# Customizing of WinCC Controls

**SIMATIC WinCC**

**Configuration Example • February 2011**

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**SIMATIC**
# WinCC Control Customizing

Customizing of WinCC Controls

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# Contents

# 1 Automation Function

Customizing WinCC controls according to individual requirements is frequently required. Touch screen operation can be taken as an example, where the standard buttons of the controls are too small.

Sometimes it is desirable to adapt the appearance of the controls to the individual project layout.

Figure 1-1 illustrates the fact that standard buttons are too small for touchscreen entry. The buttons in figure 1-2 were customized, facilitating their operation through a larger display.

Figure 1-1



Figure 1-2

# 2 Automation Solution

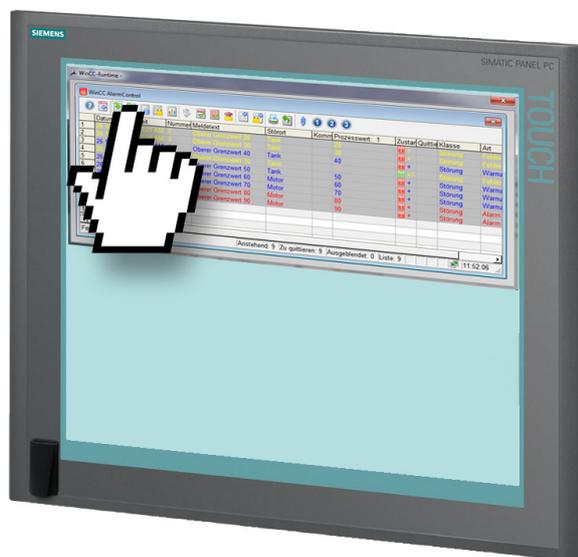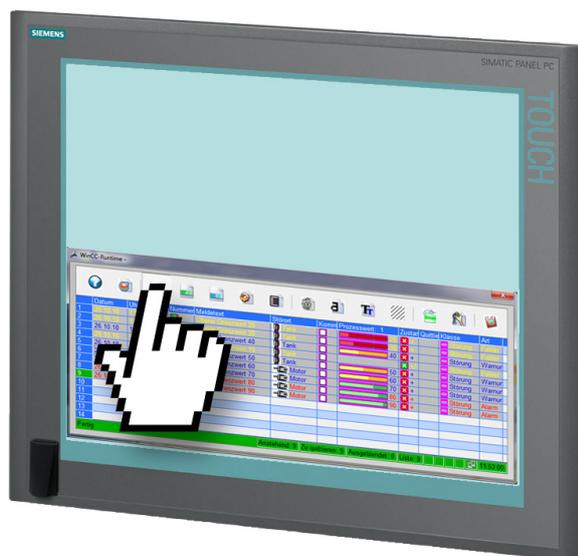## 2.1 Overview of customizing options

This document facilitates the customizing of WinCC controls. You have the following options of customizing the control properties:

- Customize buttons (size and layout)
- Grids, e.g. in AlarmControl (individual icons, also depending on values)
- Scrollbar (style)

**Scope limitation**

This application does not include instructions for operating and using WinCC.

## 2.2 Hardware and Software Components Used

This application was created using the following components:

**Standard Software Components**

Table 2-1

| Component | Qty. | MLFB/order number | Note |
|---|---|---|---|
| WinCC V7.0 SP2 (RC) | 1 | 6AV63.1-….7-0… | |

**Example files and projects**

The following list includes any files and projects used in this example.

Table 2-2

| Component | Note |
|---|---|
| WinCC_Control_costumizing.doc | This document. |
| OriginalIcons.zip | Standard WinCC icons. |
| Customizing.zip | Newly created example icons. |
| ProjectCustomizedControls.zip | WinCC example project |

# 3 Configuration and Project Planning

## 3.1 Customizing the Toolbar

**General**

Operation and customization of the toolbar is the same for all WinCC controls.

**Standard Configuration**

In standard configuration, different buttons can be selected and their order can be re-arranged. Also, hotkeys can be assigned that are used to call the functions connected with the buttons. The user can create buttons that trigger certain events when clicked on.

Figure 3-1
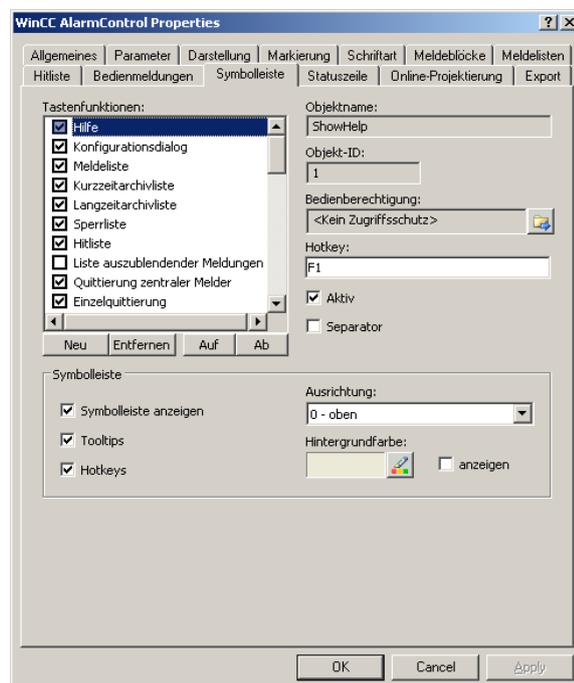


In standard configuration, the graphics of the toolbar cannot be modified. The user-defined buttons only have numbers and therefore have no significance to the user.

The size of the buttons is much too small for use on displays operated manually through touchscreen. In standard configuration this size cannot be modified.

**Creating a subfolder for individual layouts**

The standard installation of WinCC will create the folder "CCAxControlSkins" in directory "C:\Programs\Common Files\Siemens\BIN\".

Within this folder, a subfolder with the control name must be created for each control that you wish to change the toolbar buttons for. For the AlarmControl the folder's name is „AlarmControl".

Create a new subfolder ("new button") using the above path, in which the individual layouts for the toolbar can be stored.

3.1 Customizing the Toolbar

| Note | Generally, please note that the folder "CCAxControlSkins" is PC-based and is therefore not necessarily available on the WinCC client. This must be taken into account especially when using multiple workplace systems or the WebNavigator option. |
|------|------|

| Note | The file and folder names listed in the following must be precisely adhered to so that the symbols are correspondingly displayed by the controls.

The data format „png" is used as an example in the description. The "gif" and "jpg" formats are also permissible. |
|------|------|

| Note | Basically, not all graphics files mentioned must be created when setting up a new layout. The standard control settings will be used for all files not available. |
|------|------|

**Overview of the subfolders for the various controls**

Table 3-1

| No. | Control |
|-----|---------|
| 1. | AlarmControl |
| 2. | FunctionTrendControl |
| 3. | OnlineTableControl |
| 4. | OnlineTrendControl |
| 5. | Scrollbar |
| 6. | TrendRulerControl |

**Selection of modifications**

In order to visualize the effects of the changes made, the selection of the layout needs to be changed via the configuration dialog of the control (in this case AlarmControl).

Once the folder "new button" is created in the above directory, its name will appear in the list of layouts.

Figure 3-2
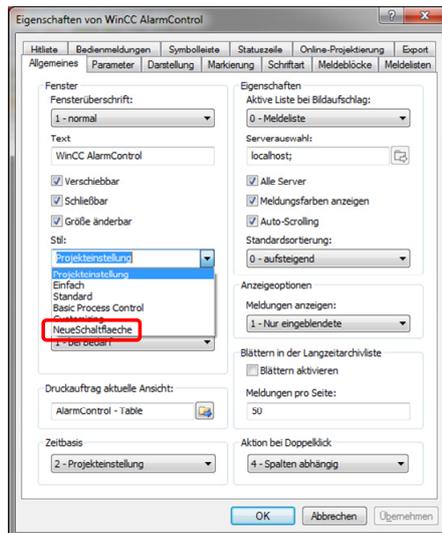


### 3.1.1 Customizing the size of the buttons

The file "IconsBackground.png"defines the size of the buttons. Since the toolbar buttons are square, the maximum of the side lengths is read out of "IconsBackground.png" and set as the height and length of the buttons. The size defined by this is fixed and cannot be changed through other graphics.

With this customization you can set the size of the buttons according to your needs.

Figure 3-3
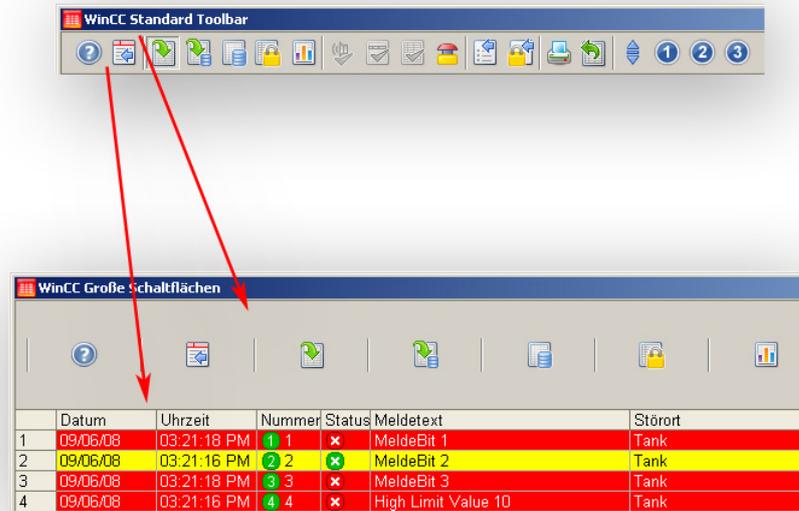
### 3.1.2 Customizing the icons on the buttons

**Basic procedure**

The file "IconsNormal.png" must be created in the "Toolbar" folder in order to customize graphics. In this file, the individual graphics of the buttons must be inserted successively. See the following diagram. (The file for disabled buttons is "IconsDisabled.png".)

Figure 3-4



The file "IconsNormal.png" can be customized as desired and replaced by new graphics for the buttons. If you want to use new graphics the files "IconsNormal.png" and "IconsDisabled.png" must be customized. You can customize the graphics with any graphics program.

The control reads the file, cuts it into individual graphics and displays the cut parts on the buttons.

**Example for customized graphics on buttons**

If you want to display larger buttons, the "IconsNormal.png" and "IconsDisabled.png" graphics  must be enlarged.

Figure 3-5



### 3.1.3 Changing user-defined buttons

The user-defined buttons only have graphics with numbers from one through nine. The numbers have no significance for the user. Only nine user-defined buttons can be created, after that only hatched boxes will be displayed.

Figure 3-6



Customized graphics of the user-defined buttons are created in the same manner as the standard buttons described above.

After creating and renaming the files, store them in the "Toolbar" folder.

### 3.1.4 Customizing the divider / dividing space

The divider and the left space before the button starts can also be customized. Create the file "Space.png" and store it in the "Toolbar" folder in order to change the space around the divider.

The width of this graphics is used as the width of the dividing space. To change the left margin you can create the file "Left.png". A margin as wide as "Left.png" will be created on the left of the start of the button.

Figure 3-7
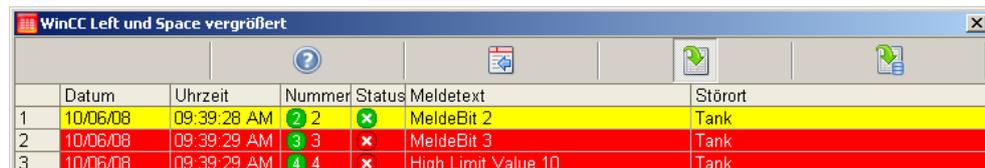


## 3.2 Customizing grids

The grid (table element) can be customized for the AlarmControl. In standard layout, text and, in certain columns, also icons are displayed in the cells.

Basically, for each control with a table, you can determine in the configuration dialog, whether the content is to be displayed as a text or as an icon.

The selection for AlarmControl is shown below. In this case the status is shown as a text and an icon.

3.2 Customizing grids

Figure 3-8

The status content is shown both as text and icon, in case there are any comments an icon will be displayed as well.

**Modification of standard icons**

By way of customizing, different icons can be displayed in the cells as a function of the value.

To implement this, analogous to the modification of the toolbar appearance, a folder with the name of the new layout must be created in "CCAxControlSkins". In this example the folder "TableIcons" is created.

In this folder, a subfolder for the control (here: "AlarmControl") and there the folder "GridIcons" must be created. In "GridIcons", one folder will be created for each column of the table in which icons shall be displayed.

The name of the folder is the same as the object name of the message block (see figure 4-9)[1]. The layout "TableIcons" is selected from the configuration dialog to activate the new icons. In this example, the status column icons included in the standard layout are being replaced. For this purpose the folder "State" is created. The graphics with the respective status names [2] (in English) must be included in this folder. For states having a corresponding graphics in this folder, the new icon will be shown in the table cell upon occurrence of this state.

Figure 3-9



No icons can be displayed in the date and time columns.

In order to assign icons to message numbers, a numerical value can be assigned to each graphics. For instance, the respective number will be highlighted in a certain color. Then the graphics names (in the „Number" folder) will be for example five "5.png". If an icon is defined for a certain interval rather than a single value, the graphics name for an interval, for example 50 to 100, will be "50_100.png", the limits being included in the interval.

The graphic icons being very flexible, it can be convenient to show the icons only, without text, to visualize for instance a filling level. For cells including text, such as the point of failure, a graphic file needs to be defined for each text that can be displayed. The point of failure column actually offers the option of visually showing the operator where an error message has occurred. If a failure occurred in the tank, a tank icon can be shown, or if it occurred in a valve, a corresponding valve component can be shown.

Figure 3-10



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[1] You will find an overview of all message blocks and their object names in the Appendix

[2] You will find an overview of all values that status and further columns can take in the Appendix

## 3.3 Customizing the scrollbar

You can customize the scrollbar of the WinCC controls. To do this, replace the graphic files that the scrollbar is composed of.

Figure  shows the standard scrollbar that is shown when no changes are made.

Figure 3-11



As in the toolbar customizing process, a "Scrollbar" folder is created in the directory "C:\Programs\Common Files\Siemens\BIN\CCAxControlSkins\New button". There the "horizontal" and "vertical" folders are created.

Within these folders, numerous individual files must be created or customized, of which the scrollbar is composed during the run time. The following diagram shows one example of a customized scrollbar.

Figure 3-12

# 4 Appendix

## 4.1 Layout structure AlarmControl

**Toolbar graphics**

Table 4-1

| Values (graphics name) | Description |
|---|---|
| IconsBackground.png | Size of toolbar icons |
| IconsDisabled.png | Disabled icons |
| IconsDisabledEx.png | Disabled user-defined icons |
| IconsNormal.png | Icons |
| IconsNormalEx.png | User-defined icons |
| Left.png | Left margin in toolbar |
| Space.png | Space between the icons |

**Assignment of toolbar buttons**

Table 4-2

| Function | Object ID (sequence in IconsNormal.png) |
|---|---|
| Help | 1 |
| Configuration dialog | 2 |
| Message list | 3 |
| Short-term archive list | 4 |
| Long-term archive list | 5 |
| Blocked items list | 6 |
| Hit list | 7 |
| List of alarms to hide | 8 |
| Acknowledgement of central detectors | 9 |
| Single acknowledgement | 10 |
| Group acknowledgement | 11 |
| AutoScroll | 12 |
| Selection dialog | 13 |
| Display option dialog | 14 |
| Blocked items dialog | 15 |
|  |  |
| Print | 17 |
| Emergency acknowledgement | 18 |
| First alarm | 19 |
| Previous alarm | 20 |
| Next alarm | 21 |
| Last alarm | 22 |
| Infotext dialog | 23 |
| Comment dialog | 24 |
| Loop In Alarm | 25 |

| Function | Object ID (sequence in IconsNormal.png) |
|---|---|
| Block alarm | 26 |
| Release alarm | 27 |
| Hide alarm | 28 |
| Show alarm | 29 |
| Sorting dialog | 30 |
| Time base dialog | 31 |
| Copy lines | 32 |
| Connect backup | 33 |
| Disconnect backup | 34 |
| Export data | 35 |
| First page | 36 |
| Previous page | 37 |
| Next page | 38 |
| Last page | 39 |

**Assignment of user-defined toolbar buttons**

Table 4-3

| Function | Object ID (sequence in IconsNormalEx.png) |
|---|---|
| User-defined 1 | 1001 |
| User-defined 2 | 1002 |
| User-defined X | 100X |

Table 4-4

| Folder (object name in message block) | Values (graphics name) | Description |
|---|---|---|
| Date | No icons possible | |
| Time | No icons possible | |
| Duration | No icons possible | |
| SumWin | No icons possible | |
| State | Come | received |
| | ComeQuit | Received and acknowledged |
| | Go | present |
| | Info | Information |
| | Lock | Blocked |
| Quitstate | Quit | Acknowledgement |
| | QuitEmergency | Emergency acknowledgement |
| | QuitHorn | Horn acknowledgement |
| | QuitSystem | System acknowledgement |
| Number | | Numerical value as name of graphics (e.g. "1.png", "5.png") |

| Folder (object name in message block) | Values (graphics name) | Description |
|---|---|---|
| Class | Error | Error |
| | Unknown | Unknown |
| | System | System |
| Type | Error | Error |
| | Warning | Warning |
| | Alarm | Alarm |
| AGCPU | No icons possible | Name of displayed variable as name of the graphics |
| Tag | | |
| Reporting | Yes | Logging available |
| | No | No logging available |
| Comment | Yes | Comment available |
| | No | No comment available |
| Infotext | Yes | Infotext available |
| | No | No infotext available |
| LoopInAlarm | Yes | Loop In available |
| | No | No Loop In available |
| Computername | | Displayed computer name as name of the graphics |
| Username | | Displayed user name as name of the graphics |
| Priority | | Numerical value as name of graphics (e.g. "1.png", "5.png") |
| Text1 to text 10 | | Displayed text as name of the graphics |
| Value1 to value10 | | Numerical value as name of graphics (e.g. "1.png", "5.png") |

## 4.2 Layout structure FunctionTrendControl

**Toolbar graphics**

Table 4-5

| Values (graphics name) | Description |
|---|---|
| IconsBackground.png | Size of toolbar icons |
| IconsDisabled.png | Disabled icons |
| IconsDisabledEx.png | Disabled user-defined icons |
| IconsNormal.png | Icons |
| IconsNormalEx.png | User-defined icons |
| Left.png | Left margin in toolbar |
| Space.png | Space between the icons |

## Assignment of toolbar buttons

Table 4-6

| Function | Object ID (sequence in IconsNormal.png) |
|---|---|
| Help | 1 |
| Configuration dialog | 2 |
| Ruler | 3 |
| Zoom section | 4 |
| Zoom +/- | 5 |
| Zoom x-axis | 6 |
| Zoom y-axis | 7 |
| Shift trend range | 8 |
| Shift axis range | 9 |
| Original view | 10 |
| Select data connection | 11 |
| Select trends | 12 |
| Select time range | 13 |
| Previous trend | 14 |
| Next trend | 15 |
| Start / Stop | 16 |
| Pressure | 17 |
| Connect backup | 18 |
| Disconnect backup | 19 |
| Export data | 20 |

## Assignment of user-defined toolbar buttons

Table 4-7

| Function | Object ID (sequence in IconsNormalEx.png) |
|---|---|
| User-defined 1 | 1001 |
| User-defined 2 | 1002 |
| User-defined X | 100X |

## Grid

There is no grid available.

## 4.3      Layout structure OnlineTableControl

**Toolbar graphics**

Table 4-8

| Values (graphics name) | Description |
| --- | --- |
| IconsBackground.png | Size of toolbar icons |
| IconsDisabled.png | Disabled icons |
| IconsDisabledEx.png | Disabled user-defined icons |
| IconsNormal.png | Icons |
| IconsNormalEx.png | User-defined icons |
| Left.png | Left margin in toolbar |
| Space.png | Space between the icons |

**Assignment of toolbar buttons**

Table 4-9

| Function | Object ID (sequence in IconsNormal.png) |
| --- | --- |
| Help | 1 |
| Configuration dialog | 2 |
| First data set | 3 |
| Previous data set | 4 |
| Next data set | 5 |
| Last data set | 6 |
| Edit | 7 |
| Copy lines | 8 |
| Select data connection | 9 |
| Select columns | 10 |
| Select time range | 11 |
| Previous column | 12 |
| Next column | 13 |
| Start / Stop | 14 |
| Print | 15 |
| Define statistics range | 16 |
| Calculate statistics | 17 |
| Connect backup | 18 |
| Disconnect backup | 19 |
| Export data | 20 |

**Assignment of user-defined toolbar buttons**

Table 4-10

| Function | Object ID (sequence in IconsNormalEx.png) |
|---|---|
| User-defined 1 | 1001 |
| User-defined 2 | 1002 |
| User-defined X | 100X |

**Grid**

Display of icons not possible.

# 4.4 Layout structure OnlineTrendControl

**Toolbar graphics**

Table 4-11

| Values (graphics name) | Description |
|---|---|
| IconsBackground.png | Size of toolbar icons |
| IconsDisabled.png | Disabled icons |
| IconsDisabledEx.png | Disabled user-defined icons |
| IconsNormal.png | Icons |
| IconsNormalEx.png | User-defined icons |
| Left.png | Left margin in toolbar |
| Space.png | Space between the icons |

**Assignment of toolbar buttons**

Table 4-12

| Function | Object ID (sequence in IconsNormal.png) |
|---|---|
| Help | 1 |
| Configuration dialog | 2 |
| First data set | 3 |
| Previous data set | 4 |
| Next data set | 5 |
| Last data set | 6 |
| Ruler | 7 |
| Zoom section | 8 |
| Zoom +/- | 9 |
| Zoom time axes | 10 |
| Zoom value axis | 11 |
| Shift trend range | 12 |
| Shift axis range | 13 |
| Original view | 14 |
| Select data connection | 15 |

| Function | Object ID (sequence in IconsNormal.png) |
|---|---|
| Select trends | 16 |
| Select time range | 17 |
| Previous trend | 18 |
| Next trend | 19 |
| Start / Stop | 20 |
| Print | 21 |
| Define statistics range | 22 |
| Calculate statistics | 23 |
| Connect backup | 24 |
| Disconnect backup | 25 |
| Export data | 26 |
| Relative axis | 27 |

**Assignment of user-defined toolbar buttons**

Table 4-13

| Function | Object ID (sequence in IconsNormalEx.png) |
|---|---|
| User-defined 1 | 1001 |
| User-defined 2 | 1002 |
| User-defined X | 100X |

**Grid**

Display of icons not possible.

# 4.5 Layout structure RulerControl

**Toolbar graphics**

Table 4-14

| Values (graphics name) | Description |
|---|---|
| IconsBackground.png | Size of toolbar icons |
| IconsDisabled.png | Disabled icons |
| IconsDisabledEx.png | Disabled user-defined icons |
| IconsNormal.png | Icons |
| IconsNormalEx.png | User-defined icons |
| Left.png | Left margin in toolbar |
| Space.png | Space between the icons |

**Assignment of toolbar buttons**

Table 4-15

| Function | Object ID (sequence in IconsNormal.png) |
|---|---|
| Help | 1 |
| Configuration dialog | 2 |
| Ruler window | 3 |
| Statistics range | 4 |
| Statistics | 5 |
| Print | 6 |
| Export printing | 7 |

**Assignment of user-defined toolbar buttons**

Table 4-16

| Function | Object ID (sequence in IconsNormalEx.png) |
|---|---|
| User-defined 1 | 1001 |
| User-defined 2 | 1002 |
| User-defined X | 100X |

**Grid**

Display of icons not possible.

# 5 Links & Literature

## 5.1 Literature

This list is not in any way complete and only represents a selection of suitable literature.

Table 5-1

| | Topic | Title |
|---|---|---|
| /1/ | STEP7 | Automatisieren mit STEP7 in AWL und SCL<br>Hans Berger<br>Publicis MCD Verlag<br>ISBN 3-89578-113-4 |
| /2/ | | |

## 5.2 Internet links

This list is not in any way complete and only represents a selection of appropriate information.

Table 5-2

| | Topic | Title |
|---|---|---|
| \1\ | Reference to the document | http://support.automation.siemens.com/WW/view/en/BeitragsID |
| \2\ | Siemens I IA/DT Customer Support | http://support.automation.siemens.com |
| \3\ | | |

# 6 History

Table 6-1

| Version | Date | Changes |
|---------|------|---------|
| V1.0 | xx.xx.20xx | First issue |
| V3.1 | 07.12.2009 | Corrected header and footer |
| | | |