

## **HIGH priority**

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### **Use case: Build**

Description: Build circuits and components.

Priority: High

Includes: add component, remove components, connect components, analyse function table, zoom workspace, clockpulse, remove connection, move, select, undo, redo, copy, cut, paste, add decorating object.

Normal flow of events:

1. Calls the chosen use case

### **Use case: New workspace**

Description: Creates a new workspace.

Priority: High

Normal flow of events:

1. A new workspace is displayed at centerstage with the default blank background and a new project tab is displayed among the other earlier project tabs above the center stage.

Exceptional flow:

1. (If we decide to have only one project/workspace open at a time) User clicks create a new workspace menu item.
2. The current workspace will be closed, if unsaved changes has been made a confirm save window will be displayed before closing.

### **Use case: Close the selected workspace**

Description: Closes the selected workspace.

Priority: High

Normal flow of events:

1. The program asks if the user wants to save the workspace
2. a) If the user clicks on "yes", the workspace is saved  
b) if the user clicks on "no", the pop-up is closed and nothing happens
3. The workspace is closed.

Alternate flow:

1. The program asks if the user wants to save the workspace.
2. If the user clicks on cancel, the procedure is cancelled.

### **Use case: Close all workspaces**

Description: Closes all workspaces.

Priority: High

Normal flow of events:

1. For each open workspace; if the workspace has not been saved, the program asks the user if he wants to save the unsaved workspace.
2. If the user chooses yes, the workspace is saved with the Save workspace use-case. If the user chooses no, the workspace is not saved.
3. The workspace in question is closed.

Alternate flow:

1. For each open workspace; if the workspace has not been saved, the program asks the user if he wants to save the unsaved workspace.
2. The user presses cancel.
3. The close all workspaces procedure is cancelled.

**Use case:** Add components

Description: Add a component to the workspace.

Priority: High

Normal flow of events:

1. A component is selected from the palette.
2. A square is created around the mouse pointer, representing the size of selected component.
3. User chooses which location on workspace to place selected component and clicks once again.
4. The selected component is now placed at chosen location on workspace.

Exceptional flow:

1. User tries to place component at unavailable location(on top of another component)
2. The square around mouse pointer is turned red.
3. User clicks mouse to place component.
4. Nothing happens; component is not placed on workspace.

**Use case:** Remove component

Description: Remove objects.

Priority: High

Normal flow of events:

1. System removes the selected component from the screen.

Exceptional flow:

**Use case:** Connect

Description: Connect two different components.

Priority: High

Normal flow of events:

1. User clicks on a port of a component.
2. A line is shown on the screen to indicate that a connection is ready to be made.
3. The user clicks on a second port.
4. A line is drawn between the two ports, indicating that they are connected.

Exceptional flow a):

1. User clicks on an input of a component
2. A line is shown on the screen to indicate that a connection is ready to be made.
3. The user clicks on a second input.
4. The line disappears.

Exceptional flow b):

1. User clicks on an output of a component
2. A line is shown on the screen to indicate that a connection is ready to be made.
3. The user clicks on a second output.
4. The line disappears.

**Use case:** Select

Description: Select components.

Priority: High

Normal flow of events:

1. A blue highlight is drawn around the component.

Exceptional flow:

**Use case:** Exit program

Description: Shut down program.

Priority: High

Normal flow of events:

1. Program exits gracefully.

**Use case:** Select all

Description: Selects all components and connections.

Priority: High

Extends: Select

Includes: Multiple select

Normal flow of events:

1. A blue highlight is drawn around every object in the workspace.

**Use case:** Deselect component

Description: Deselects a component.

Priority: High

Extends: Select

Normal flow of events:

1. Outline of the component turns black.

**Use case:** Deselect all

Description: Deselects all components.

Priority: High

Extends: Deselect component

Normal flow of events:

1. Outline of the components turn black.

## **MEDIUM priority**

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### **Use case:** Multiple select

Description: Select multiple components (ctrl + left mouse click)

Priority: Medium

Extends: select

Normal flow of events:

1. The component is highlighted in blue.
2. User holds down ctrl while clicking another object in the workspace.
3. The component is highlighted in blue, and the highlight of the other component is still visible.

### **Use case:** Set background

Description: Choose between blank, dotted or grid background.

Priority: Medium.

Normal flow of events:

1. Chosen background is displayed at canvas.

### **Use case:** Paste

Description: Pastes clipboard-objects to current workspace.

Priority: Medium

Normal flow of events:

1. If there are components in the clipboard, those are pasted in the center of the active workspace.

### **Use case:** Navigate workspace

Description: Navigates the workspace.

Priority: Medium

Includes: Pan workspace, Zoom workspace.

Normal flow of events:

1. If the user chooses to pan around, call UC Pan workspace.
2. If the user chooses to zoom, call UC Zoom workspace.

### **Use case:** Pan workspace

Description: Moves the workspace around.

Priority: Medium

Normal flow of events:

1. View pans around corresponding to which directional key was pressed.

### **Use case:** Save all workspaces

Description: Saves all open workspaces.

Priority: Medium

Extends: Save current workspace

Normal flow of events:

1. All workspaces are saved.

**Use case: Save current workspace**

Description: Saves active workspace as a circuit.

Priority: Medium

Normal flow of events:

1. Current workspace is saved the save workspace toolbar item is disabled(responsive enabling).

Alternative flow of events:

1. User clicks either save workspace menu item, save workspace toolbar item or save workspace short command to save changes made to circuit that previously has not been saved.
2. A pop up window asks user which name the project should be given and directory.
3. After user has given name and directory and clicked "save", current workspace is saved and the save workspace toolbar item is disabled.

Exceptional flow:

**Use case: Clockpulse**

Description: Generates a clockpulse.

Priority: Medium

Normal flow of events:

1. Clock components output switches from 0 to 1.
2. Circuit logic is calculated.
3. Clock components output switches from 1 to 0.
4. Circuit logic is calculated.

Exceptional flow:

**Use case: Move**

Description: Move a component.

Priority: Medium

Normal flow of events:

1. A square is displayed around mouse pointer to display size of component, component disappears from workspace.
2. User clicks left mouse button at preferred location to place component.
3. Component is place at chosen location on workspace.

Alternate flow:

1. If the location is unavailable, nothing happens, selected component is not placed on workspace.

Alternate flow:

1. User selects a component from palette while already having selected component placed on workspace.
2. If a component is already selected, component selected from workspace returns to its original location on workspace and component from palette is selected.

**Use case:** Choose representation between US and IEC standard

Description:

Priority: Medium

Normal flow of events:

1. The representation of components is selected in the 'view' menu on the menu bar.

## **LOW priority**

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**Use case:** Add decorative object

Description: Adds a decorative object to the workspace.

Priority: Low

**Use case:** Save as picture

Description: Saves current workspace as picture.

Priority: Low

Extends: Save workspace

Normal flow of events:

1. The program asks for a location to save the image in.
2. The user selects a valid location.
3. The program exports the active workspace as an image.

**Use case:** Analyse function table

Description: A table displaying current variable values.

Priority: Low

Normal flow of events:

1. A function table appears on the top right hand side of the center stage.

**Use case:** Undo

Description: Undo previous action.

Priority: Low

Normal flow of events:

1. Last made change is undone if there has been a change.

Alternate flow:

1. Nothing happens if no changes have been made.

**Use case:** Redo

Description: Redo previous action.

Priority: Low

Normal flow of events:

1. Last undo action is redone.

Alternate flow:

1. Nothing happens if no undo has been made.

**Use case:** Save as component.

Description: Saves the current circuit as one unit.

Priority: Low

Normal flow of events:

1. System displays a dialogue asking the user where the file will be saved and in what format.
2. User chooses location and format and presses "Ok".
3. The dialogue closes.

**Use case:** Zoom workspace

Description: Zoom workspace in/out.

Priority: Low

Normal flow of events:

1. The workspace zooms in or out depending on which key/direction on the scroll the user uses.

**Use case:** Remove connection

Description: Removes the connection between two components or gates.

Priority: Low

Extends: remove

Normal flow of events:

1. System the selected connection from the screen.