IDEF0 Diagram Template

The IDEF0 Diagram Template includes all the title block, activity box, arrow, node, and label shapes you need to model automated or non-automated systems and processes with the IDEF0 methodology.

For more information about the IDEF0 methodology, choose Help > Visio On The Web > Drawing Resources.

For information about how a specific shape behaves, right-click the shape, then choose Shape Help.

Tips for creating IDEF0 diagrams

- A typical IDEF0 diagram consists of related parent and child diagrams. You can view a child diagram and the child diagram's parent simultaneously by opening two drawing windows and tiling them so they display side-by-side. To open a new drawing window, choose Window > New Window, then choose Window > Tile.

- You can add hyperlinks to shapes so that, for example, you can jump from a parent box to its corresponding child diagram, or from an activity box to a document describing the activity. For details, see Adding, modifying, and deleting hyperlinks.

- A typical IDEF0 diagram includes many parent diagrams, each on its own drawing page. To simplify moving between pages and adding hyperlinks from parent to child, name each drawing page with a node number or other meaningful name that clearly identifies its contents.

Creating the context diagram

The context, or A-0 diagram, is the top-most diagram in an IDEF0 model.

To create the context diagram:

1. Drop a Title Block shape on the drawing page. Type a node name, such as A-0 (A minus zero), or a more complete name, such as QA/A-0, where QA is an abbreviation for the model name. You can also type a title and number. The title block forms a border around the drawing page, and you can type the distance you want the border offset from the outside edge of the page. Click OK.

2. Drop an Activity Box into the title block. Type a name for the process the box represents. Type 0 for the Process ID and A0 for the subdiagram ID, that is, the ID number of this activity box's child diagram. Click Ok.

3. To add external interfaces, drop 1-Legged Connector shapes on the drawing page. Connect their endpoints to the connection points on the Activity Box. If necessary, choose Shape > Flip Horizontal or Shape > Rotate Right or Left to point the arrowheads in the right direction. To add a noun phrase that describes an interface, select the connector representing the interface, then type the text you want.

4. To add Purpose and Viewpoint statements to the context diagram, drop a Text Block shape inside the title block. Drag a side selection handle to stretch the text block across the width of the title block. With the shape selected, type text to describe the viewpoint and purpose of the model you're creating.

Creating parent or child diagrams

Parent diagrams contain between one and six activity boxes, one of which may be a parent box. Each parent box is described in greater detail by a child diagram.

To create a parent/child diagram:

1. Drop a Title Block shape on the drawing page. Type a node name, such as A0 (for the top-most parent diagram), or the node number of the parent function box (for example, A3 or A112) if this parent diagram is also a child diagram. You can also type a title and number. The title block forms a border around the drawing page, and you can type the distance you want the border offset from the outside

edge of the page. Click OK.

2. Drop an Activity Box into the title block. Type a name for the process the box represents (the name should be an active verb or verb phrase). Type the Process ID (a box number between 1 and 6) and a subdiagram ID, that is, the ID number of this activity box's child diagram, if it will have one. The subdiagram ID can be a node number, such as A42, or the page number or name of the child diagram. Click OK.

3. Continue dropping, numbering, and naming activity boxes until you've placed between three and six boxes in the title block.

4. To add constraints to the activity boxes, drop IDEF0 and 1-Legged connector shapes on the drawing page. Drag the control handle on the IDEF0 connector to make it bend the right way. If necessary, choose Shape > Flip Horizontal or Shape > Rotate Right or Left to make the arrowheads point in the right direction. To add a noun phrase that describes a constraint, select the connector representing the constraint, then type the text you want.

   By default, IDEF0 connectors include parentheses that indicate tunneling. You can turn tunneling on or off by right-clicking the shape, then checking or unchecking the Tunnel commands.

5. To add ICOM coding to a boundary arrow, drop a Text Block 8 pt shape on the drawing page near the end of the boundary arrow you want to code. With the text block shape selected, type the appropriate code, such as C3 or O1.

Adding and labeling constraints

In IDEF0 diagrams, arrows represent data or objects that function as constraints. With the 1-Legged, IDEF0, and Dynamic connector shapes on the IDEF0 stencil, you can create all the arrows the IDEF0 syntax supports, including straight-line arrows, curved arrows with 90-degree arcs, forking arrows, joining arrows, tunneling arrows, and more.

With the connectors on the IDEF0 stencil, you can:

• Drag an endpoint to change the length of the connector.

• Choose Shape > Rotate or Flip to point the arrow in the appropriate direction.

• Glue endpoints to connection points on activity box shapes. You can glue both Use endpoints, which are indicated by an arrowhead, and Source endpoints, which have no arrowheads.

• Drag a control handle (if one is available) to change the way the connector bends.

• Change the appearance of or eliminate arrowheads from one or both ends of an arrow by selecting the arrow, choosing Format > Line, then choosing an arrow style or None under Begin and End.

To create arrows that bundle or fork:

1. Drop a connector and glue its endpoint(s) to connection points on one or more activity boxes to create an initial constraint.

2. Drop a second connector and align it with the first so the arrows overlap.

   In cases where the constraints originate in the same activity box, glue the endpoint of the second arrow to the same connection point where you glued the endpoint of the first arrow.
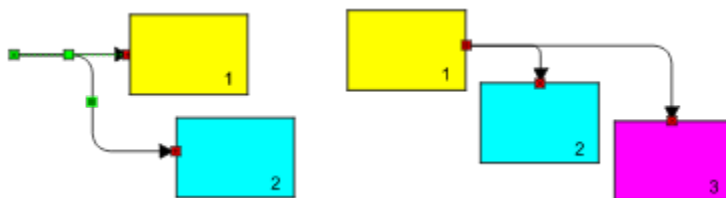
By overlapping connectors, you can create open-ended boundary arrows or feedback arrows that bundle or fork.

To fan out branches:

1. Drop one connector and glue its endpoint(s) to one or more activity boxes to create an initial constraint.

2. With the connector selected, press Ctrl, then drag a copy of the connector to the place where you want the first branch.

3. Press F4 to create as many additional branches as you need.
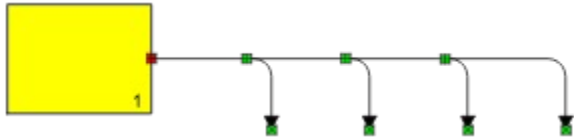
In Visio, you can copy both objects and offsets so fanning out branches is a straightforward task.

To join arrows:

1. Drop one connector and glue its endpoint(s) to create an initial constraint.

2. Drop a second connector and drag one of its endpoints until it is directly on top of the first connector's endpoint. Drag the second endpoint to the location you want.
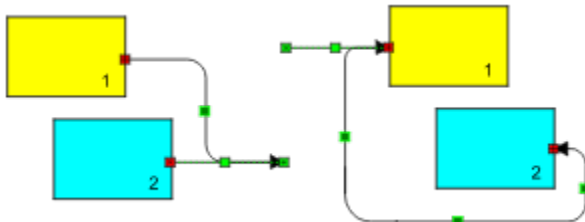
By overlapping connectors, you can join open-ended boundary arrows and feedback arrows. The "down and under" input feedback arrow was created using the IDEF0 connector.

To create a tunneled arrow:

- Drag an IDEF0 connector onto the drawing page and glue its endpoints to connection points on the appropriate activity boxes.

Tip: To hide the tunnel parentheses, right-click an IDEF0 connector and uncheck Tunnel In or Tunnel Out.

To add ICOM coding to a boundary arrow in a child diagram:

- Drop a Text Block 8 pt shape on the drawing page near the end of the boundary arrow you want to code. With the text block shape selected, type the appropriate code, such as C3 or O1.

Creating node trees

A node tree sketches a full IDEF0 decomposition on a single diagram and consists of a tree-structure of nodes rooted at a chosen node.

To create a node tree:

1. Drop a Node shape on the drawing page. Type A0 or the node number or name for the node at which you want the tree rooted.

2. Drop a Solid Connector onto the drawing page. Glue one endpoint to the connection point at the center of the node shape. Drag the other endpoint until the connector is the length you want, then glue it to another Node shape.

3. To create a tree structure, glue several connector endpoints to the same Node.

   Continue dropping and gluing connectors and nodes until you've drawn the node tree.
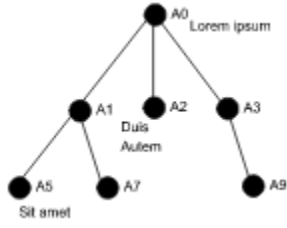
To add a text label to a node, drop a Text Block 8 pt shape on the drawing page. With the shape selected, type the label you want.

Tip: You can add a hyperlink to each node in a node tree so that you can jump from a node to the detailed diagram of the node.