Quick C/O Principles

Opening the Changeover wizard

User "Clicks" feature in the "Sketch" module of the eVSM toolbar and selected the Changeover Wizard.

Time Units

 Drag and drop the "time units" shape from the WizCO stencil onto the page. This registers it as a Changeover design page. Select the appropriate length and cost unit

Impact Flow Panel

Use "Impact Picture" command in Visio to bring in a copy of the flow plan. Freeze the picture by making it transparent so that its easier to see the data that you will create on top of it. Scale it so it is fairly large and can draw process paths within the rectangle in congestion. Optionally you can "lock the box" by using a solid layer and locking the layer.

Establish the Scale

Draw the "actual start time" shape from the WizCO stencil onto the page. Where the actual start time is a known dimensional value on the flow plan. Enter the actual start time in the "stretched" variable. Right click the 'orange interaction shape and select "Show Value" so that, it is changed to show the value in the small square.

Add changeover activities to the flow plan

You can drag activities in from the start of the WizCO stencil. Optionally there is a need to import them from Excel.

Identify the resources working on the changeover

Drag one or more resource shapes from the WizCO stencil onto the page and name each resource using the blue legend. Enter speed and cost values for each. Position each resource somewhere near the first activity that the resource is involved in. Connect each resource using an activity sequence to create a resource chain.

Select the resource and then shift select the activities in sequence that the resource is executing. Create the "Sequence Arrow" button at the bottom of the toolbar to assign the resource to an activity. Note that there cannot be two resources on the same activity.

Intermediate routing points

Note that the length of the sequence arrow is used to estimate walk times. For any complex work patterns between activities and intermediate "routing centers" that the sequence arrows can be connected to.

Connect each resource to the activity sequence to create a resource chain.

You can link the activities later with a "same start" constraint and visio will detect each from another activity.

Handing sequential activities without related walk times

There is a "Trail Time Override" variable on the arrow you can set to the override value. Drag the override variable to the activity path. Right click and "Link" variable and then position it on the sequence arrow.

Avoiding Pre Sequential Activities

Use a text gadget to make the description visible. For any complex walk patterns between activities use a pipe notation as appropriate.

Creating a Quick C/O Example

This must be done every time the scale is changed or the scale arrow is adjusted. This registers it as a Changeover Design page.

Adding a description to the activity

Select the activity and then use the "Add Variables" button to add a description. Use the text gadget to make the description visible.

Identify each activity and job (with or without external).

Internal implies that this activity is enjoyed during the changeover period. Pre Activity Wait and activity duration info is the total time incurred to complete the activity.

Select the activity and then use the "Add Section" button to add a description. Use the text gadget to make the description visible.

Right-click on an activity or arrow and selected "Link" (or external) as appropriate. Apply scheduling constraints BETWEEN the resource chains.

Use the "Pipe" button in the toolbar to create pipes between activities or on two chains. A pipe implies an End-Start constraint. Drag the "Start-Linker" shape on the page and connect activities on different paths so that their yellow flying connector. This implies an End-Start constraint and via leader lines from each activity.

Add a summary shape for the changeover

Drag the summary shape from the WizCO stencil onto the page. Connect all the resource to it via their yellow flying connectors.

Variables

CO-Frequency: Number of changeovers per period
Cost Resource: Cost of the resources involved in accomplishing these changeovers on a per period basis.
Description: Description of this activity. Appears in the CO Chart
Duration: The location of this activity
Effective Flow: System variable used to create a value for the CO plot and allowing the travel time, wait and activity time to be shown on a single bar for more compact layout.
External Delay: The external time component of an activity duration.
Pre Activity Note: The internal time immediately after it of an activity
Pre Activity Note: The internal time immediately ahead of an activity
Pre Activity Note: This is an external wait time for an activity because of a dependency from another path
Pre Activity Note: The time to produce a product or the station, used to estimate production loss during Changeover period
Product Value Lost: The value lost per period at this station due to resource interaction because of changeovers
Resource Cost: This is the cost per period for this resource
Resource Speed: The average speed of movement of this resource
Scaled Distance: User input value of actual distance corresponding to a length on the page between the arrowheads
Total Internal: The total internal time for the changeover activity. This is the stoppage time for the station
Who: System variable. Allows propagation of a resource name to all the activities they are working upon.