. You can also change the arrow thickness and style default in the Style tab in the Arrow Properties dialog.

Each time you change an arrow style default, the Arrow tool button changes to reflect the new arrow style.

The different arrow styles you can use in AllFusion PM are explained in the following table:

Arrow Style	Arrow Style Name	Description
	Precedence	Changes the arrow type to a solid line to illustrate precedence. You can draw this arrow from left to right or top to bottom. This arrow is the most commonly used in AllFusion PM.
	Relational	Changes the arrow type to a dashed line. In AllFusion PM, this arrow is also used to connect a referent to a UOW (Unit of Work, which is used to indicate an event, process, decision, or action) in IDEF3 modeling. You can draw this arrow in any direction from one object to another. This arrow is used primarily in IDEF3 and DFD modeling.
	Object Flow	Changes the arrow type to a double-headed arrow. You can draw this arrow from left to right or top to bottom. This arrow is used primarily in IDEF3 and DFD modeling.
	Bi-directional	Changes the arrow type to a directional arrow. You can draw this arrow in any direction between two objects. This arrow is only used in DFD modeling.

Chapter

4

Building Business Process Models

The IDEF0 Model Can Track Your Business

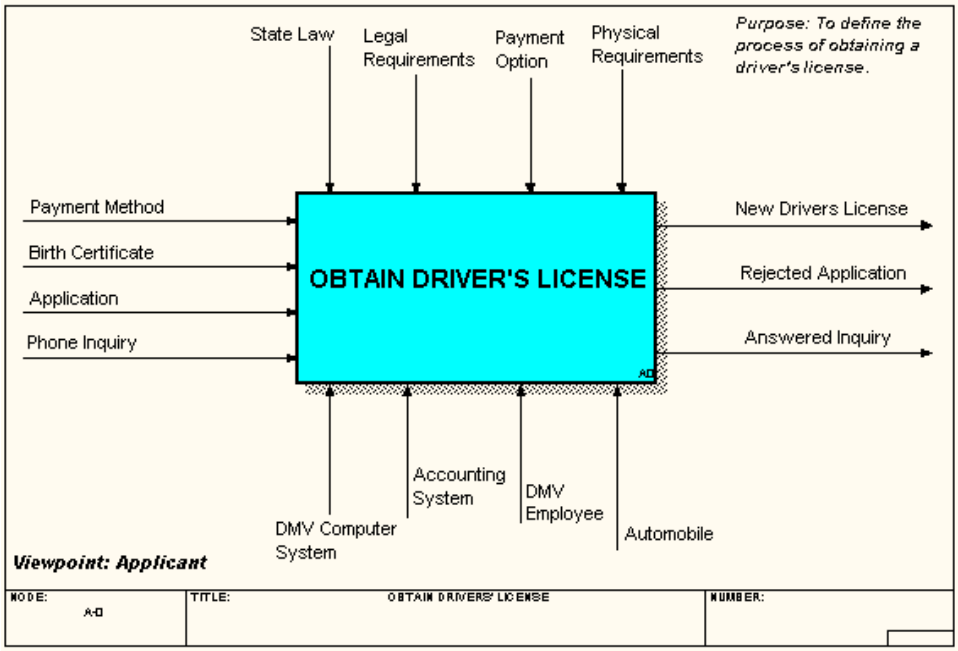
If you have ever experienced a business downturn, you might have pledged that next quarter you would prepare your organization against such an event reoccurring. Now you can become proactive by using AllFusion PM to view and manage your operations at various levels of detail. For example, it may be important to focus on a particular line of business within your company.

In this chapter, we will explore the IDEF0 modeling technique, which analyzes whole systems as a set of interrelated activities or functions.

Business Process Modeling

Business Process modeling (IDEF0) uses activities and arrows to graphically describe and document business processes. It does this by capturing information about the business or process and displaying the information and resources that are included in each step. IDEF0 activity modeling is best utilized as an analysis and logical design technique. As such, it is generally performed in the early phases of a project, followed by IDEF3 modeling for data collection and AS-IS process modeling.

Below is an example of an IDEF0 model representing the activity Obtain Driver's License. Note the input arrows to the left of the Activity Box (the box labeled Obtain Driver's License), the control arrows above, the output arrows to the right, and the mechanism arrows below. A table describing these four types of arrows appears in the section Arrow Types.



Boxes and Arrows

IDEF0 models a system as a set of activities (functions) using only two graphic symbols: boxes and arrows.

- Activities are represented by boxes containing a single, active verb plus a common noun that clarifies the objective of the activity from the viewpoint of the model, for example, Obtain Driver's License. You can use an adjective to further qualify the noun.
- Arrows represent four types of information that are connected to an activity:
  - An *Input* Arrow shows what is consumed or transformed by an activity.
  - An *Output* Arrow shows what an activity produces or creates.
  - A *Control* Arrow represents the objects that govern the manner in which inputs are transformed yet are not themselves transformed by the activity.
  - A *Mechanism* Arrow represents those objects that actually perform the transformation of inputs to outputs yet are not themselves transformed by the activity.

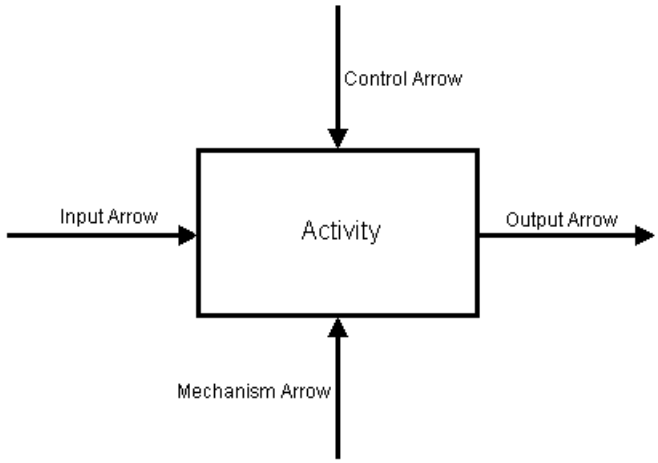
  Arrows are typically labeled with nouns such as Birth Certificate and Driver's License.

Arrow Types

ICOM, an acronym for the categories of information that are captured on IDEF0 diagrams, represents the four types of arrows:

Type of Arrow	What the Arrow Represents
Input	Something consumed or modified in the process
Control	A constraint on the operation of the process
Output	Something resulting from the process
Mechanism	Something used to perform the process, but is not itself consumed

The following figure illustrates the four arrow types, showing the specific box side to which each arrow type must connect:



Each arrow type connects to one specific side of an IDEF0 activity.

How Business Process Modeling Works

In order to build an IDEF0 model, you must first identify its *purpose* (the set of questions your model is intended to answer), *viewpoint* (the perspective from which the model will view the system), and *scope* (the appropriate breadth and depth of the model). After you have defined these three essential elements, you can begin to lay the groundwork for your model.

IDEF0 modeling always starts with a context diagram. When you create a business process model, a context diagram is created with one activity that defines your model. You can then add decomposition diagrams that can contain activities, arrows, and related properties. The context diagram depicts the highest-level activity in a model, and represents the boundary of the process under study with respect to purpose, scope, and viewpoint. The scope statement can be summarized as the activity name that appears in the model's context diagram.

Create a New IDEFO Model

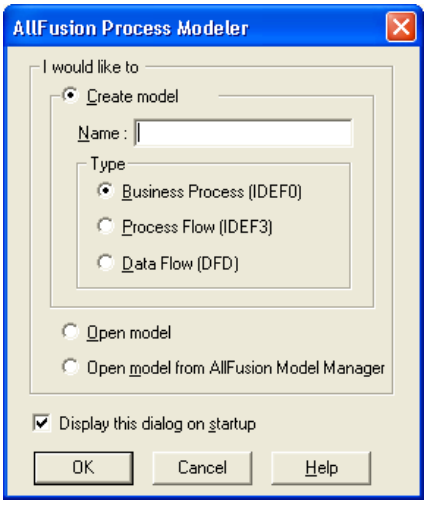
In the example that follows, you will create an IDEF0 diagram called Operate Quill Business.

Note: A similar IDEF0 diagram called Operate Quill Business is in the sample model called Quill Business under the file name Quill1.bp1 on your AllFusion PM CD.

To create a new IDEF0 model, follow these steps:

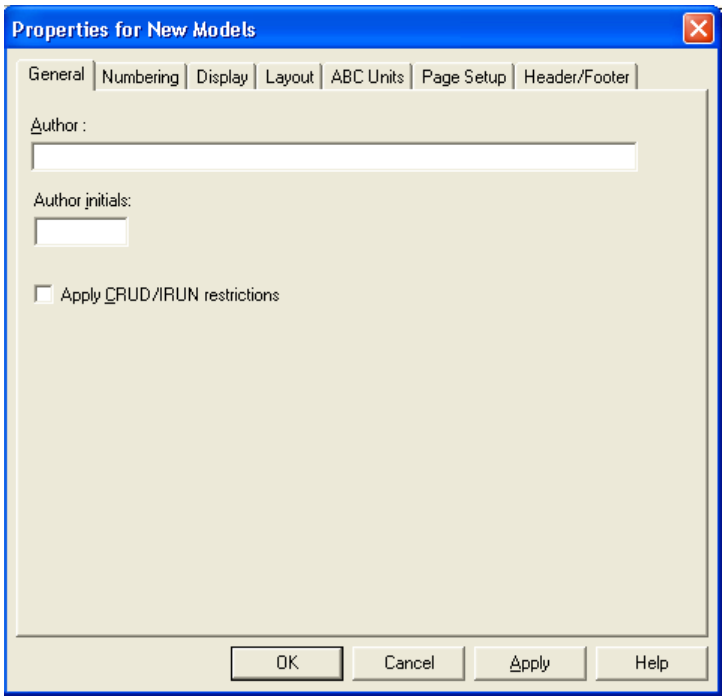
1. Click File, New from the AllFusion PM menu.

   The following dialog box opens.



2. Choose a name for the model you are creating. Because we hypothetically own a computer business called Quill Computers, Inc., name the model Quill Business. Select Business Process (IDEF0) as the model type.
3. Click OK.

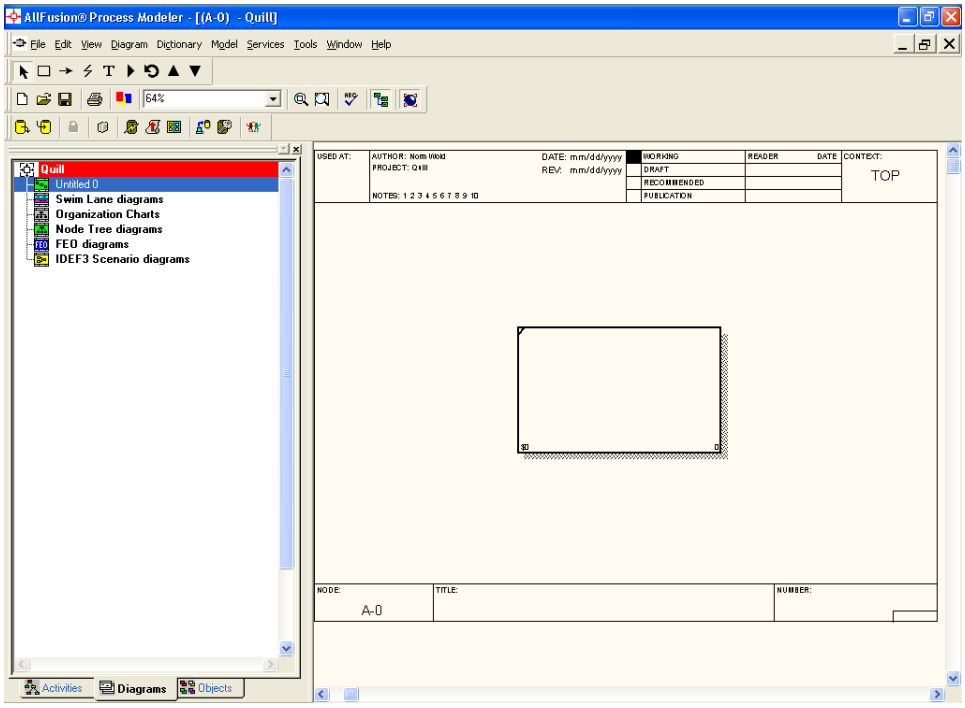
   The Properties for New Models dialog opens.



4. Enter your name as Author in the General tab.

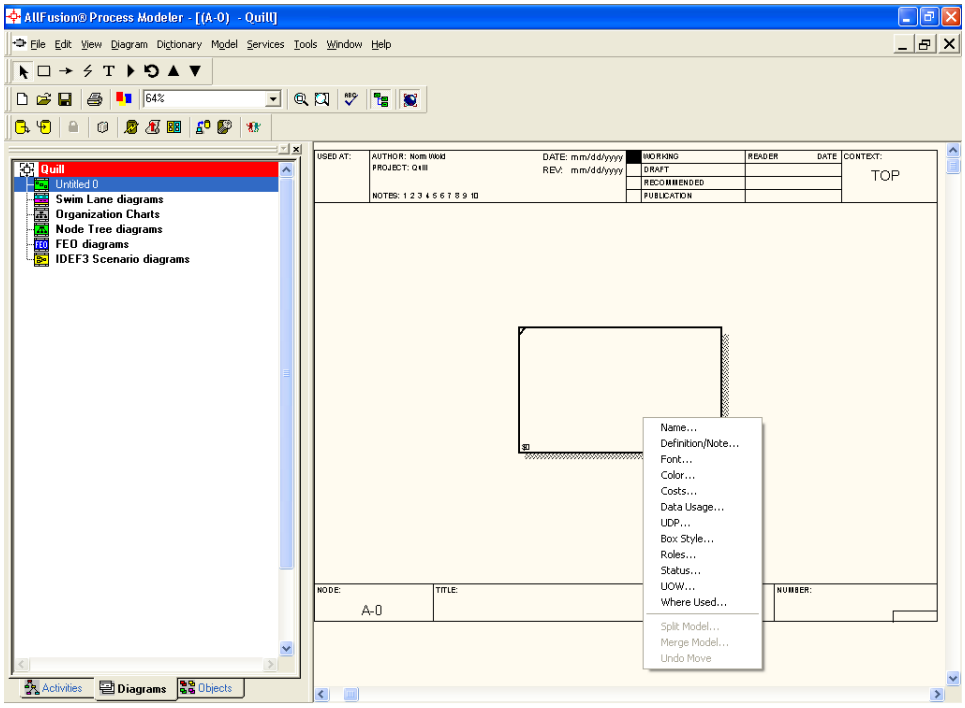
5. Click OK.

   The model opens showing the Activity Box that is your context activity.



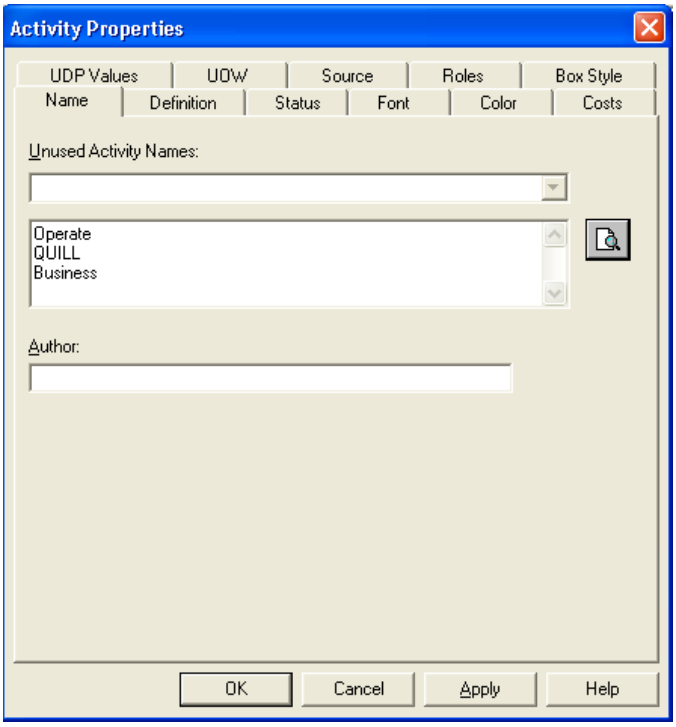
6. Right-click the box.

   A shortcut menu appears.



7. Select Name from the shortcut menu.

   The Activity Properties dialog opens.



8. Name the activity Operate QUILL Business, and click OK.

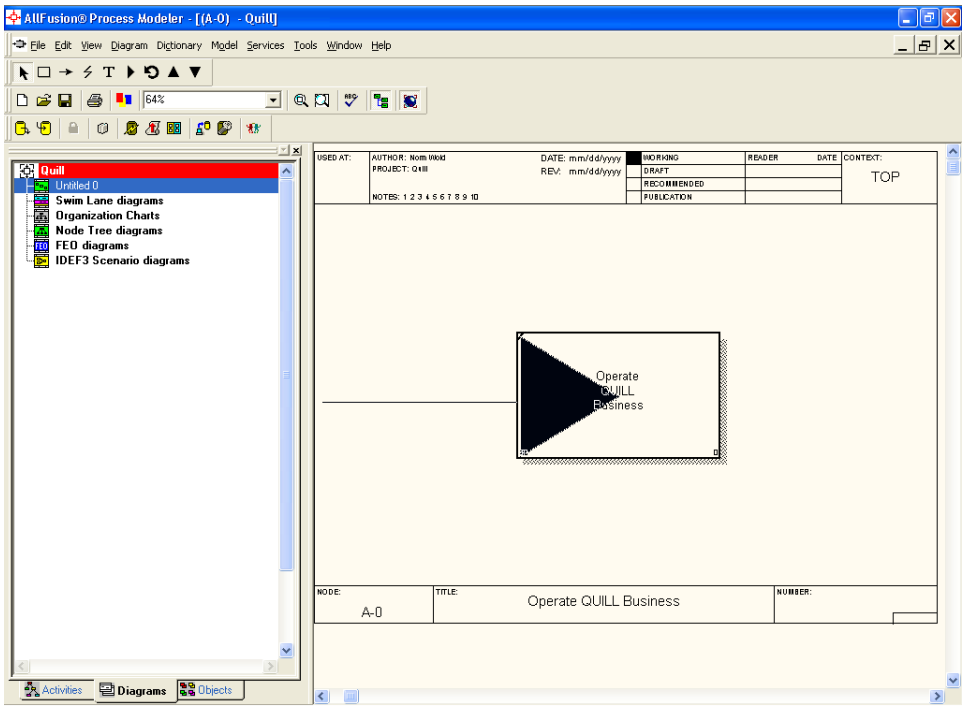
   The Activity Property dialog closes, and the label appears inside the context diagram Activity Box.

Create an Input Arrow

To populate the diagram with an Input arrow, follow these steps:

1. Select the Arrow Tool on the AllFusion PM toolbar.
2. Click the left border of the diagram, release the mouse button, and move the arrow cursor over the input side of the activity (in this case, the left side of the Operate QUILL Business Activity Box).

   A large highlight triangle that identifies the side of the box to which the arrow will connect appears in the Activity Box.



3. Click the large highlight triangle in the Activity Box.

   An Input arrow displays from the border of the diagram leading into the Operate QUILL Business Activity Box.

4. Right-click the stem of the arrow.

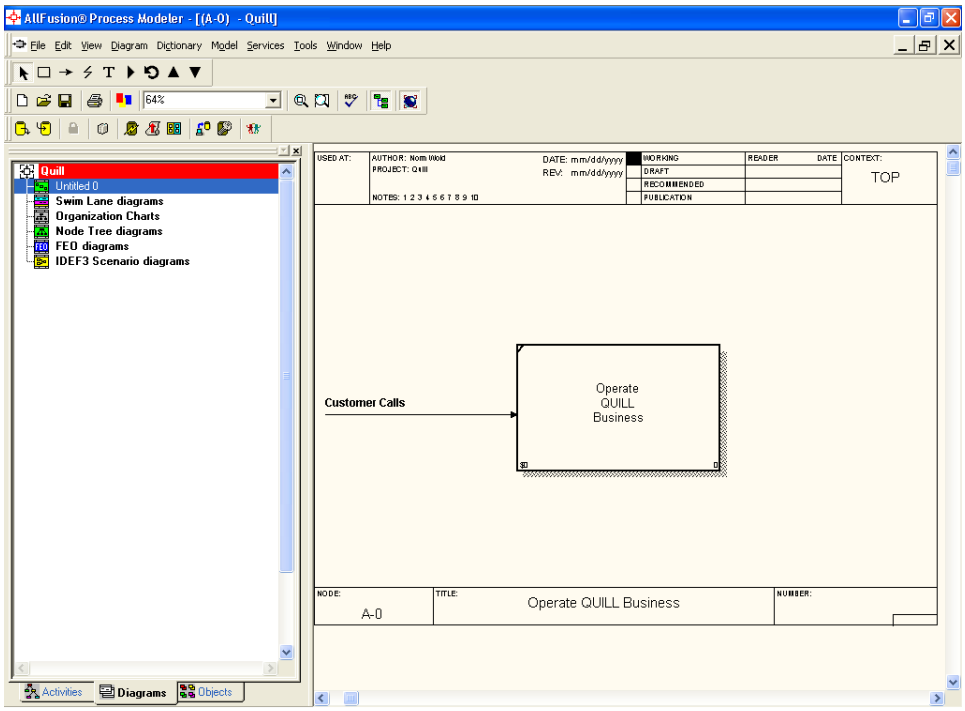
   A shortcut menu appears.

5. Select Name.

   The Arrow Properties dialog opens.

6. Name the arrow Customer Calls, and click OK.

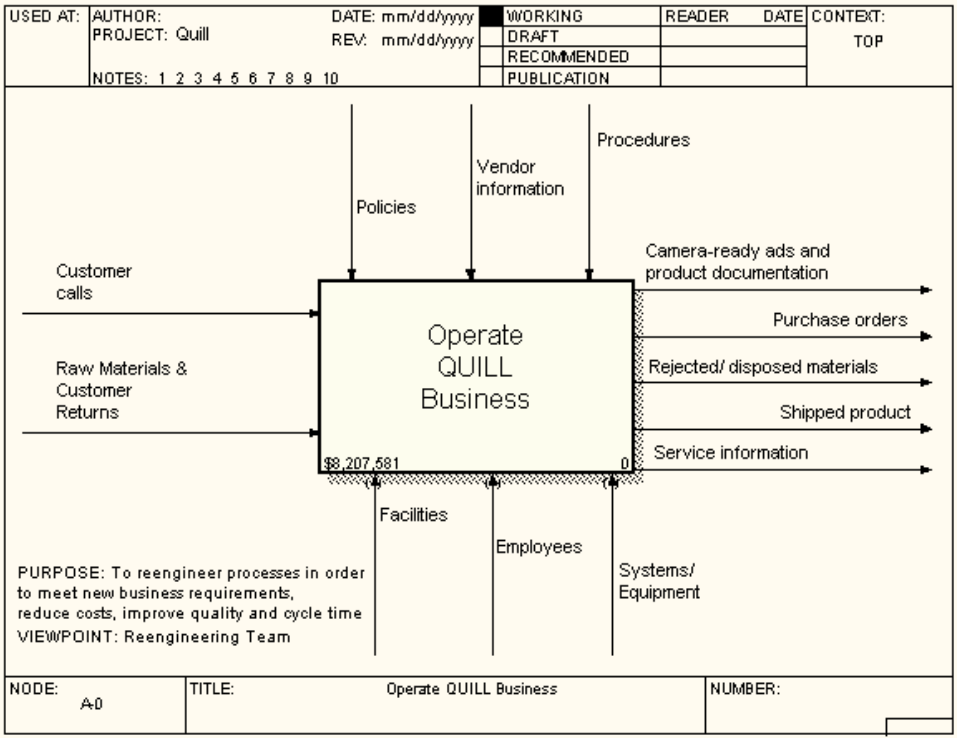
   The Arrow Properties dialog closes, and Customer Calls appears with the Input arrow.



Note: It is a good idea to keep the name near the root of the arrow to avoid spacing problems as the model develops.

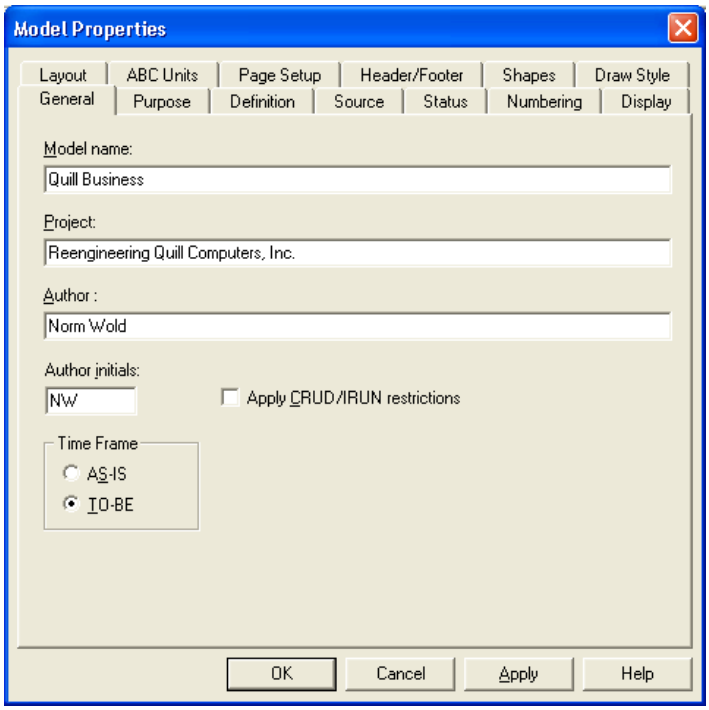
Continue Working with Your Model

You can continue to populate your model with Input, Output, Control, and Mechanism arrows using the steps just described. For the purpose of illustrating additional IDEF0 modeling functionality in this guide, we have populated the Operate QUILL Business context diagram with arrows that would typically be associated with this type of business:



You can insert a text block into the diagram by selecting the Text Tool from the toolbox and clicking where you want the text block to appear in the diagram. Then enter text in the Text Block Properties box that opens and click OK.

You can view and edit various properties of your model (such as Purpose) in the Model Properties dialog. Select Model Properties from the Model menu.



When Your Diagram is Complete

When the context diagram appears to be complete and stable, ask the following questions:

- Does the diagram summarize the business activity that you want to model?
- Is the context diagram consistent with the purpose, viewpoint, and scope statements?
- Are the arrows at an appropriate level of detail for the activity?
- Does the model have work group consensus?

After you have completed your context diagram, you can begin to explore processes in greater depth by decomposing your context activity. The following section introduces you to activity decomposition in IDEF0 modeling.

Activity Decomposition Diagrams

Decomposition diagrams are used in business modeling to break down an activity into its constituent parts. For example, the activity Run Video Store can be decomposed into activities such as Open Store, Receive Payment, Rent Video, and Close Store. Each of these activities can also be decomposed into associated constituent activities. You can choose the detail of activity decomposition.

You can decompose activities in IDEF0 and DFD modeling, and UOWs (Units of Work, which are used to indicate an event, process, decision, or action) in IDEF3 modeling. Although the methodologies differ, the basic premise of the decomposition is the same. AllFusion PM also allows you to decompose IDEF0 models into IDEF3 and DFD constituent activities and Units of Work. In other words, a business process (IDEF0) can be decomposed into other sub-processes, data flows (DFD), and workflows (IDEF3).

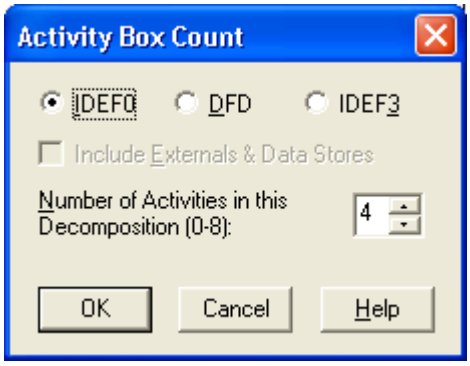
Note: It is a good idea to have at least two levels of IDEF0 activities before decomposing into another methodology. That way, you have enough activities to create child decomposition diagrams.

Decompose an Activity

To decompose an activity, follow these steps:

1. Select the activity you want to decompose. In our example, click your context diagram, Operate QUILL Business.
2. Select the Go To Child Diagram tool on the menu bar.

   The Activity Box Count dialog opens.

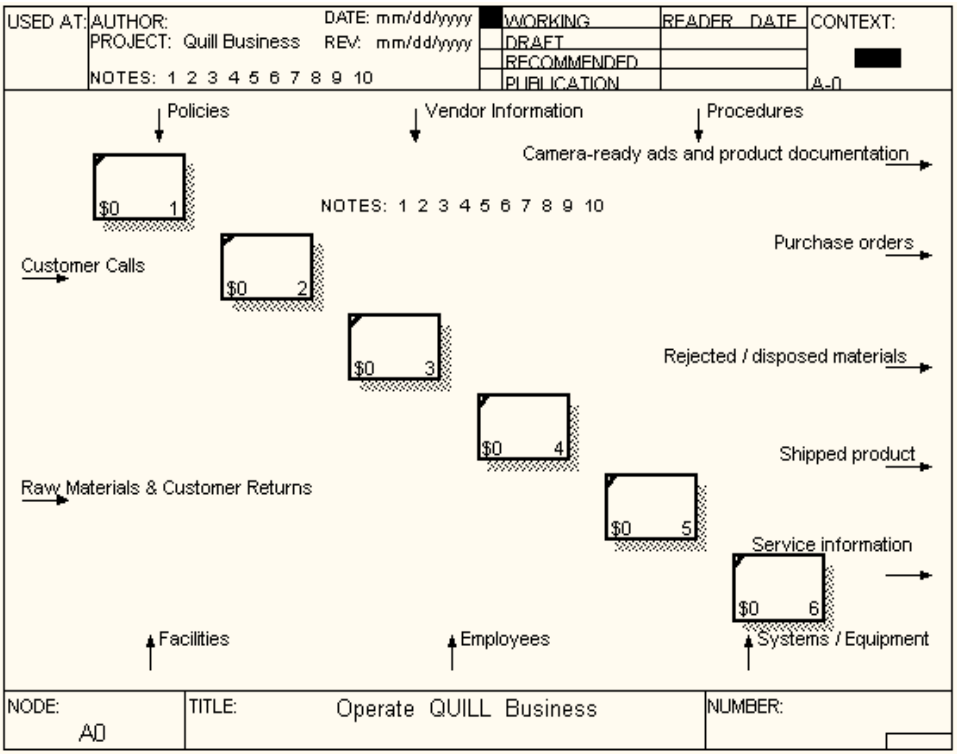


3. Select the IDEF0 methodology and choose six activities for your decomposition.

   Note: When decomposing an activity in IDEF0 modeling, the default methodology is IDEF0 and the default number of activities in the decomposition is four.

4. Click OK.

   AllFusion PM immediately creates the decomposition diagram with the number of activities you specify. In addition, AllFusion PM automatically includes all arrow objects from the context diagram in your decomposition.



5. Right-click a selected Activity Box.

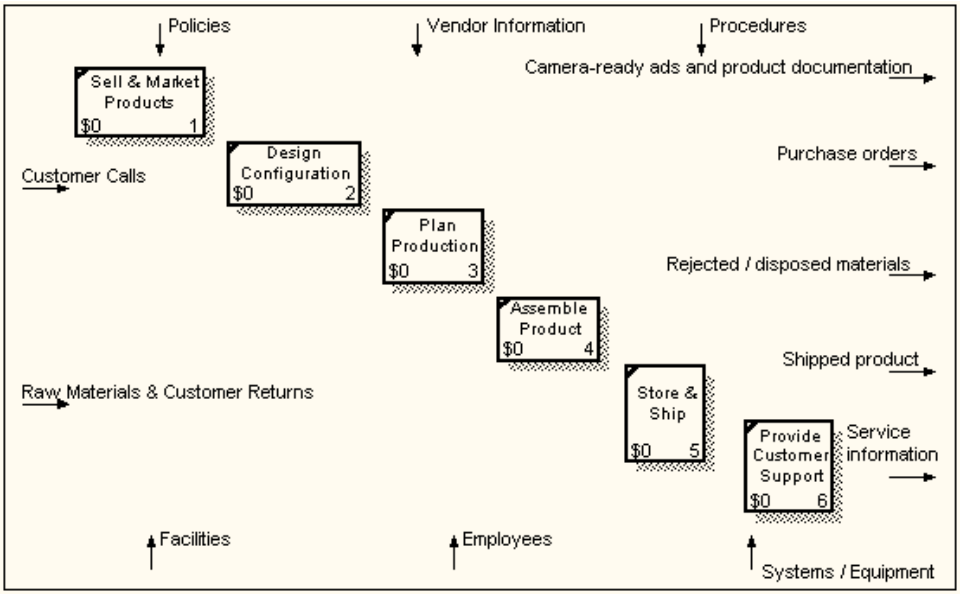
   A shortcut menu appears.

6. Select Name.

   The Activity Property dialog opens.

7. Enter text to label the activity, and click OK.

   The Activity Property dialog closes, and the label appears inside the Activity Box.



Note: In our Quill Business example, we labeled our activities to reflect industry-appropriate business processes.

Arrow Objects

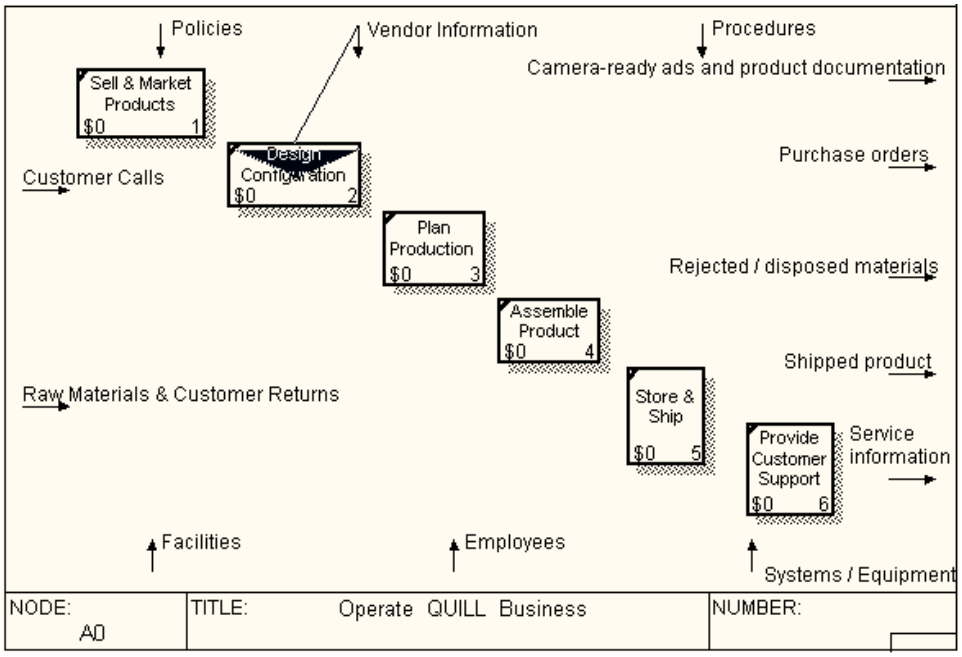
After creating the decomposition diagram, you will notice that the existing arrow objects are not connected to activities in the decomposition. The remaining topics of this chapter provide you with the steps you need to connect, move, remove, and add arrows.

Connect Existing Arrow Objects to Activity Boxes

To connect existing arrow objects to activity boxes, follow these steps:

1. Click the existing arrow you want to connect and move the cursor over the Activity Box that you want.

   A large highlight triangle appears in the box.



2. Click the mouse again.

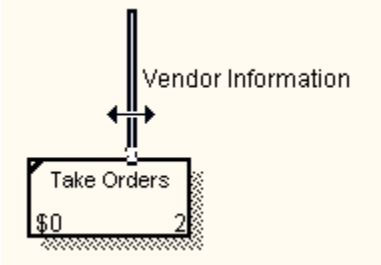
   The arrow is connected to the Activity Box.

   Note: The side of the Activity Box in which a highlight triangle appears depends on the arrow type. For example, if the arrow represents a control, then it must enter an Activity Box on the top side of the box. If the arrow represents an input, then it must enter the Activity Box on the left side of the box.

Move Arrow Objects to any Location

You can move the arrow object to any location within the diagram, constrained by its connections, by following these steps:

1. Place the cursor arrow over the arrow segment until a horizontal double-headed arrow appears.



2. Click and drag the arrow to the location that you want and release the mouse button.

   The object is moved.

Connect an Arrow Object to Multiple Activities

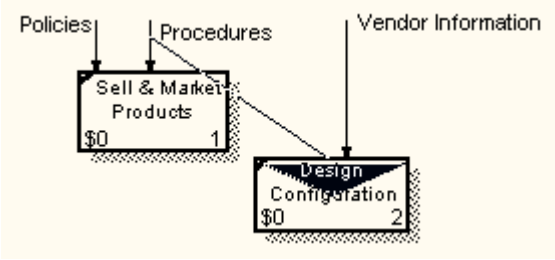
In many instances, you will want an arrow object to connect to more than one activity.

To connect an arrow object to multiple activities, follow these steps:

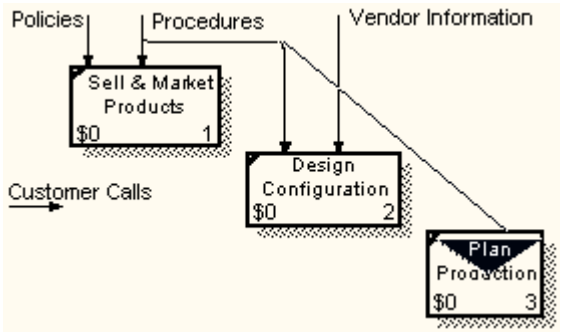
1. Connect an arrow object to an Activity Box.
2. Select the Arrow Tool on the menu bar and click the arrow you want to branch.
3. Move the cursor over the Activity Box that you want.

   The highlight triangle appears.

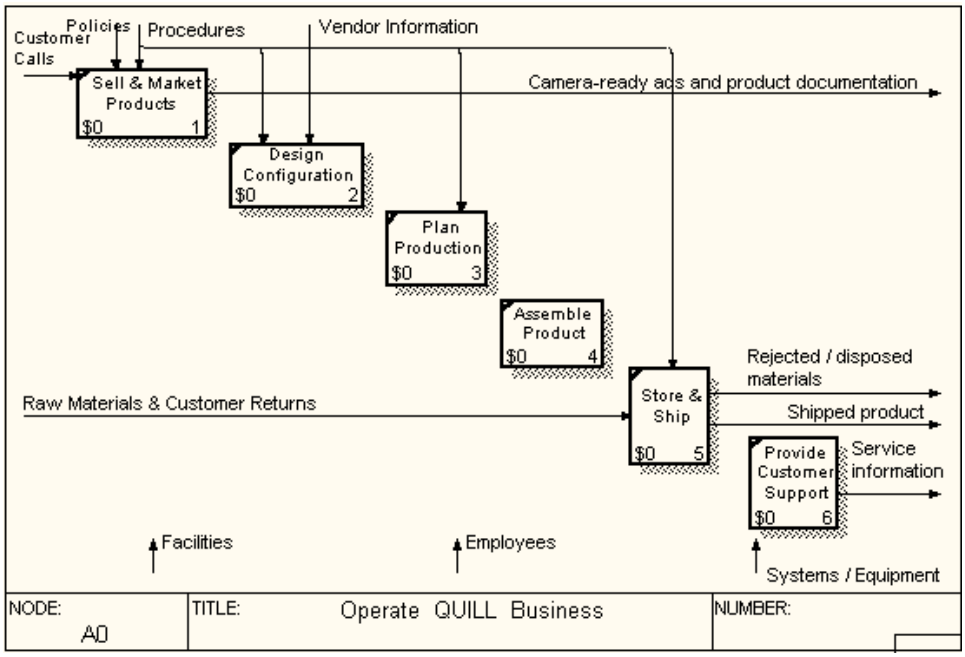
4. Click the mouse on the highlight triangle.



5. To connect the arrow to a third Activity Box, click the arrow segment where you want it to branch, and repeat Steps 3 and 4.



In our Quill Business example, continue to connect arrow objects to Activity Boxes so that the resulting diagram appears as follows:



Remove Inherited Arrows

At this point, you need to remove any inherited arrow objects that will not be represented in your decomposition diagram. In this example, you will remove the Facilities, Employees, and Systems/Equipment arrow objects.

To remove inherited arrows, follow these steps:

1. Select the Facilities, Employees, and Systems/ Equipment arrow objects by highlighting each one.
2. Select Cut/Delete from the Edit menu (or just press the Delete key).

   The selected arrows appear with a tunnel in the parent diagram, which means that they are unresolved in the decomposition diagram.

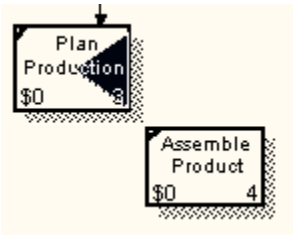
Add a New Arrow

In the following example, you will add a new arrow object (Work Ticket) that begins as an output from Plan Production. The arrow will connect to Assemble Product as a Control arrow and to Store & Ship as an Input arrow.

To add a new arrow, follow these steps:

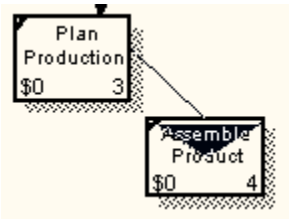
1. Click the Arrow Tool in the menu bar, and then click on the right side (Output) of the Plan Production Activity Box.

   A large highlight triangle appears.



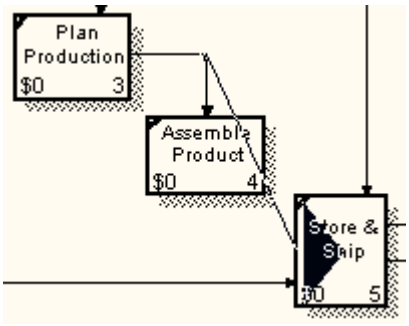
2. Move the cursor over the top portion of the Assemble Product Activity Box (remember, the arrow will enter Assemble Product as a Control arrow).
3. Click the highlight triangle.

   The connection is complete.



4. Click where you want the arrow you just created to branch.

5. Move the cursor over the left side of the Store & Ship Activity Box (remember, the arrow will enter Store & Ship as an Input arrow).
6. Click the highlight triangle to complete the connection.



The new arrow is connected to both Assemble Product and Store & Ship.

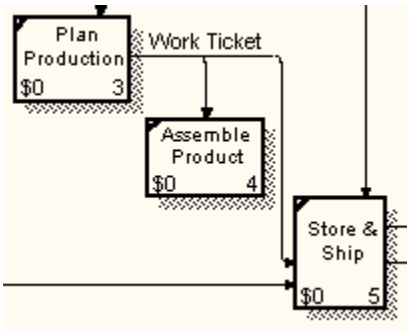
7. Right-click the arrow.

   A shortcut menu appears.

8. Select Name.

   The Arrow Properties dialog opens.

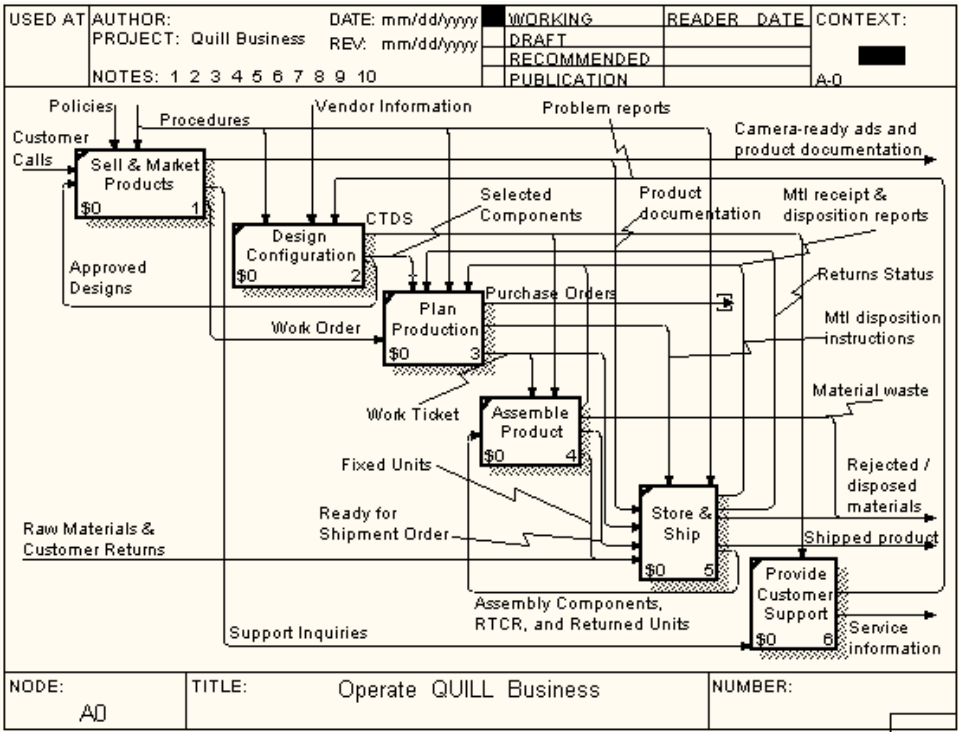
9. Name the arrow Work Ticket, and click OK.



The Arrow Properties dialog closes, and Work Ticket appears next to the arrow.

The Completed Decomposition Example

In keeping with our Quill Business example, we continued to populate our decomposition diagram with arrow objects representing industry-appropriate business processes. Our completed decomposition appears as shown in the following diagram:



Note: To add a squiggle to your diagram, right-click an arrow label and select Squiggle from the shortcut menu. A squiggle appears, connecting the label with its associated arrow object.

You can continue to decompose activities to the level of detail necessary for fulfilling the purpose of your model.

Using Node Tree Diagrams and For Exposition Only Diagrams

The IDEF0 modeling technique also includes Node Tree diagrams and For Exposition Only (FEO) diagrams. After you have created a context diagram and have decomposed your activities to the level of detail you need, you can use Node Tree and FEO diagrams to add another dimension to your model.

Node Tree Diagrams

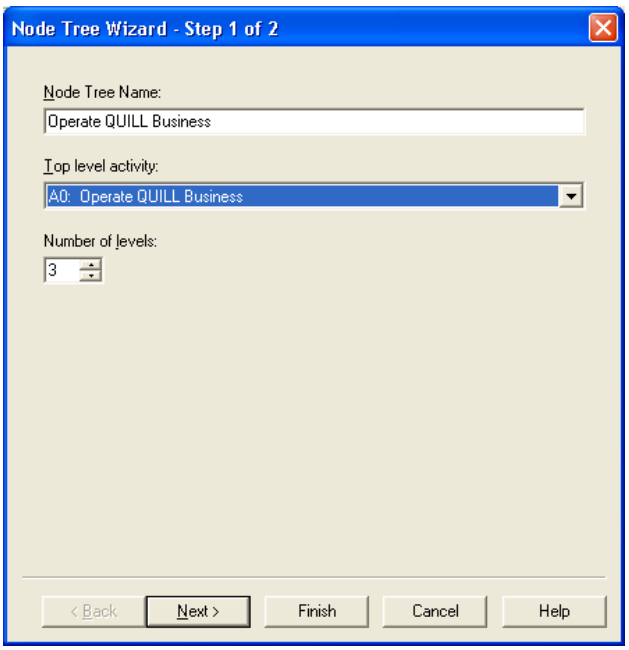
Node Tree diagrams are used to show all parent-child activity relationships in a single easy-to-view diagram. You can also create a Node Tree diagram of a section of a model by using a child decomposition as the top node in the diagram. Node Tree diagrams use a traditional tree hierarchy where the top node (box) corresponds to the context diagram activity (process), and the lower level nodes correspond to child decompositions (component activities). Each node contains the name of the process it represents and also a label that consists of a letter followed by one or more numbers.

Create a Node Tree Diagram

In the example that follows, you will create a Node Tree diagram called Operate Quill Business. Once you create a Node Tree diagram, it becomes a sibling of the model diagram upon which it is based.

1. Select Add Node Tree from the Diagram menu.

   The Node Tree Wizard - Step 1 of 2 dialog opens.



2. Type a new Node Tree diagram name, or keep the default Node Tree name.

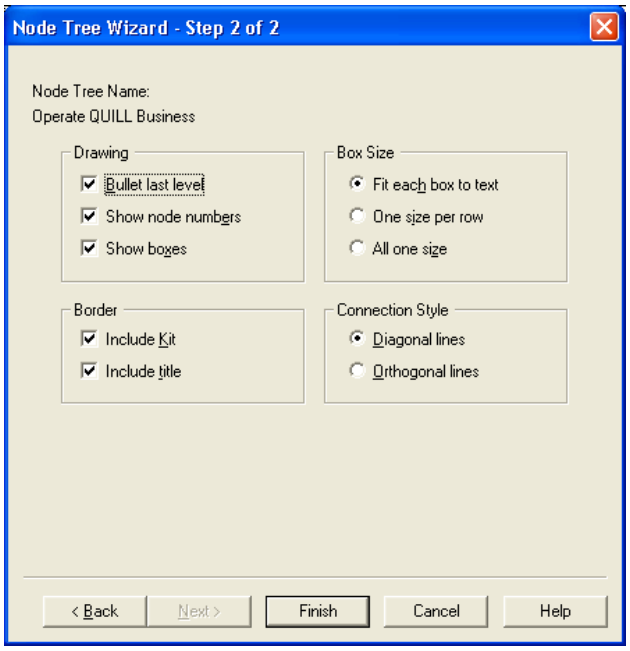
   Note: The default Node Tree diagram name is derived from the name of the top-level node in the model. The Node Tree diagram name displays in the TITLE box in the diagram title area.

3. Select the activity to be the top-level activity in the Node Tree diagram. You can choose any activity to be the top-level activity in a Node Tree diagram from the dropdown menu. This helps you focus the Node Tree diagram on a certain section of the model. In our example, we selected Operate Quill Business to be the top-level activity.

4. Select the number of levels in the Node Tree diagram. Each level in the Node Tree diagram represents a level of decomposition.

5. Click Next.

   The Node Tree Wizard - Step 2 of 2 dialog opens.

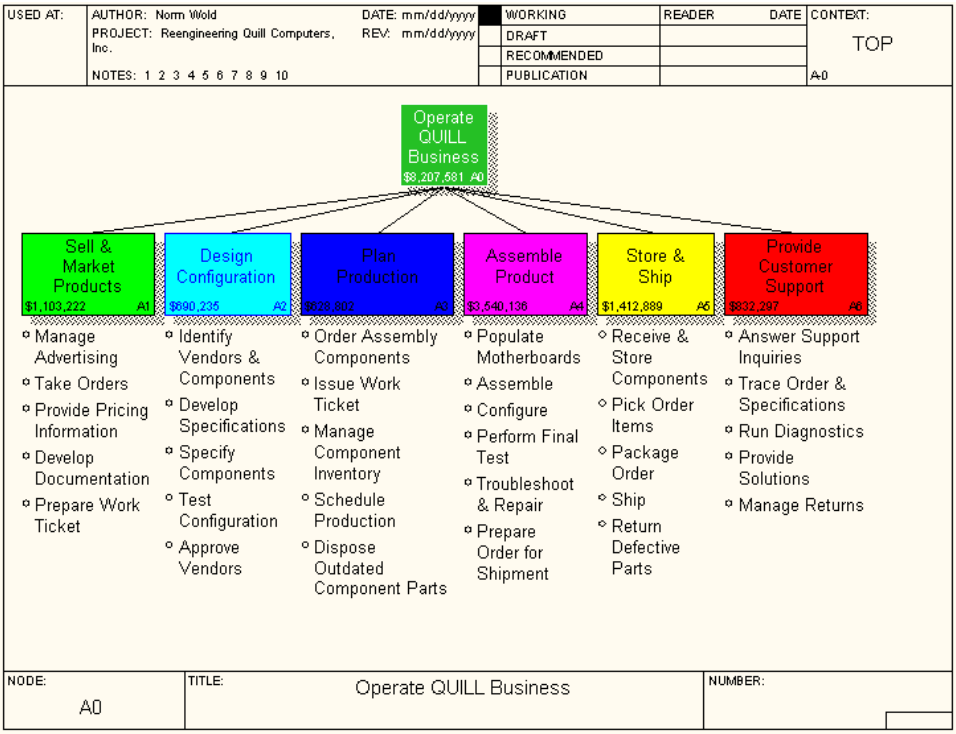


6. Define the various Node Tree diagram style options that you require.

7. Click Finish when you are done and the Node Tree diagram displays in the diagram area.

Node Tree Diagram Example

The following shows an example of a completed Node Tree diagram:



The nodes in a Node Tree diagram retain the properties of the corresponding activities in the model. For example, you can open the Activity Properties dialog for an activity by double-clicking the corresponding node tree box. If you want to set diagram properties such as name, font, and color, you can open the Node Tree Diagram Properties dialog by double-clicking the empty Node Tree diagram area.

After you add a Node Tree diagram to a model, you can open it later by clicking the diagram name in the Diagrams tab of the Model Explorer.

For Exposition Only Diagrams

A For Exposition Only (FEO) diagram is a graphic representation of specific facts about an IDEF0 diagram. They can be used to test a theory, illustrate different scenarios, show different viewpoints, or highlight other functional details that require special attention, without affecting the original model diagram. For example, you may want to show only two activities or omit certain mechanisms to provide a picture of what could be. Unlike IDEF0 diagrams, FEO diagrams do not need to comply with IDEF0 modeling rules. This is why they are so useful for testing how different scenarios or theories might impact a given process. You can add any number of FEO diagrams to the original model diagram, and you are able to add an FEO diagram at any time.

A FEO diagram looks the same as the original diagram except for the name that you assign to the FEO diagram, and the FEO node reference name. For example, if you add an FEO diagram to a model diagram with the node reference name of A1.3, the corresponding FEO diagram node reference name becomes A1.3F. You can view the FEO diagram name and the FEO node reference name in the border title when the diagram is open.

Create a For Exposition Only Diagram

In the example that follows, you will create a For Exposition Only diagram based upon the decomposition diagram Store & Ship. Store & Ship is a decomposition diagram of the Operate Quill Business context diagram. Once you create a For Exposition Only diagram, it becomes a sibling of the model diagram upon which it is based.

1. Select Add FEO diagram from the Diagram menu.

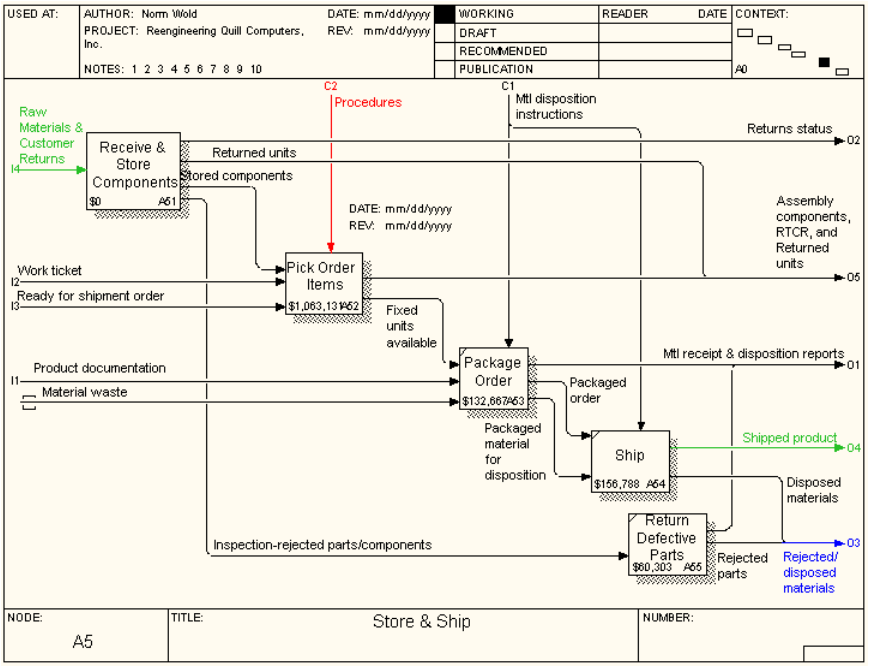
   The Add New FEO Diagram dialog opens.

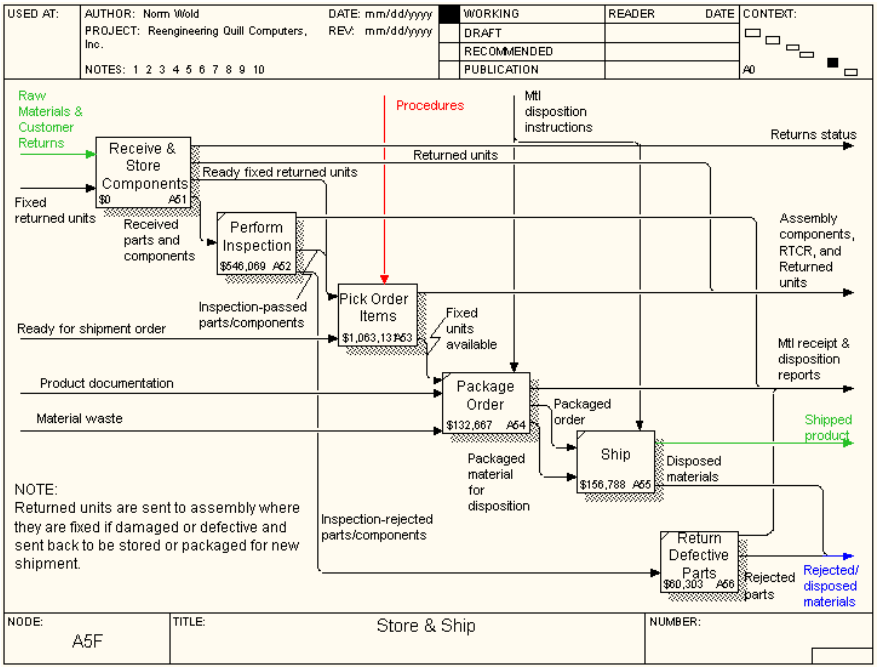
2. Type the name of the FEO diagram.
3. Select whether you want the FEO of the context diagram or the decomposition diagram. We will create a FEO of the decomposition diagram Store & Ship.
4. Click OK and the FEO diagram displays in the diagram area.

After you add a FEO diagram to a model, you can open it later by clicking the diagram name in the Diagrams tab of the Model Explorer.

FEO Diagram Example

In the following two graphics, you first see the original Store & Ship decomposition diagram, and then there is the FEO diagram upon which it was based:





Chapter

5

Building Process Flow Models

Process Flow Modeling

Process Flow modeling, also referred to as IDEF3 modeling, is a modeling methodology that graphically describes and documents processes by capturing information on process flow, the relationships between processes, and important objects that are part of the process.

You can use Process Flow diagrams to assist business process reengineering efforts, develop a measure for determining the completeness of deliverables, and collect information on policies and procedures in your company. You can model real world scenarios. For example, you can map out real-life emergency procedures or contingency plans based on your business needs and events. Each scenario provides a description of a process, and can be used to better communicate and document how your business functions.

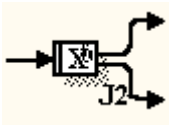
IDEF3 Modeling Activities (UOWs)

The term *UOW* is an acronym for Unit of Work, and refers to a process, action, decision, or other procedure performed in a system or business within an IDEF3 (Process Flow) model. UOWs in IDEF3 modeling are equivalent to Activities in IDEF0 modeling.

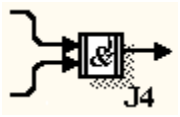
Junctions in IDEF3 Modeling

Junctions are used in process flow diagrams to show branching or joining in the process logic, to show alternative paths in the process flow, and to show multiple events that can or must be completed before the next UOW process can begin. There are two types of junctions:

- **Fan-out Junction**—Branches one arrow into multiple arrows to show activities occurring in parallel. The following is an example of a Fan-out junction:



- **Fan-in Junction**—Consolidates multiple arrows into a single arrow to show the completion of the activities. The following is an example of a Fan-in junction:



Note: A junction cannot be both fan-in and fan-out at the same time.

The junctions available in process flow modeling and the meaning of the junction when used in a fan-in or fan-out setting are explained in the following table:

Junction	Name	Meaning in Fan-in	Meaning in Fan-out
	Asynchronous AND	All preceding processes must be complete.	All following processes must start.
	Synchronous AND	All preceding processes complete simultaneously.	All following processes start simultaneously.
	Asynchronous OR	One or more preceding processes must be completed.	One or more following processes must start.
	Synchronous OR	One or more preceding processes complete simultaneously.	One or more following processes start simultaneously.
	XOR (Exclusive OR)	Exactly one preceding process completes.	Exactly one following process starts.

Referents in IDEF3 Modeling

A *referent* is a term used to describe an object in an IDEF3 diagram where additional information is stored outside the process flow. For example, if a credit check were processed and a determination was made to set the credit rating as low, the information from that credit check would reside in a Bad Credit List. In this case, the Bad Credit List is considered a referent.

Referents are used in IDEF3 modeling to support junctions and other process flow objects, or to represent repeating UOWs.

Create an IDEF3 Diagram

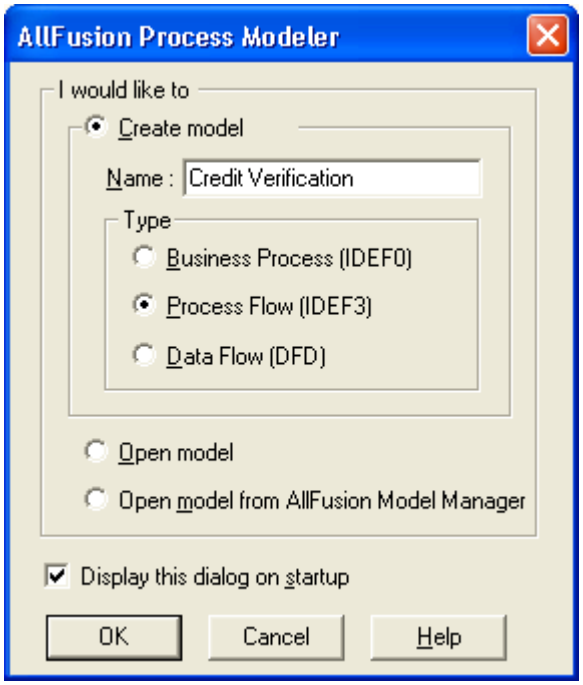
In the following example, you will create an IDEF3 diagram called Credit Verification.

Note: A similar IDEF3 decomposition diagram called Credit Verification is located in the sample model Quill Business under the file name Quill1.bp1 on your AllFusion PM CD.

To create an IDEF3 diagram, follow these steps:

1. Select New from the File menu, or click the New button on the toolbar.

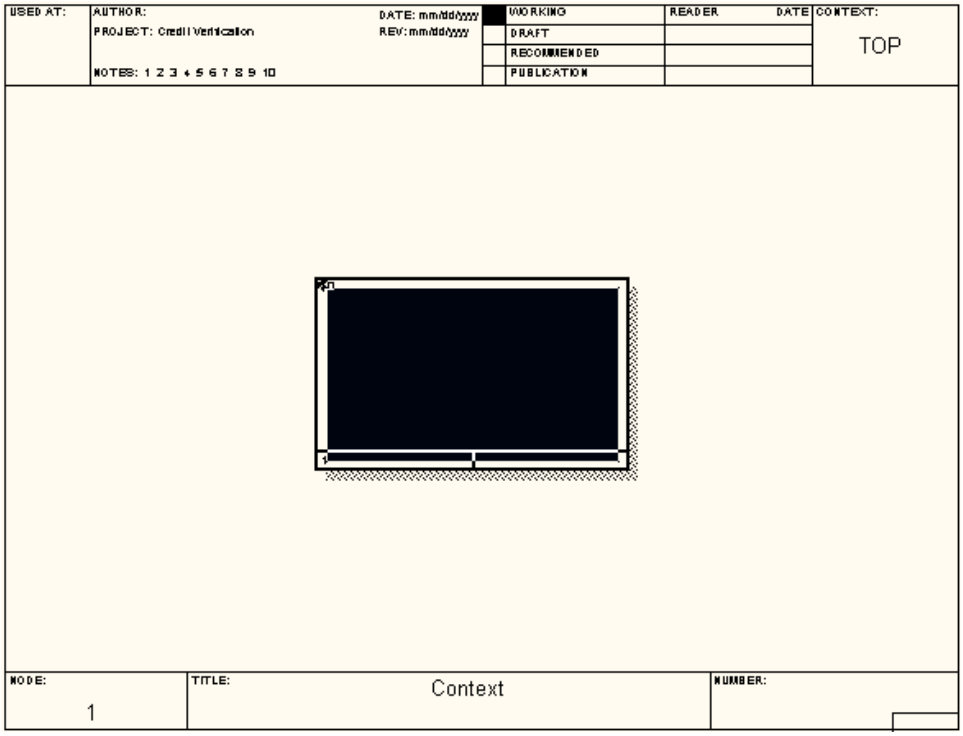
   The following dialog opens.



2. Name the model and select Process Flow (IDEF3) as the model type. In this case, name the model Credit Verification.
3. Click OK.

   The Properties for New Models dialog box opens.
4. Enter your name as Author, and then click OK.

   The model opens and the area that will become your first Activity (Unit of Work) appears:

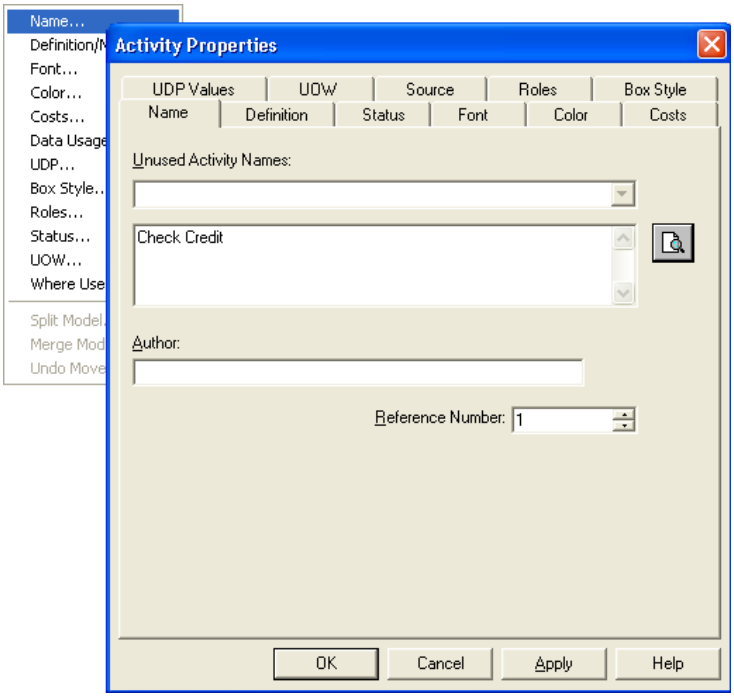


5. Right-click the Activity Box.

   The shortcut menu appears.

6. Click Name.

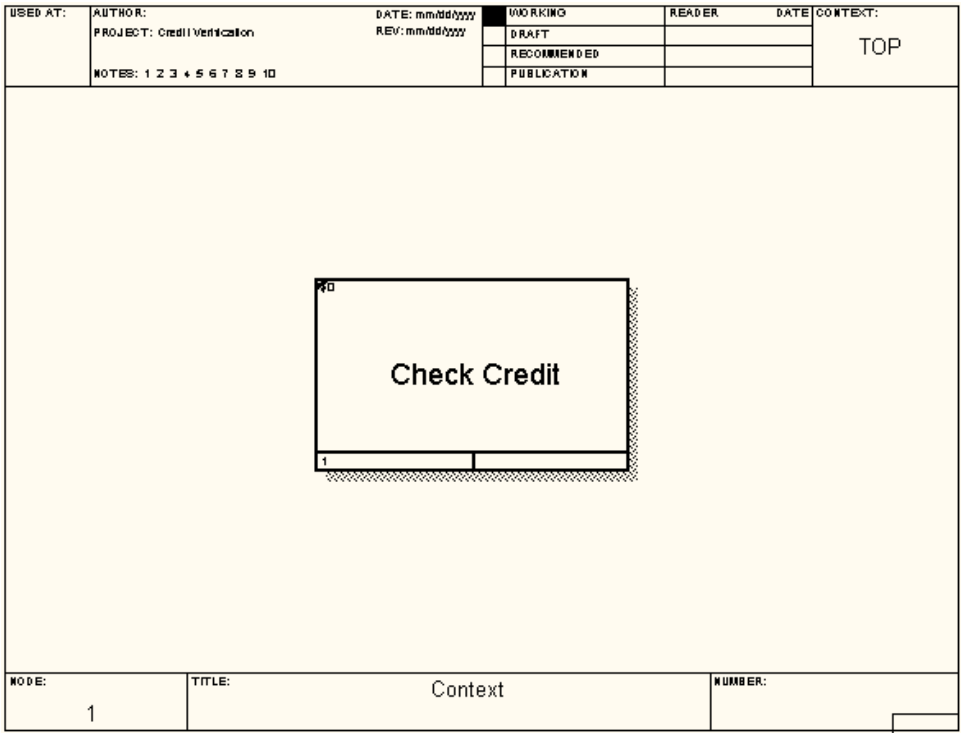
   The Activity Properties dialog opens.



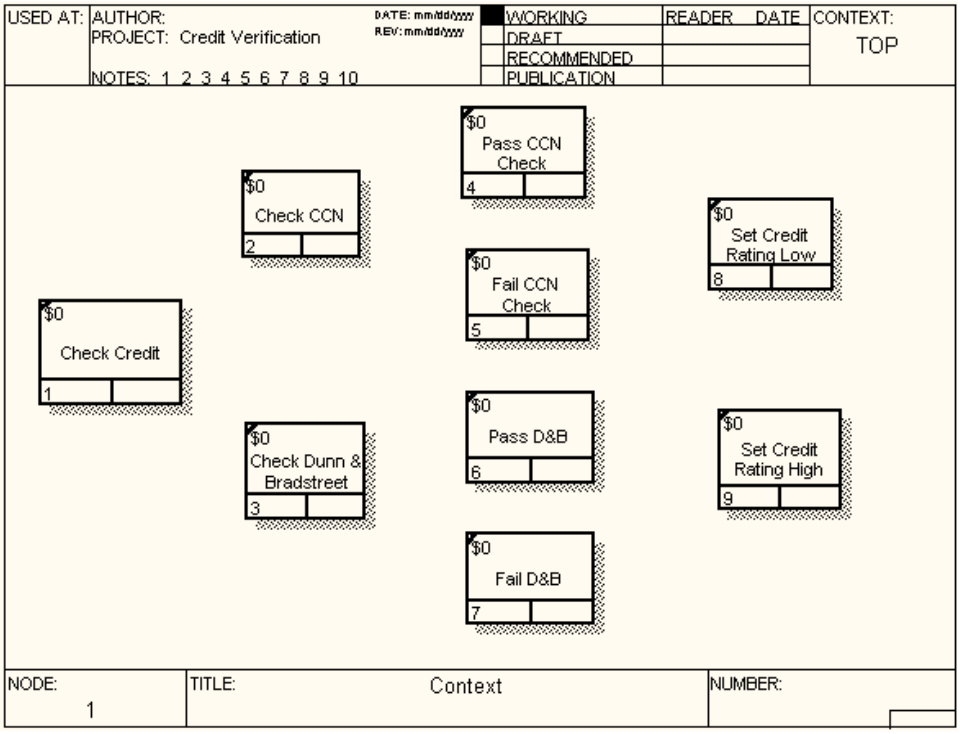
7. Name the activity Check Credit, and click OK.

   The Activity Properties dialog closes, and the label appears in the Activity Box.

Note: You can move the Activity Box within the diagram by clicking and dragging the box to the location that you want. To resize, click on a corner of the Activity Box and drag the perimeter of the box until you achieve the size that you want.



8. Add the following eight additional Activity Boxes and name them as follows:



Add Junctions to the Diagram

Now you need to determine which types of junctions, if any, you will need to connect your activities. In this example, you want an asynchronous AND junction that will fan-out from Check Credit to Check CCN (Credit Card Number) and Check Dunn & Bradstreet (from Check Credit, all the following processes must start). Here, you want the Credit Verification process to begin with checking both CCN and Dunn & Bradstreet. We represent this on our diagram with an asynchronous AND junction.

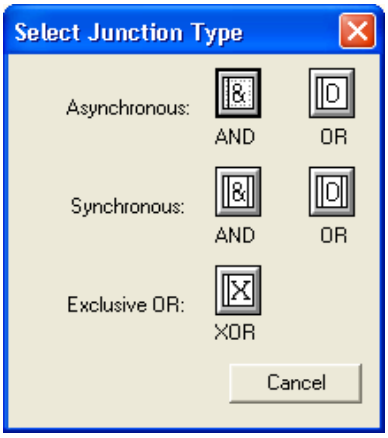
To place a junction in your diagram, follow these steps:

1. Click the Junction Tool button on the AllFusion PM toolbar.

   The Junction cursor appears.

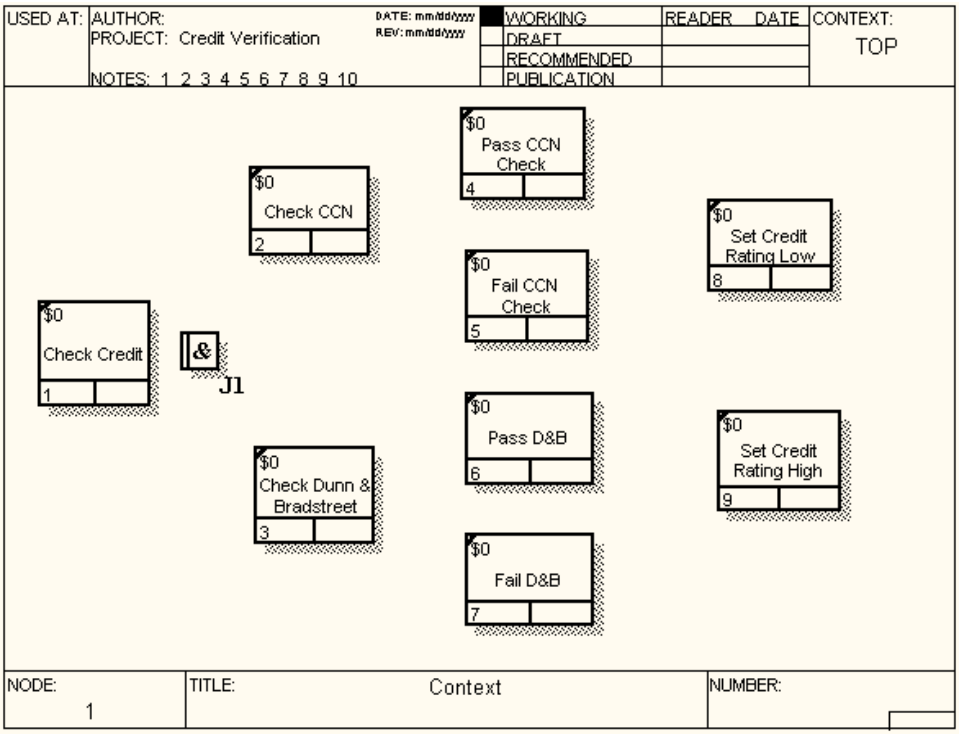
2. Click where you want the junction to appear on the diagram.

   The Select Junction Type dialog opens.



3. Click the Asynchronous AND button.

   The junction appears in the diagram.



Connect Junctions to Activity Boxes

To connect the junction to Activity Boxes with arrows, follow these steps:

1. Select the Arrow Tool on the toolbar, and click the right side of the Activity (in this case, the right side of the Check Credit Activity Box).

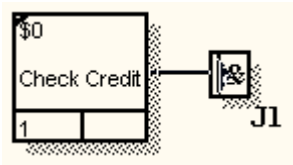
   A large highlight triangle appears.

2. Click the highlight triangle.
3. Move the cursor over the destination box (in this case, the left side of the asynchronous AND junction you just created).

   A large highlight triangle appears.

4. Click the highlight triangle.

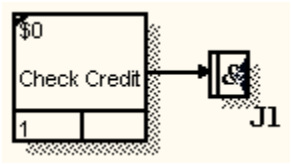
   The arrow is created.



5. Click the right side of the junction box.

   A large highlight triangle appears.

6. Click the highlight triangle.

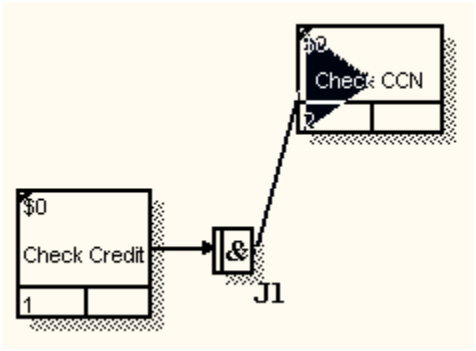


   The junction is connected to the activities that follow it.

7. Move the cursor over the left side of the destination activity (in this case, the Check CCN Activity Box).

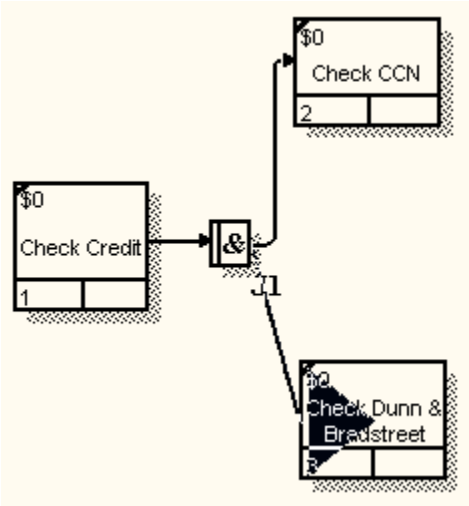
   A large highlight triangle appears.

8. Click the large highlight triangle.

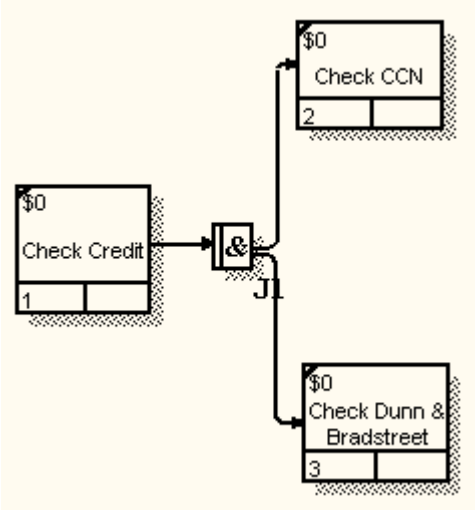


   The arrow is created.

9. Repeat Steps 7 and 8 to connect the junction to the Check Dunn & Bradstreet Activity Box.



Now that you have completed the above steps, the asynchronous AND junction will fan-out to activities 2 and 3—Check CCN and Check Dunn & Bradstreet.



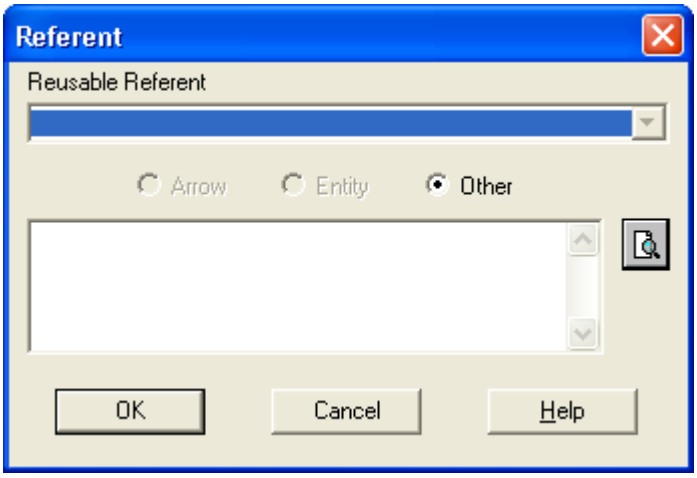
Add Referents to the Diagram

Now you need to add referents to our diagram representing the external sources of information you check in order to complete specific tasks in the process flow. In this example, you will add a referent representing credit card number information that you must consult in order to complete the Check CCN process.

To add a referent to the diagram, follow these steps:

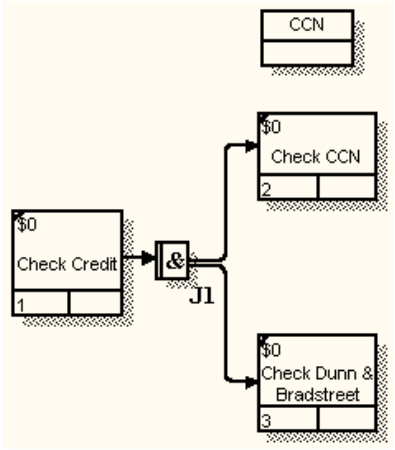
1. Click the Referent Tool button on the AllFusion PM toolbar.
2. Click inside the diagram where you want the referent to appear.

   The Referent dialog opens.



3. Select Other and type CCN in the bottom text box.
4. Click OK.

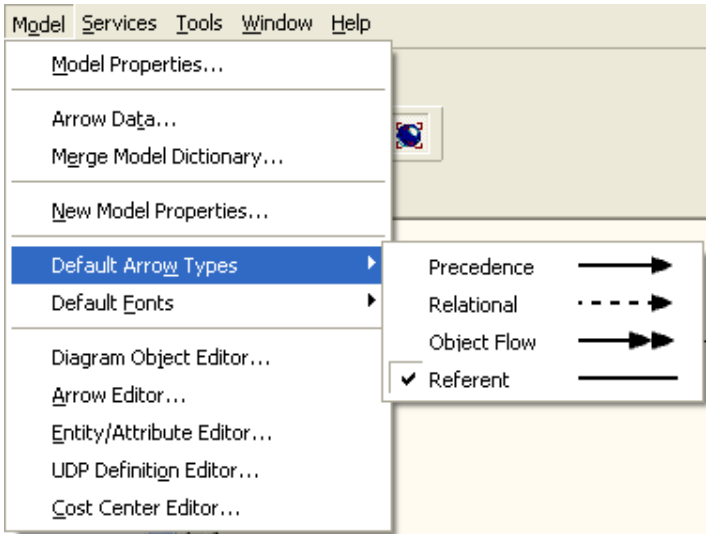
   The referent appears in the diagram.



Add a Referent Line

When you connect a referent to an activity, you should use a Referent Line. To change the default arrow type to Referent, follow these steps:

1. Select Default Arrow Types from the Model menu.



2. Click Referent.

   The Arrow Tool changes to reflect the new arrow style.

   Note: Another way you can change the arrow type is to right-click an arrow in your diagram and then select Style from the shortcut menu. An Arrow Properties dialog box appears in which you can change the arrow style.

3. Click the Arrow Tool on the AllFusion PM toolbar.
4. Click inside the diagram where you want to add the source of a Referent Line (in this case, the CCN referent).

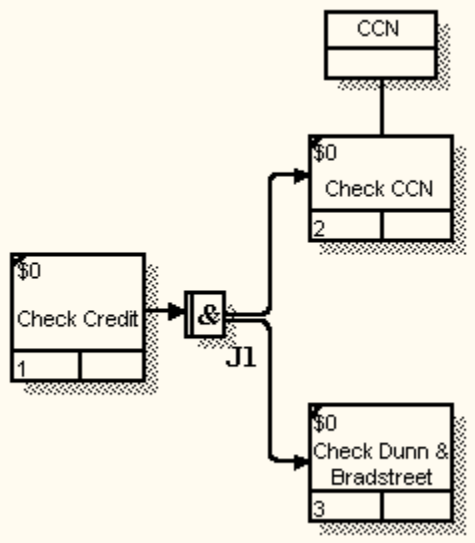
   A large highlight triangle appears.

5. Click the highlight triangle.
6. Move the cursor over the destination box (in this case, the Check CNN Activity box).

   A large highlight triangle appears.

7. Click the highlight triangle.

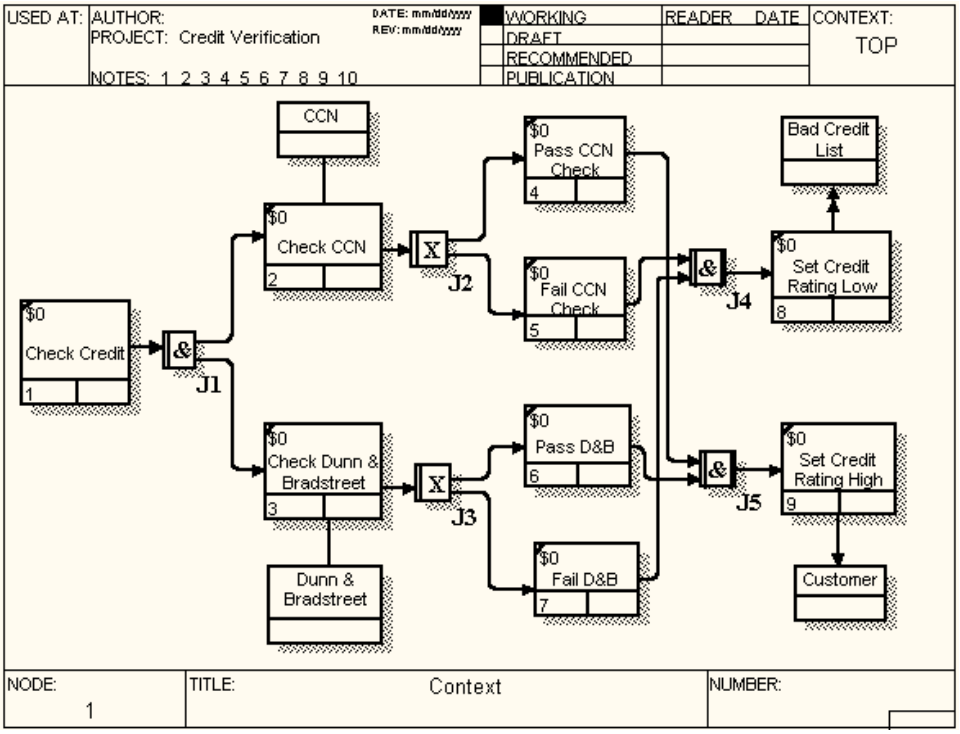
   The CNN referent is connected to the Check CNN Activity Box.



   In this example, the source of the line is the CCN referent, and the destination is the Check CCN Activity Box.

The Completed IDEF3 Model Example

After we completed populating our diagram with additional junctions, referents, and arrows, it looks like the following:



Chapter

6

Building Data Flow Models

The Data Flow Diagram

You can use AllFusion PM to create a blueprint of your system development tasks. This eliminates the costly time previously dedicated to repetitive planning and design. Now you can create and use Data Flow Diagrams (DFD) to document the movement and processing of information within your business or organization. Modelers also use Data Flow Diagrams to complement existing Business Process models (IDEF0).

The Data Flow Diagram describes data processing functions (for example, Input Customer Data); data used or created by the data processing system (for example, Invoice); objects, persons, or departments that interact with sales (for example, Vendor), and data processing tables (for example, Inventory table). Data processing functions are represented by Data Flow Diagram objects that include activities, arrows, data stores, and external references. You can also associate entities that you create in AllFusion PM, or that you import from AllFusion ERwin Data Modeler, with external references and data stores.

Objects in Data Flow Diagrams

The following table describes the four objects present in Data Flow Diagrams:

Data Flow Diagram Objects	Description
Activity	An Activity describes an action that processes or transforms data or resources. In DFD modeling, an Activity depicts an action that processes or transforms data.
Arrow	Arrows in Data Flow Diagrams represent the flow of data between activities, data stores, and external references.

Data Flow Diagram Objects	Description
Data Store	Data Stores are used in Data Flow diagramming to show the flow of data to and from a database table, AllFusion ERwin Data Modeler entity, or both.
External Reference	In Data Flow Diagrams, external references represent a location, entity, person, or department that is a source or destination of data but is outside the scope of the diagram.

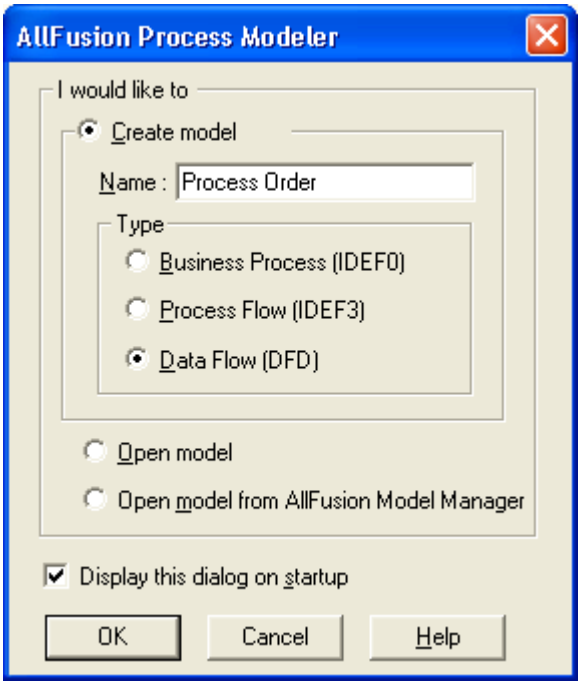
Create a Data Flow Diagram

In the following example, we will create a Data Flow decomposition diagram based on the context activity, Accept/Release Order.

To create a Data Flow Diagram, follow these steps:

1. Select New from the File menu, or click the New button on the toolbar.

   The following dialog box appears.



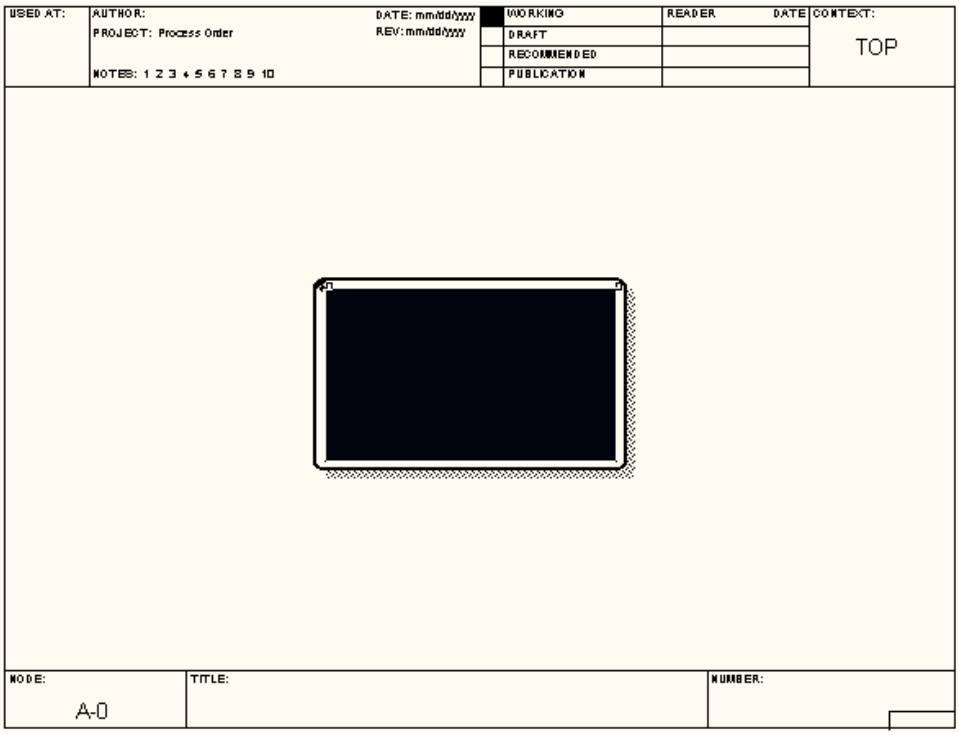
2. Name the model and select Data Flow (DFD) as the model type. In this case, name the model Process Order.

3. Click OK.

   The Properties for New Models dialog opens.

4. Enter your name as Author, and click OK.

   The model opens:

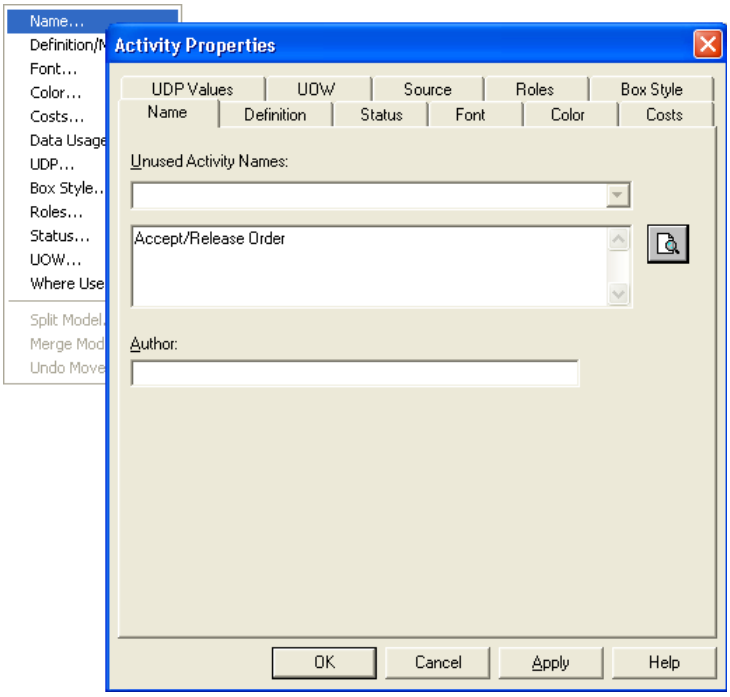


5. Right-click the Activity Box.

   A shortcut menu appears.

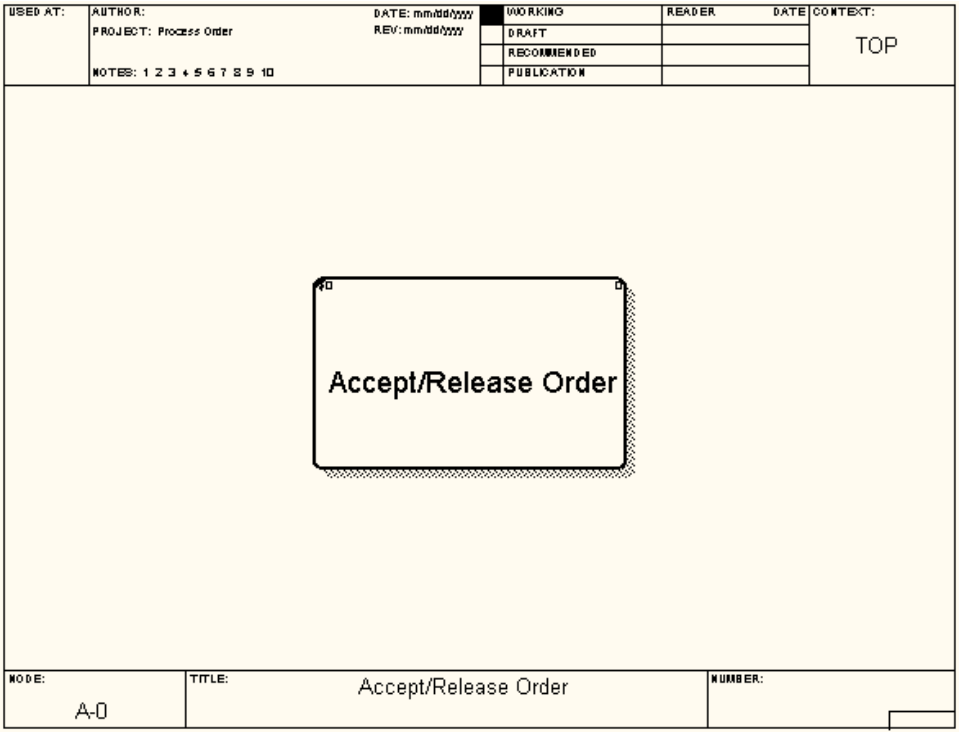
6. Select Name.

   The Activity Properties dialog opens.



7. Name the activity Accept/Release Order, and click OK.

   The Activity Properties dialog closes, and the text appears in the Activity Box.



Note: You can move the Activity Box within the diagram by clicking and dragging the box to the location that you want. To resize, click on a corner of the Activity Box and drag the perimeter of the box until you achieve the size that you need.

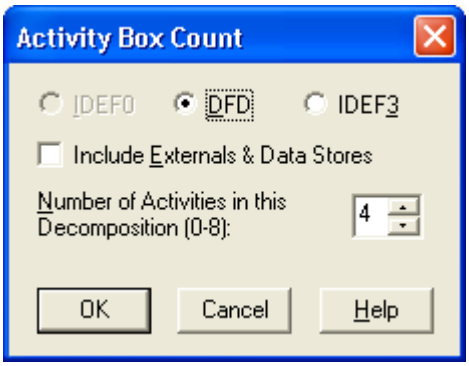
Create a Data Flow Decomposition Diagram

After creating your context activity, you can create a Data Flow decomposition diagram based on the context activity. In this case, we will create a decomposition diagram based on the Accept/Release Order context activity.

To create a Data Flow decomposition diagram, follow these steps:

1. Highlight the Accept/Release Order Activity Box.
2. Click the Go To Child Diagram tool button on the AllFusion PM toolbar.

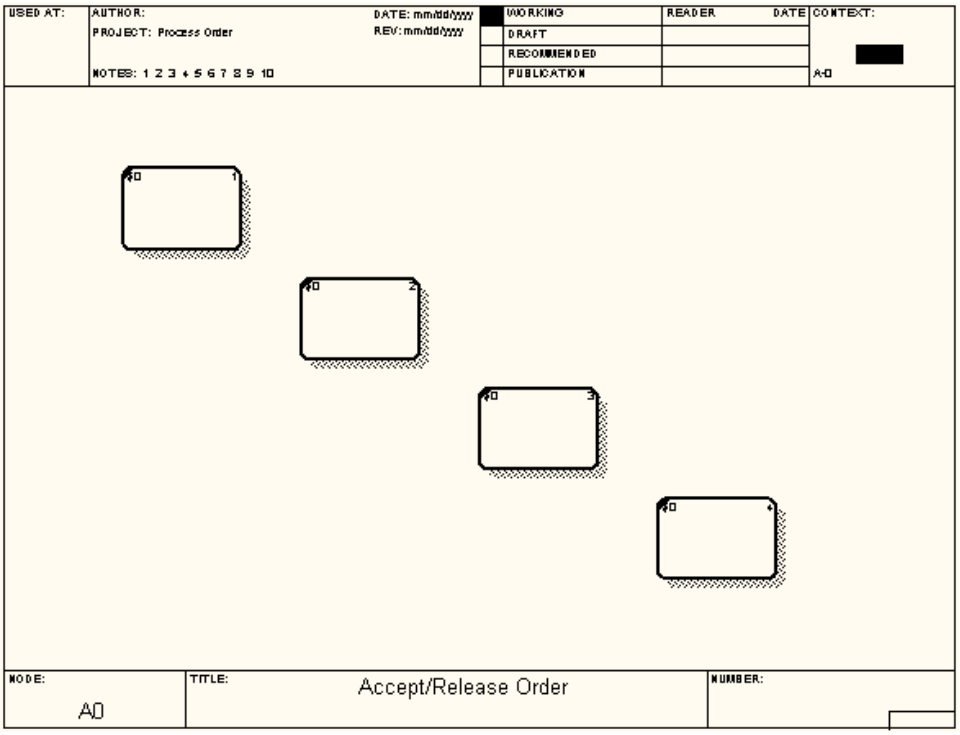
   The Activity Box Count dialog opens.



3. Select DFD as the model type, and enter 4 in the Number of Activities in this Decomposition box.

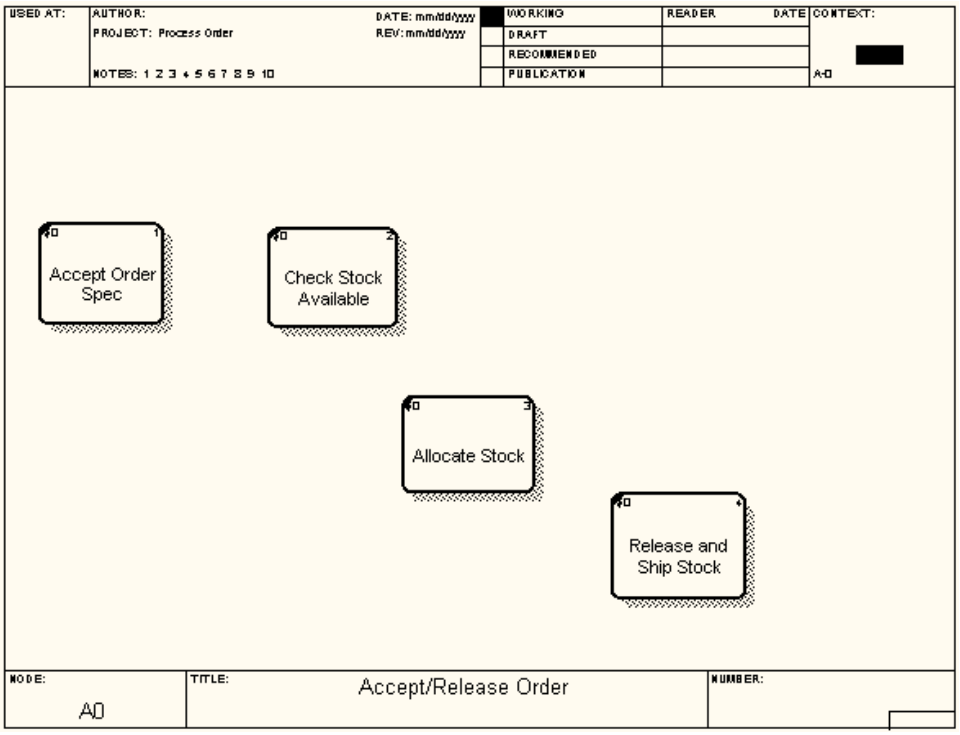
4. Click OK.

   The decomposition diagram opens.



5. Right-click each Activity Box, and select Name from the shortcut menu to label each activity in your decomposition diagram.

   In this example, we named and repositioned four activities as follows:



Add Data Stores

You can now add Data Stores to your diagram to represent the various databases needed for each activity.

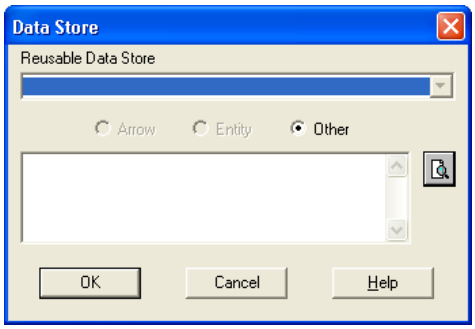
To add a data store, follow these steps:

1. Click the Data Store tool button on the AllFusion PM toolbar.

   The Data Store cursor appears.

2. Click inside the diagram where you want the Data Store to appear.

   The Data Store dialog opens:

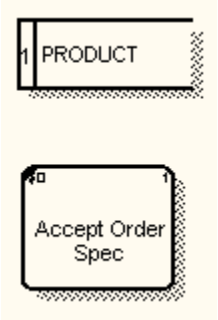


3. Click Other and type PRODUCT in the bottom text box to assign a name to the Data Store.

   Note: In this example, we do not yet have any existing data store names in the Reusable Data Store list.

4. Click OK.

   The data store appears in the following diagram:

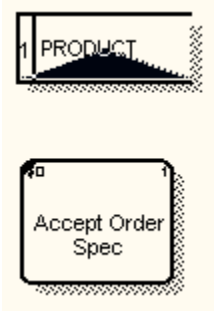


Connect Data Stores

To connect the data store to the Accept Order Spec Activity Box, follow these steps:

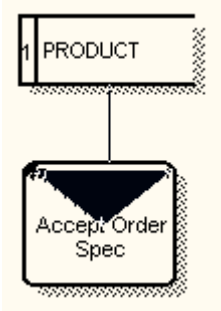
1. Click the Arrow tool button on the AllFusion PM toolbar.
2. Click the source border or Activity (in this case, the bottom of the PRODUCT Data Store).

   A large highlight triangle appears.



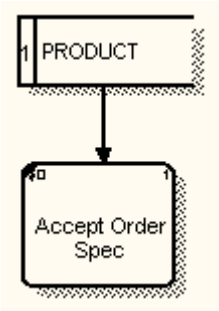
3. Click the highlight triangle.
4. Move the cursor over the destination border (in this case, the top of the Accept Order Spec Activity Box)

   A large highlight triangle appears.



5. Click the highlight triangle.

   An arrow appears representing the flow of data between the PRODUCT Database and the Accept Order Spec Activity.



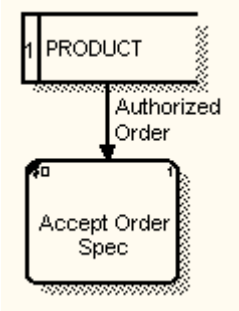
   Note: Unlike IDEF0 modeling, in Data Flow Diagramming, you can attach arrows to any side of an Activity Box.

6. Right-click the stem of the arrow and select Name from the shortcut menu.

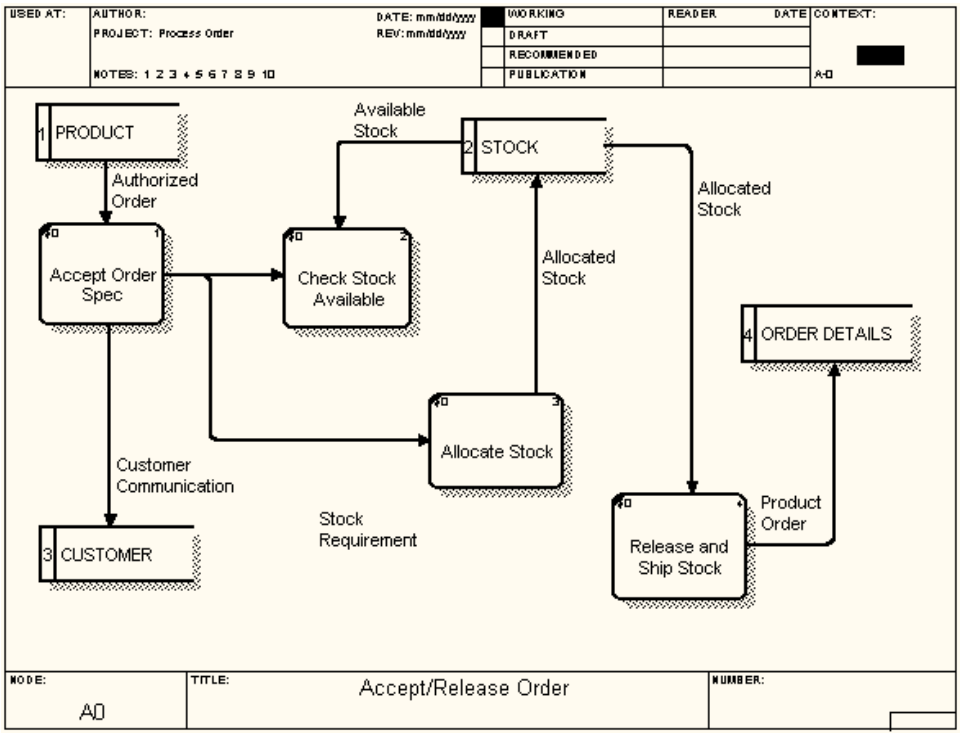
   The Arrow Properties dialog opens.

7. Name the arrow Authorized Order, and click OK.

   The Arrow Properties dialog closes, and the arrow displays with the name Authorized Order.



In this example, we added and connected three additional Data Stores, as well as additional arrows, as shown in the following diagram:



Add External Reference

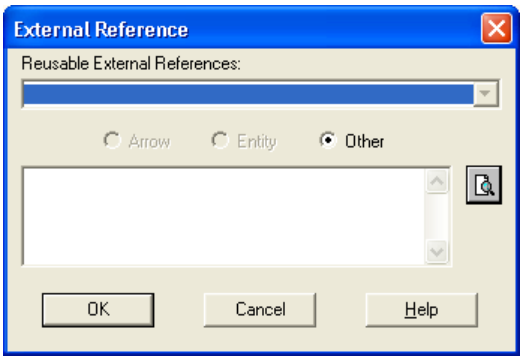
To add an External Reference to your Data Flow Diagram, follow these steps:

1. Click the External Reference tool button on the AllFusion PM toolbar.

   The External Reference cursor appears.

2. Click the diagram where you want the External Reference to appear.

   The External Reference dialog opens:

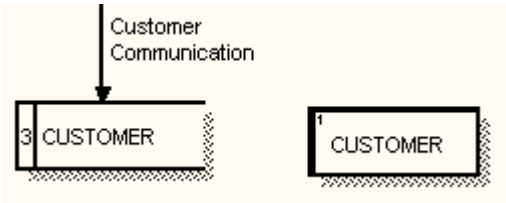


3. Select Other and type CUSTOMER in the bottom text box.

   Note: In this example, we do not yet have any existing data store names in the Reusable External Store list.

4. Click OK.

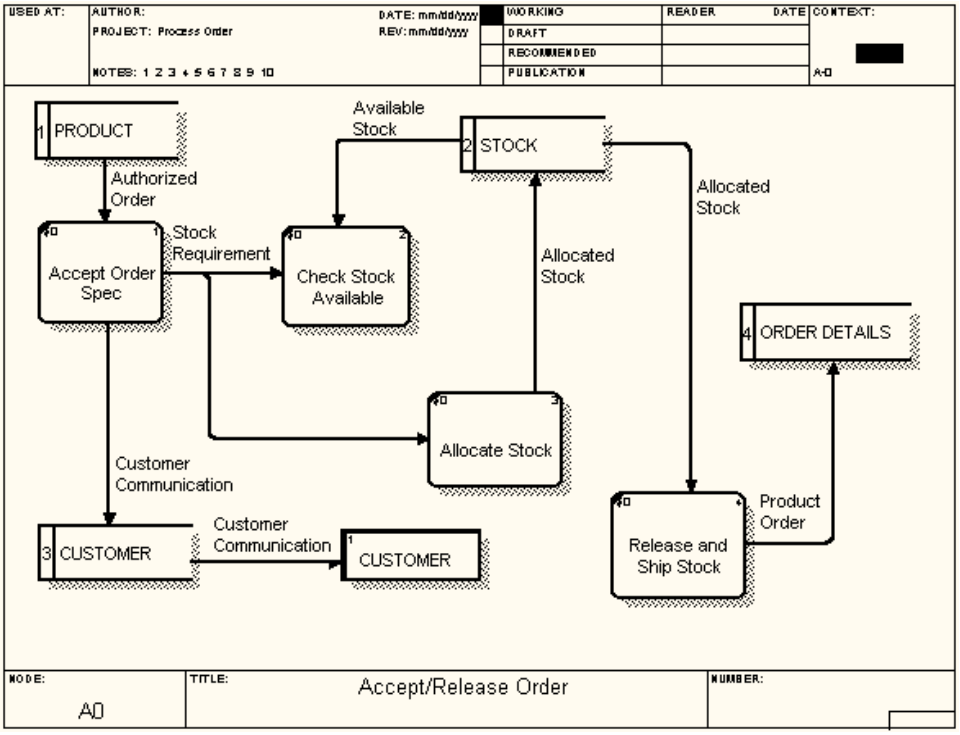
   The External Reference dialog closes, and the external reference appears, as shown in the following example:



5. Follow the steps in the topic Connect Data Stores to connect the CUSTOMER Data Store to the CUSTOMER external reference, and label the arrow Customer Communication.

The Completed Data Flow Diagram Example

The following is our completed Accept/Release Order Data Flow Diagram:



Chapter

7

Adding Value to Your Model

Models to Suit Your Organization

AllFusion PM provides a framework of features that you can use to add value to your model. You can specify characteristics such as cost, time, performance, or quality metrics. This chapter explores the benefits of using Activity Based Costing and User-Defined Properties.

Activity Based Costing

In today's fast-moving economy, it is critical to maintain a healthy profit structure. To more fully understand underlying production costs, organizations are turning to *Activity Based Costing* (ABC). This is a technique that captures and analyzes activity costs. ABC captures the costs of resources (such as materials or labor), assigns these expenses to various activities, and then allocates activities to various system outputs called cost objects. Compared to traditional cost accounting, which systematically under-costs low-volume products and over-costs high-volume ones, ABC provides a more exact calculation of the cost to produce a specific product based on the cost to perform all of the activities involved in creating it.

Because it is activity-based, the design of an ABC system mirrors your company's operations.

Costs Allocation

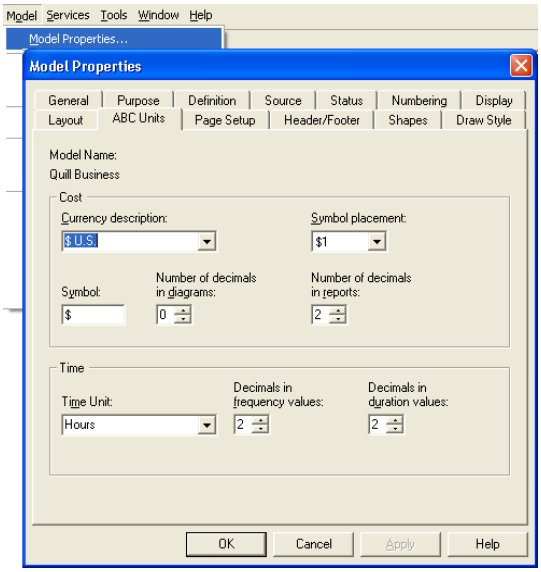
ABC is a technique for accruing costs into cost centers by allocating those costs throughout the model where they actually occur. Make sure that your model is complete and stable before you begin to allocate costs.

You need to perform the following tasks to complete the costing activity:

- Set the Units of Measurement
- Define the Cost Centers
- Enter the Cost Information

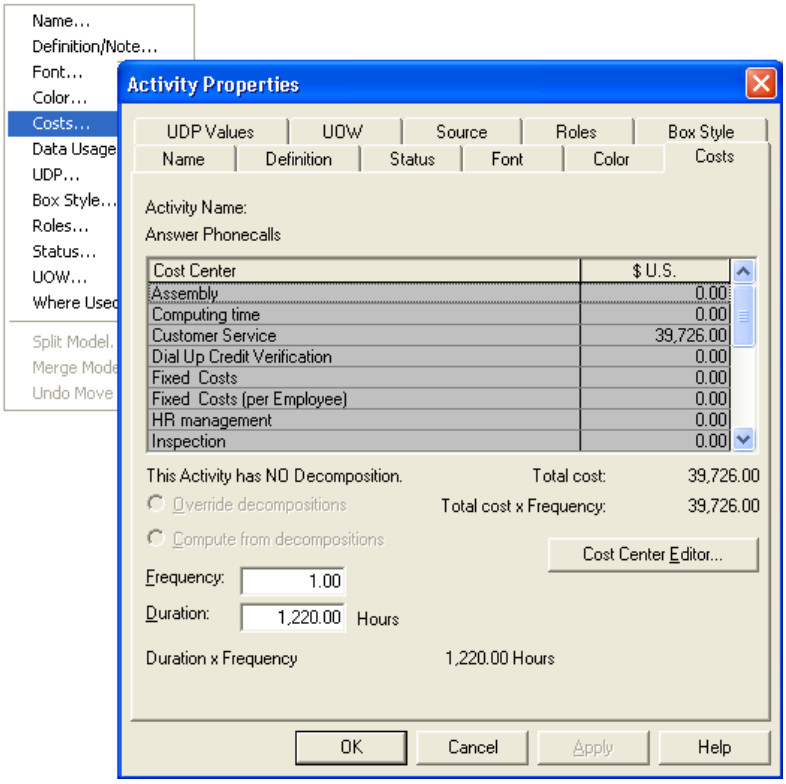
How Units of Measurement are Set

You must set the units of measurement by first deciding what currency you will use to measure cost (usually US dollars) and how it should be formatted for display and in reports (such as, with cents). You also need to specify the unit of time you will use (such as minutes, hours, and so on). These values are global for the model and are set on the ABC Units tab of the Model Properties dialog.



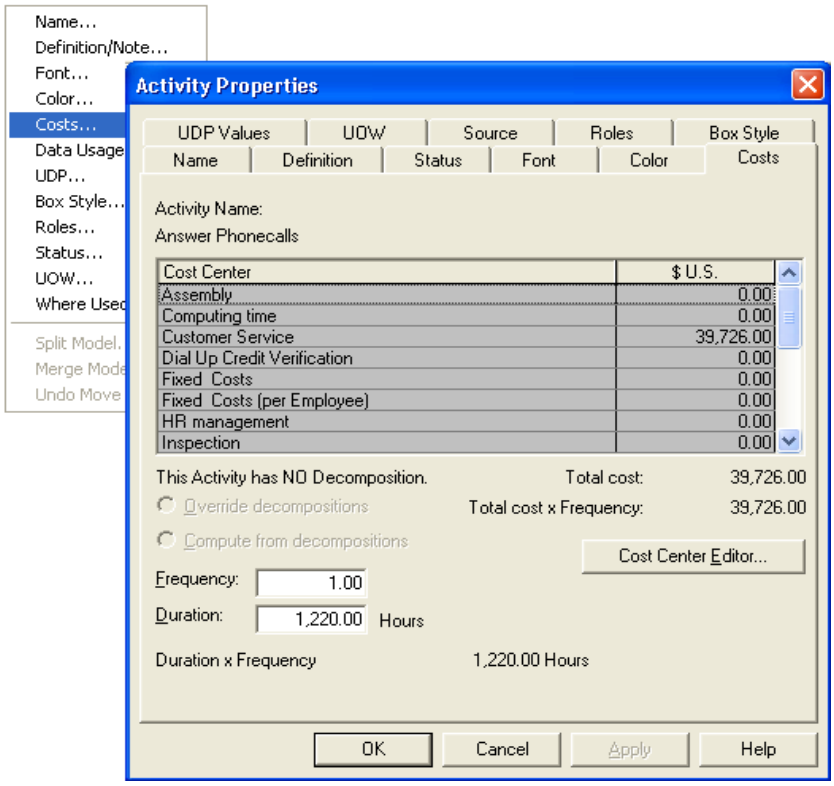
How Cost Centers are Defined

Next, you must add the cost centers you want to use. Cost centers are categories of costs that are shared across all activities. Some examples might include Marketing and Advertising, Purchasing, and Technical Support. The set of cost centers you want to use is specified on the Cost Center Editor, which you can open by right-clicking an activity, selecting Costs from the shortcut menu, clicking the Costs tab, and clicking the Cost Center Editor button.



How Cost Information is Established

To apply costing estimates to the model, you must first assess the cost of performing each activity in the model. The values you calculate must then be allocated to one or more of the Cost Centers you previously defined. To do this, right-click an activity box, select Costs from the shortcut menu, and click the Costs tab.



For each Cost Center, you will specify the following:

- **Frequency**—How often the activity occurs
- **Duration**—How long the activity lasts

The total cost is calculated automatically for each Cost Center and for each activity. An activity's cost displays in the lower left corner of the activity box (upper left corner in Data Flow diagrams) when you select Model Properties from the Model menu and put a checkmark next to ABC Data on the Display tab.

Model Customization

With *User-Defined Properties* (UDPs), AllFusion PM allows you to custom-design a model that contains values specific to your company's activities. To further enhance the value of your model, you can make it as detailed as required. In AllFusion PM, you can create UDPs to associate business-specific information with a diagram object such as an activity or arrow. AllFusion PM supports various types of UDPs, including pull-down lists, command UDPs, and text lists.

Create and Assign User-Defined Properties

The first step to creating UDPs is to apply UDP values to diagram objects such as activities and arrows. For example, you can create a text UDP called EMPLOYEES to list the names of employees who work in departments represented by diagram activities. You can create UDPs that use different datatypes such as text boxes, multi-select lists, and commands that run other Windows applications.

To use UDPs, follow these steps:

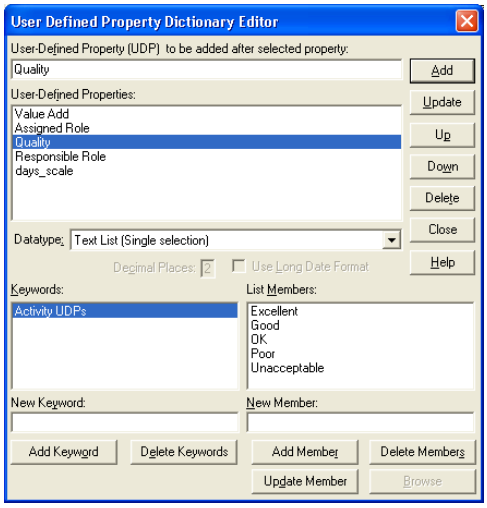
1. Select UDP Definition Editor from the Model menu.

   The User Defined Property Dictionary Editor opens.

2. Assign the property a name and a datatype.
3. Click Add.

   The UDP is added to the User-Defined Properties list.

   Note: Depending on the datatype, you may need to further specify the properties (in the following example, the datatype is a list, so the list values must be specified). Here, you are further detailing specific characteristics that are relevant to your quality cycle.



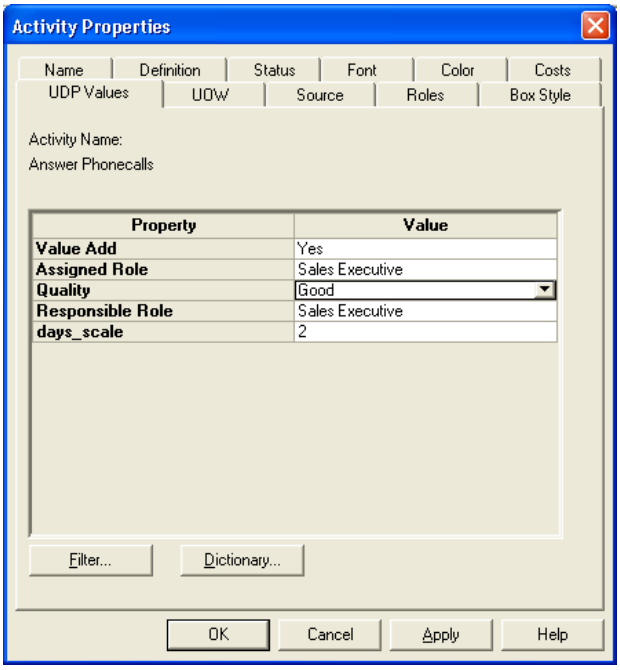
4. Click the Close button

   The User Defined Property Dictionary Editor closes.

5. Right-click an activity and select UDP from the shortcut menu.

   The Activity Properties dialog box appears.

6. Click the UDP Values tab, and specify each value you want to assign to the selected activity or arrow in the Value column.



7. Click OK.

   The Activity Properties dialog closes.

Chapter

8

Using Advanced Features

Organization Visualization

Complex business processes often cut across a number of organizational boundaries and disciplines. Understanding and optimizing these types of processes requires companies to extend their thinking beyond traditional hierarchical modes and to visualize their operations from the perspective of their customers and partners.

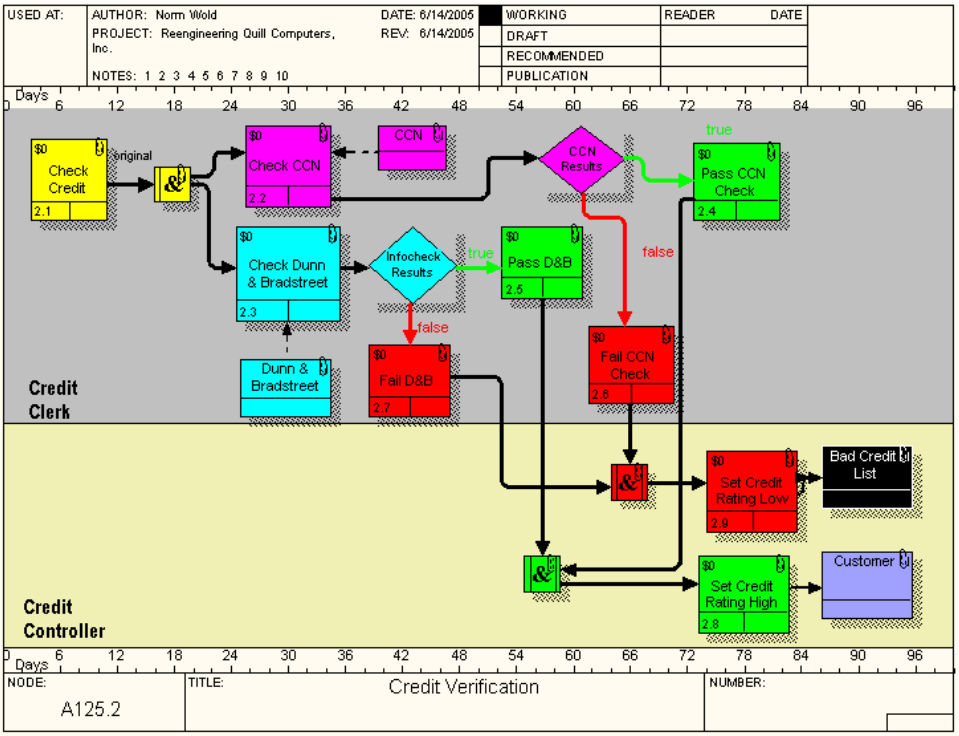
With Swim Lane Diagrams and Organization Charts, AllFusion PM gives you the tools to visualize the structure of your organization, as well as current process flows. Swim Lane diagrams enable you to quickly assess and improve complex business process flows across organizational groups, while Organization Charts graphically help you to understand your organization's structure and its impact on your business optimization effort.

Swim Lane Diagrams

Swim Lane diagrams can provide your organization with an efficient mechanism for visualizing and optimizing processes. Swim Lane diagrams organize complex processes across functional boundaries, and help you to conveniently view processes, roles, and responsibilities, and their flow. You can build a new diagram or use one based on existing Process Flow (IDEF3) diagrams.

You can add Swim Lane diagrams to any AllFusion PM model to better visualize process flow. Swim Lane diagrams use Process Flow Network (IDEF3) methodology, and display graphical horizontal lanes that represent process dependencies called *roles*. For example, you could create a Swim Lane diagram to display all activities with the Shipping role in the Shipping swim lane. You can also add bitmaps and a diagram scale or timeline to any Swim Lane diagram.

The following is an example of a Swim Lane diagram:



Bitmaps in Your Diagram

You can use bitmaps (*.bmp) to enhance the appearance of any AllFusion PM diagram. First, add bitmaps to the Bitmap Dictionary by importing them from an external source, such as your computer hard disk. Then associate the bitmaps in the Bitmap Dictionary with diagram objects such as activities, and object properties such as Roles and Role Groups.

Prerequisites for Adding a Swim Lane Diagram

Before you add a Swim Lane diagram to a model, you must first create the process roles. You can accomplish this by performing either of these tasks:

- Create process roles in the role dictionary.
- Create process roles in the UDP dictionary by adding list items to a text list UDP (UDPs are detailed in the chapter "Adding Value to Your Model").

How Process Roles are Created in the Role Dictionary

Creating process roles involves working with the following dictionaries:

- Role Group Dictionary
- Role Dictionary
- Resource Dictionary

Note: For detailed information about working in each dictionary, refer to the online help.

First, you need to access to the Role Group Dictionary by selecting Role Group from the Dictionary menu. Make selections for the Role Group, save your changes, and then exit the Role Group Dictionary.

Next, access the Role Dictionary from the Dictionary menu. Identify members of the Role Group, then save and exit the Role Dictionary.

Finally, access the Resource Dictionary from the Dictionary menu. Make sure that the Resource names are correctly associated with the Role Group names. Save and exit the Resource Dictionary.

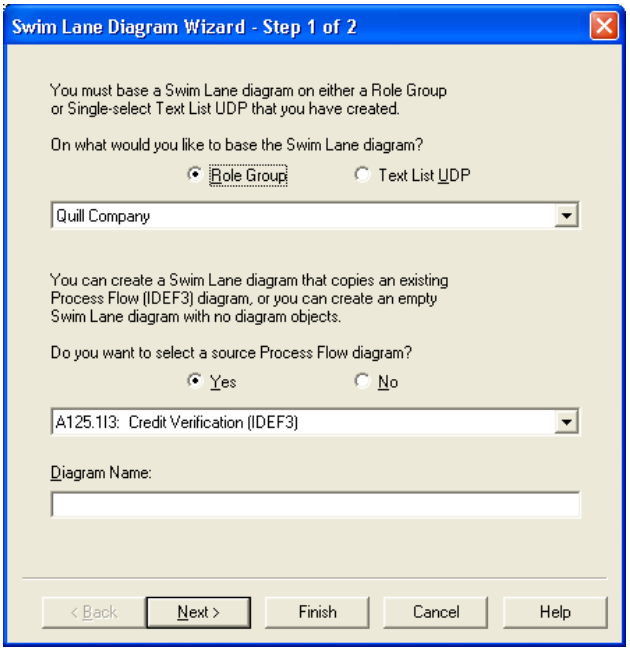
Create a Swim Lane Diagram

You have completed the background task, and now you are ready to create the Swim Lane diagram.

To create a Swim Lane diagram, follow these steps:

1. Select Add Swim Lane diagram from the Diagram menu.

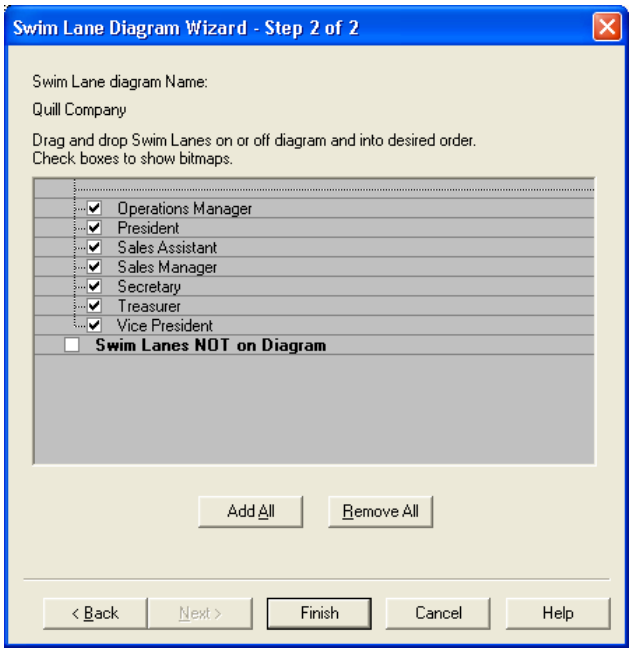
   The Swim Lane Diagram Wizard – Step 1 of 2 dialog opens.



2. Complete the following information in this dialog:
   - Select the Role Group or Text List UDP on which you want to base the Swim Lane diagram.
   - Select whether you want to select a source Process Flow diagram.
   - Type a name for your diagram in the Diagram name box.
3. Click Next.

   The Swim Lane Diagram Wizard – Step 2 of 2 dialog appears.

4. Select the checkbox for each swim lane you want to display in the Swim Lane diagram.



5. Select or clear the check box in the Display Bitmap column to show or hide the role bitmap for each swim lane.

   Note: Swim Lane bitmaps apply only to Swim Lane diagrams based on a Role Group. Bitmaps do not apply to Swim Lane diagrams that you base on a text list.

6. Click Finish.

   You now see your Swim Lane diagram.

Move Objects in Your Diagram

You can move objects in your newly created Swim Lane diagram by clicking and dragging objects to the location that you want. To resize objects, move the cursor over an object until you see a double-headed arrow, then click and drag to resize.

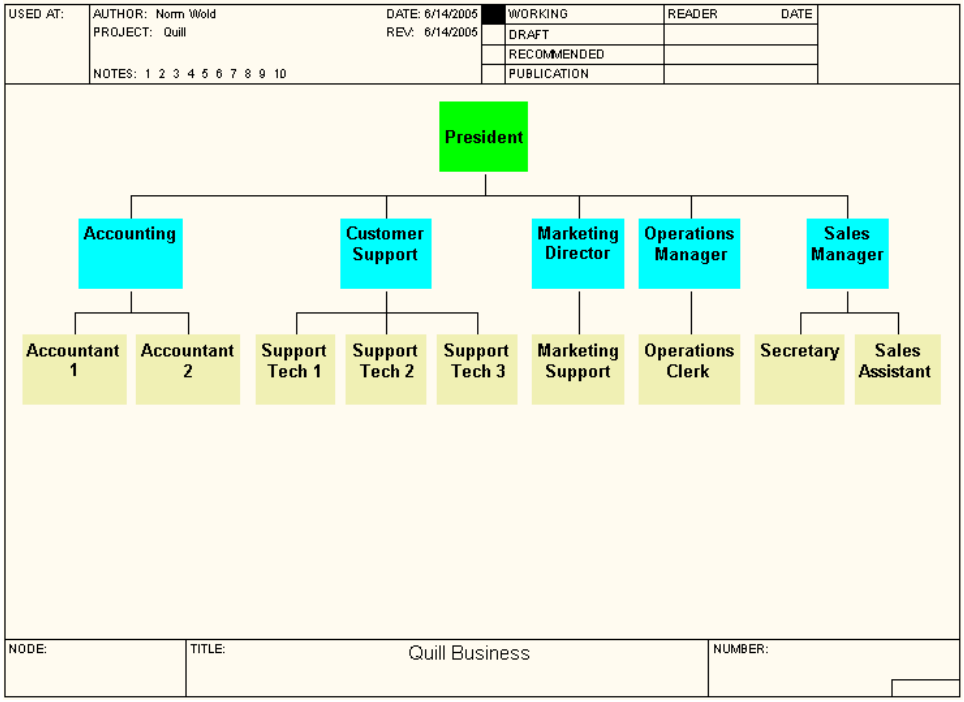
Note: You can change the order of swim lanes on your diagram from the Display tab of the Diagram Properties dialog.

Organization Charts

Organization structures have an immense impact on how business processes are defined and carried out. Without a clear understanding of roles, relationships, and responsibilities, it is often impossible to successfully optimize business operations.

The Organization Charts in AllFusion PM are based on user-defined roles and provide a convenient graphical view of an organization's structure, which can quickly clarify the business process optimization effort.

The following is an example of an Organization Chart:



Prerequisites for Creating an Organization Chart

Make sure you meet the following prerequisites before creating an Organization Chart:

- You must have at least one role group defined in the Role Dictionary (this is described in the previous section How Process Roles are Created).
- The necessary roles must exist in the Role Dictionary and be associated with a role group.
- Any required resources must be added to the Resource Dictionary and associated with roles.

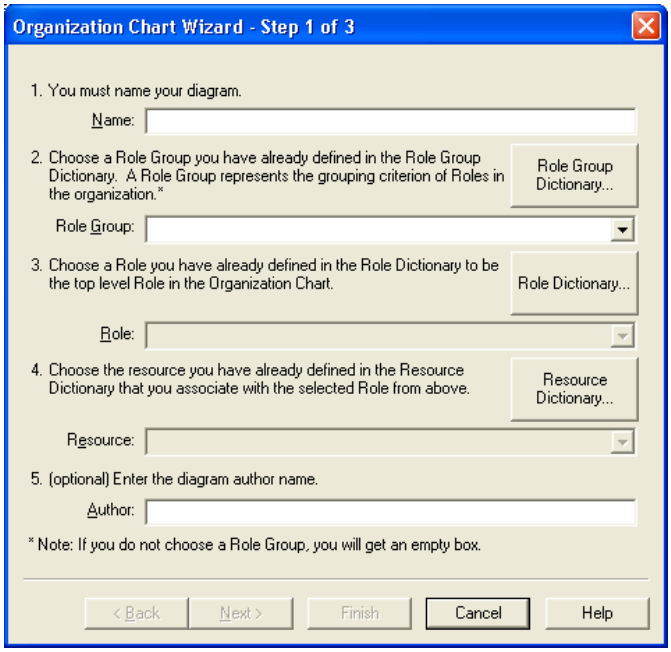
Create an Organization Chart

The Organization Chart Wizard helps you build an Organization Chart into your model.

To launch the Organization Chart Wizard in an open model, follow these steps:

1. Select Add Organization Chart from the Diagram menu.

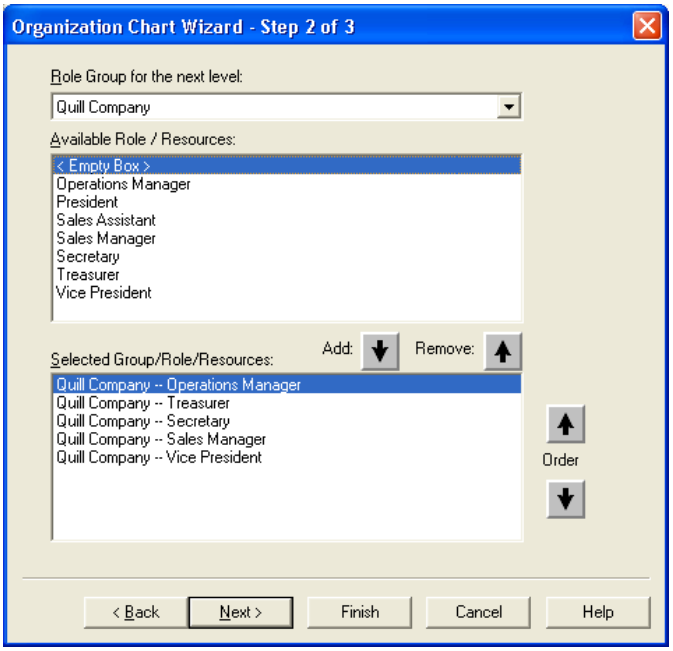
   The Organization Chart Wizard – Step 1 of 3 dialog appears.



2. Enter the appropriate information in fields 1 through 5, as shown in the previous graphic.

3. Click Next.

   The Organization Chart Wizard – Step 2 of 3 appears.

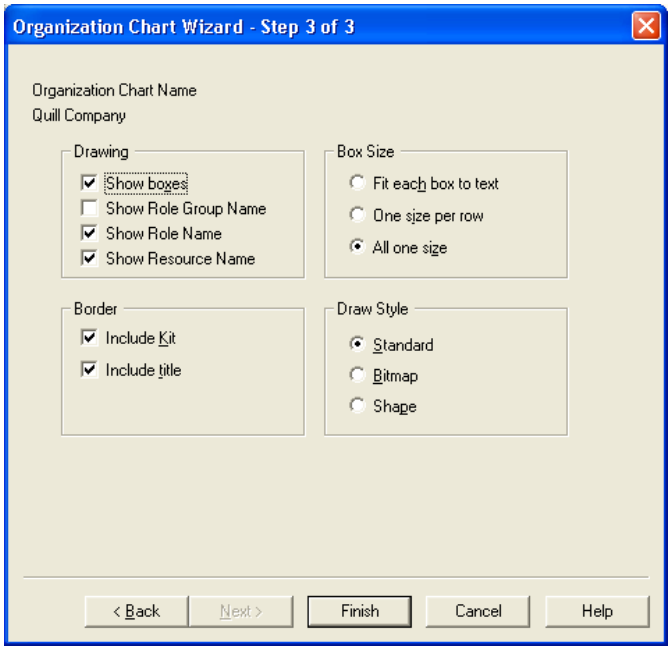


4. Complete the following information in this dialog:

   - Select the appropriate Role Group from the Role Group for the next level drop-down menu.
   - From the Available Role/Resources window, select each role with its corresponding name and click the Add button to add each role to the Selected Role/Resources window.

5. Click Next.

   The Organization Chart Wizard – Step 3 of 3 appears.



6. Select the options that you need (for detailed descriptions of each option, see the AllFusion PM online help).
7. Click Finish.

   Your Organization Chart displays.

Move Objects in Your Chart

You can move objects in your newly created Organization Chart by clicking and dragging objects until the cursor changes into a thick black arrow. The arrow points to the location where the object can be placed. When an arrow appears as you are pointing to the location that you want, release the mouse button and the object appears in its new location.

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