# Maestro Wizard Config Tool User Manual

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# 1. Startup Screen and Menus

New: Is used to prepare a new signal program

Open: Is used for opening an existing signal program file.

Connection: Is used for connection settings of program with controller

- ✓ USB
- ✓ Serial port

After selecting connection type click “Connect” button.

Download: Used for downloading the program form controller

Events: Is used for downloading all error and event records from controller to the computer.

Connection Status Indicator: Shows the status of connection to the computer “Green” connected, “Red” no connection, “Yellow” computer try to connect to the controller, try to connect again if it takes more than three minutes.


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Language: Selection of language for Config Tool. Turkish, English or French can be chosen.

Save: Is used for saving changes made.

Save As: Is used for saving changes in a different file.

Upload: Used for sending program to the controller.

## 2. Intersection & Connection Information

### 2.1 Intersection Information

In intersection information part, information related to the location of the intersection, device type, and time zone entered.

Last edit ID taken automatically by program and saved.

### 2.2 Remote Connection Information

Necessary information for MCTS connection entered to this part, user name and password is optional and not mandatory. Domain URL and APN must be entered in order to connect to system.


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## 2.3 Failure Actions

"Invalid Supply Voltage Action" selected by user, if "Turn off Signals" choice is selected controller device will close signals for all voltages out of 175V-275V.

# 3. Intersection Layout & Signal Groups

## 3.1 Upload layout

To upload intersection layout, click "Upload Layout" button. After clicking the button, sample intersection layouts will be open. User can select from samples or any other layout from another file. "SG 1" will be added automatically, other signal group should be drag and drop over intersection layout. (user also can drag and drop signal group icons without uploading layout). The Maestro IC has 96 signal outputs. With this output, a maximum of 36 signal groups can be defined.


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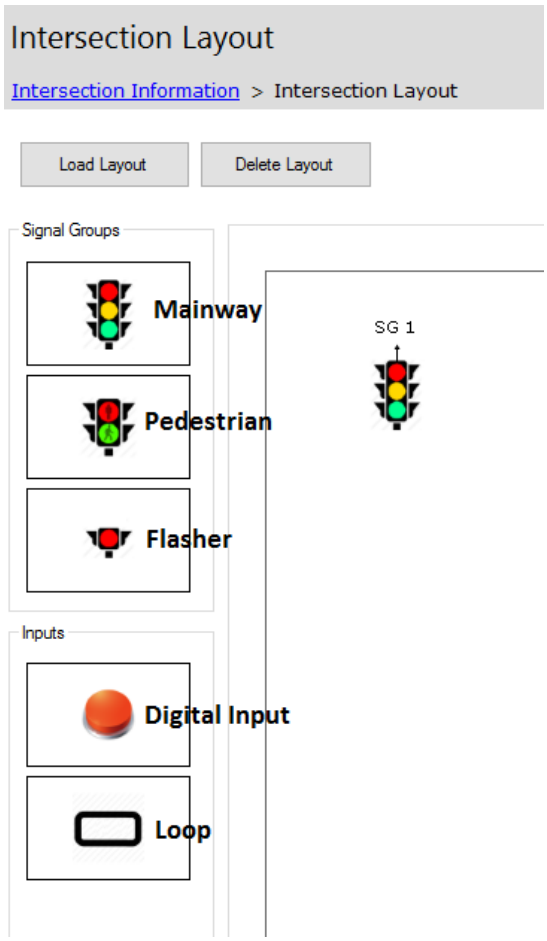


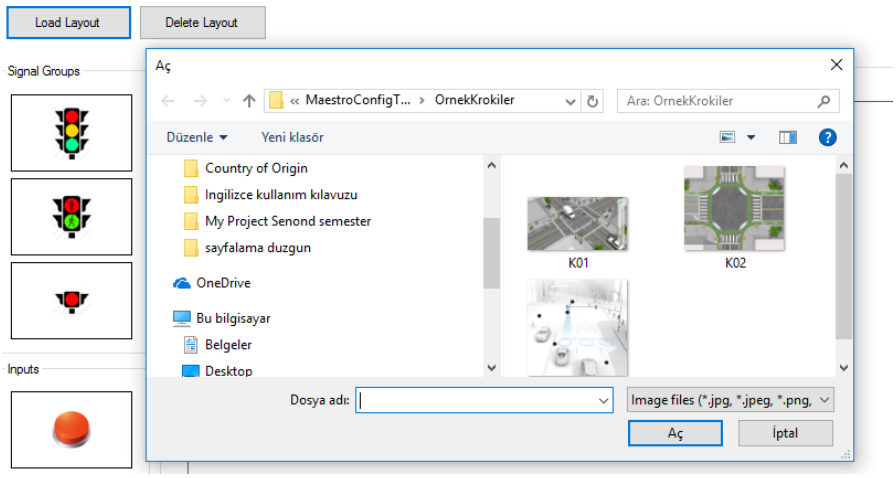



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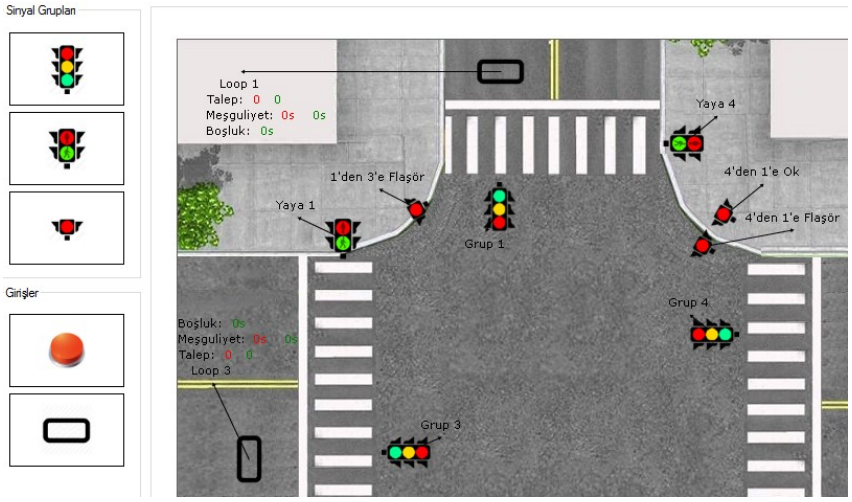
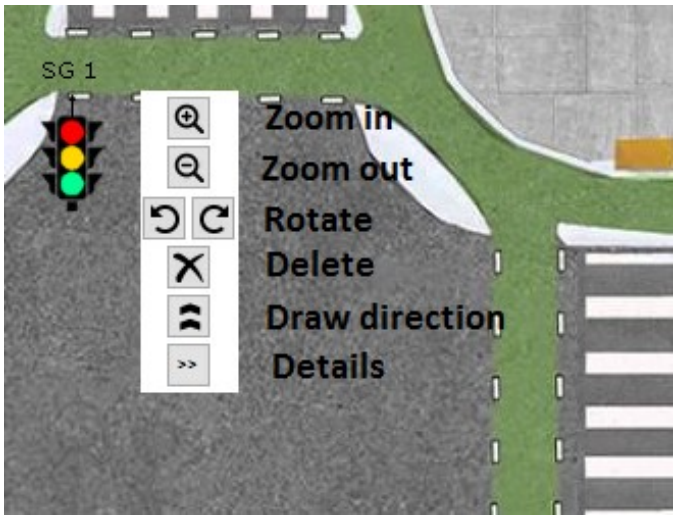



When you click the signal group icon, a panel which includes several features will be open.




In order to change some necessary information, click the “Details” part.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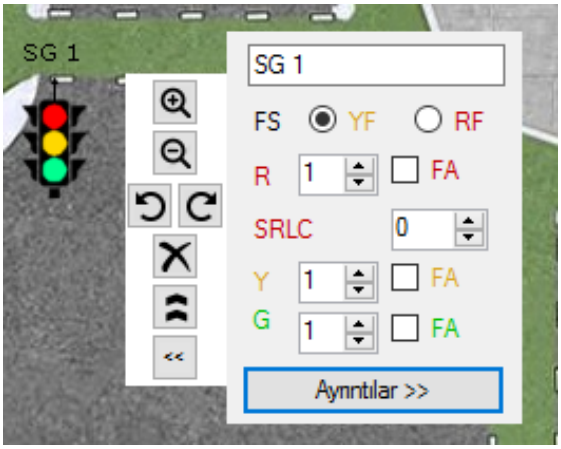


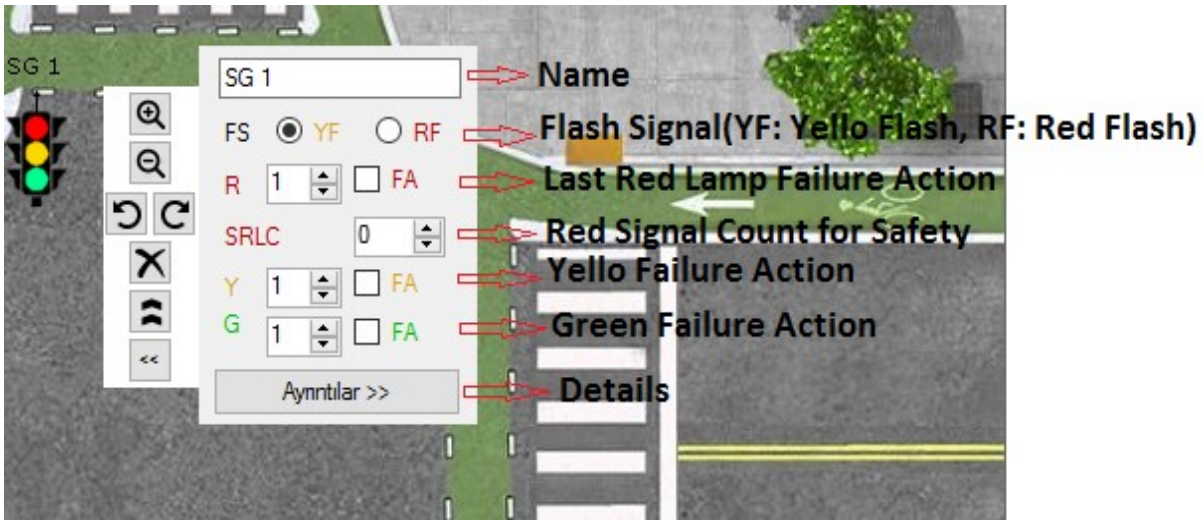


For opening advanced settings click “Details >>” button.


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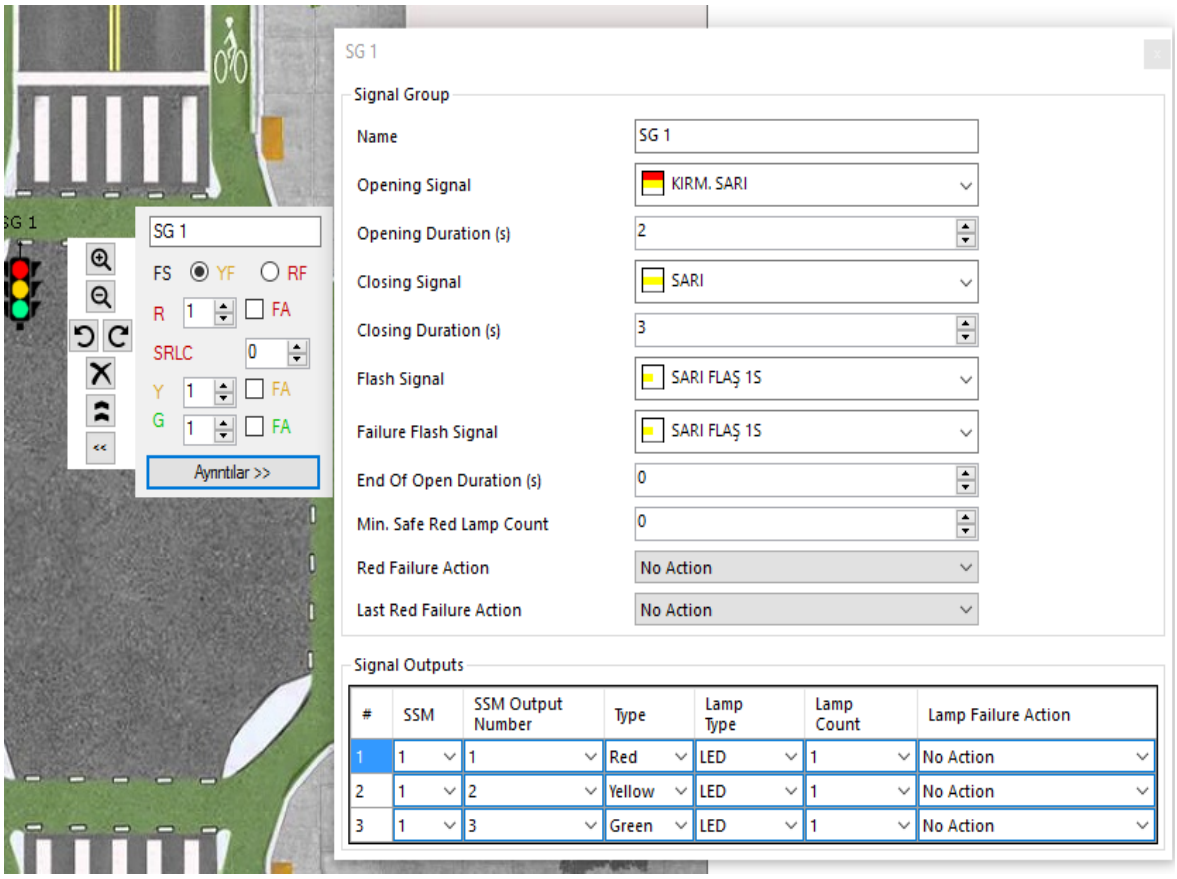


## 3.2 Inputs

In this part input devices to be connected to the maestro intersection controller are defined. Adding a new input is accomplished via drag and dropping of related icon over intersection layout. A maximum of 32 digital and 32 loop inputs can be defined. The signal group the input is assigned to, is important, because requests received from the inputs are


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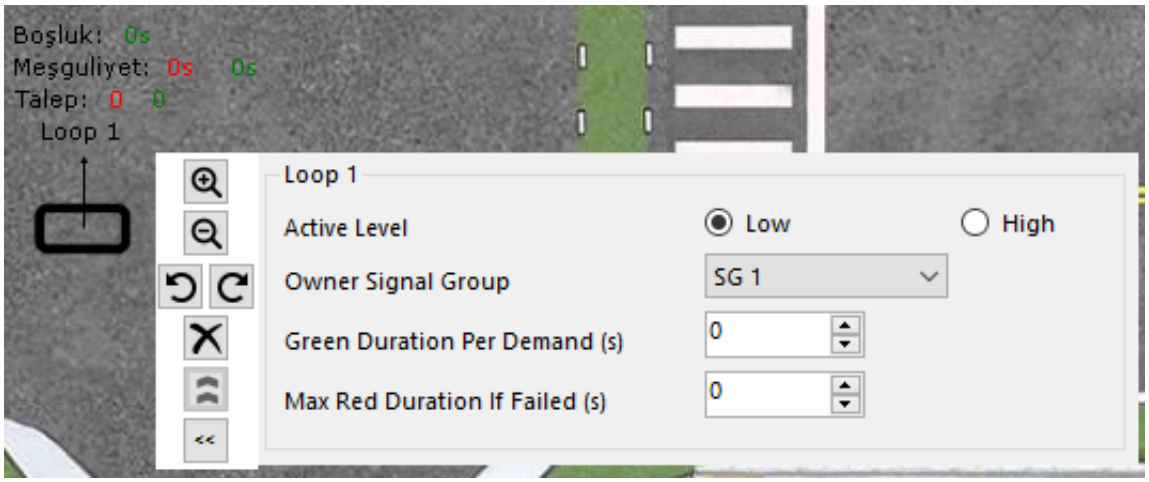
evaluated differently dependent on the current color of the assigned signal group.

Digital inputs 6, 7 and 8 can't be used in program as they are used for heater, lamp dimming and police button purposes respectively.



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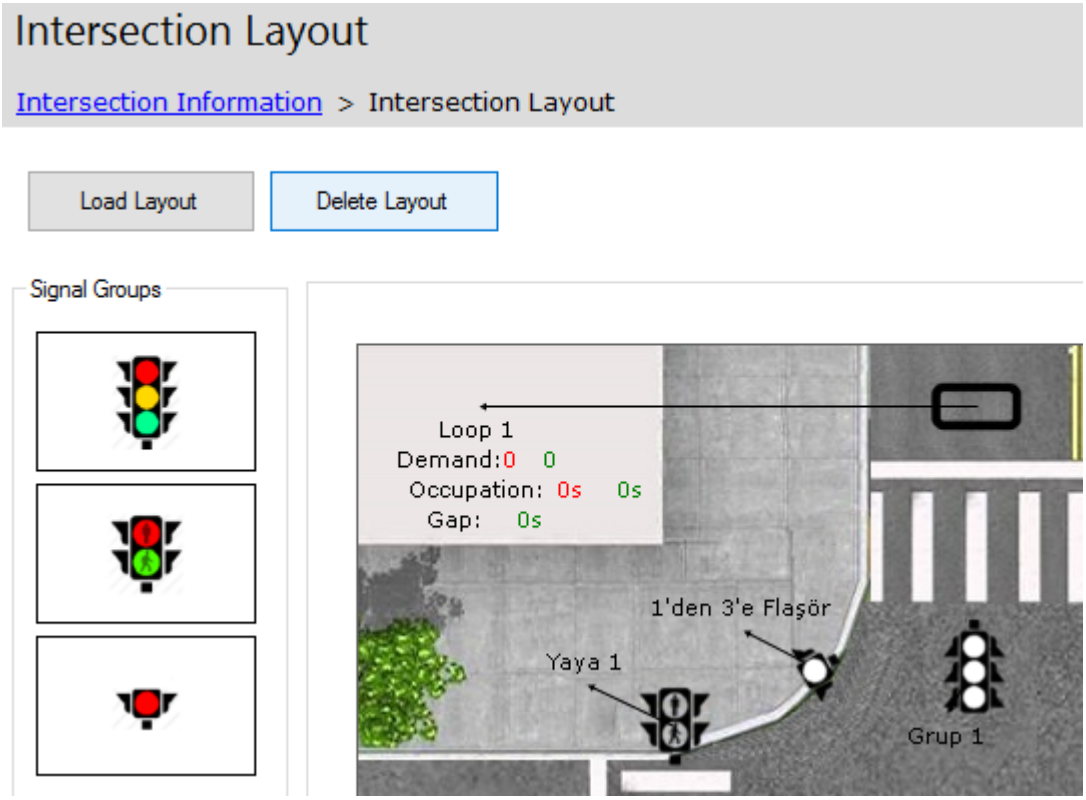
## 3.3 Delete layout

For deleting, click “Delete layout” button.





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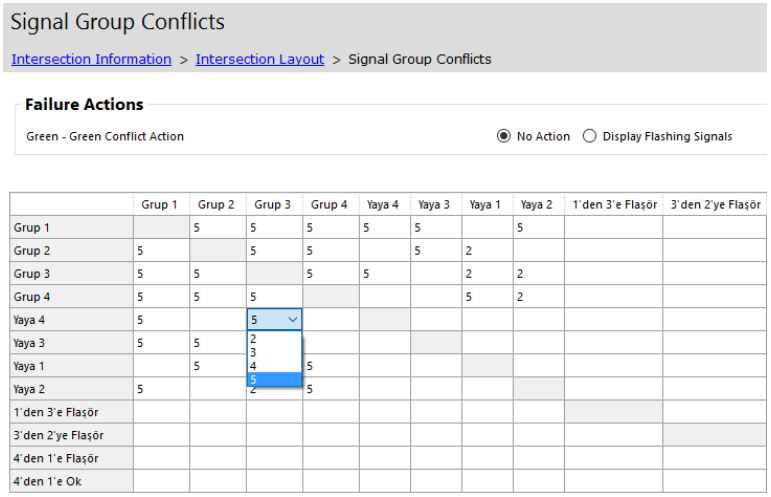
# 4. Signal Groups Conflicts




| | Grup 1 | Grup 2 | Grup 3 | Grup 4 | Yaya 4 | Yaya 3 | Yaya 1 | Yaya 2 | 1'den 3'e Flaşör | 3'den 2'ye Flaşör |
|---|---|---|---|---|---|---|---|---|---|---|
| Grup 1 | | 5 | 5 | 5 | 5 | 5 | | 5 | | |
| Grup 2 | 5 | | 5 | 5 | | 5 | 2 | | | |
| Grup 3 | 5 | 5 | | 5 | 5 | | 2 | 2 | | |
| Grup 4 | 5 | 5 | 5 | | | | 5 | 2 | | |
| Yaya 4 | 5 | | 5 | | | | | | | |
| Yaya 3 | 5 | 5 | 2 3 4 5 | | | | | | | |
| Yaya 1 | | 5 | | 5 | | | | | | |
| Yaya 2 | 5 | | 2 | 5 | | | | | | |
| 1'den 3'e Flaşör | | | | | | | | | | |
| 3'den 2'ye Flaşör | | | | | | | | | | |
| 4'den 1'e Flaşör | | | | | | | | | | |
| 4'den 1'e Ok | | | | | | | | | | |

This matrix is called the conflict matrix. Its columns represent the closing, its rows the opening signal groups. The durations in the conflict matrix also determine the transition times between the states in phase operation mode. Using this duration, the controller automatically calculates the state transitions and creates the signal plan. When conflict matrix is active, we can let conflicts happen between minimum 2 and maximum 5

second. For example, when user select 2, after 2 second failure action will happen.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### 4.1 Failure Actions

"Green-Green Conflict" selected by user, if "Display flashing signals" choice is selected controller device will change all signal groups mode to flash.

## 5. Signal Sequences

The Maestro intersection controller supports operation according to two different traffic technologies. One of these is the sequence (step) method. In this method, the signals to be displayed by the controller or completely user controlled. The user can select the color of each group in each step from previously defined signals.


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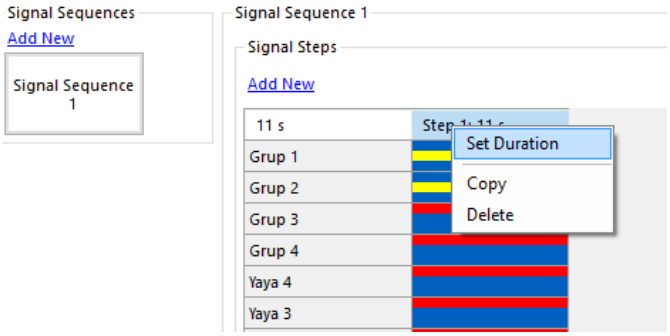
In the sequence method, the user adjusts the signal of each step and group with the mouse. Multiple selections are possible. By right-clicking on the selected cell the required signal can be chosen from the defined signals. The step durations can be adjusted via drag and drop by mouse or right-click on the related column.




- ✓ *Add Signal Sequence*: Click on "Add New" button.
- ✓ *Copy Signal Sequence:* Right click on "Signal Sequence" and click "Copy". The signal sequence that user right clicked on it will be copied with all details
- ✓ *Delete Signal Sequence:* Right click on "Signal Sequence" button and click "Delete"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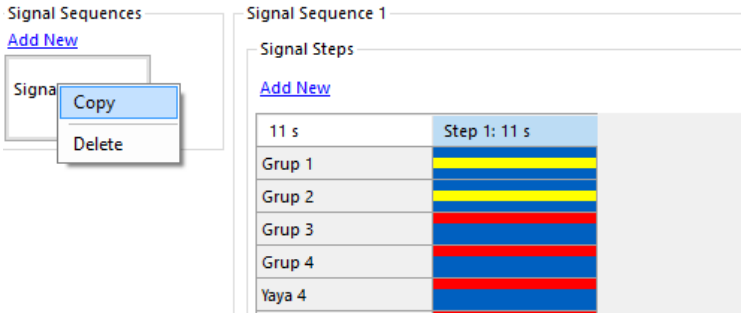


# 6. Phases

## 6.1 Phases

The second operation method of the Maestro intersection controller, from the viewpoint of traffic technology, is the phase operation method. In this method those parts of the signal program being prepared, where the signal groups are only including closed (red) or open (green) are called phases. User should select signal groups related to every phase, the selected signal groups show open signal and those that not selected will show closed signal. In the same page, minimum and maximum duration of the phase is also entered.


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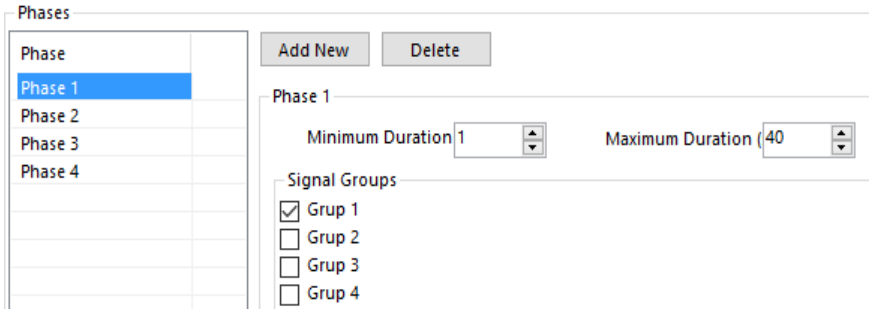


Minimum duration: Minimum duration which should be run by phase

Maximum duration: Maximum duration which should be run by phase

Signal Groups: List of all defined signal groups, user should select and assign for each phase

For adding new phase user can click “Add New”. In the same way for deleting, select any phase and click “Delete” button. Maximum 16 phases can be defined.


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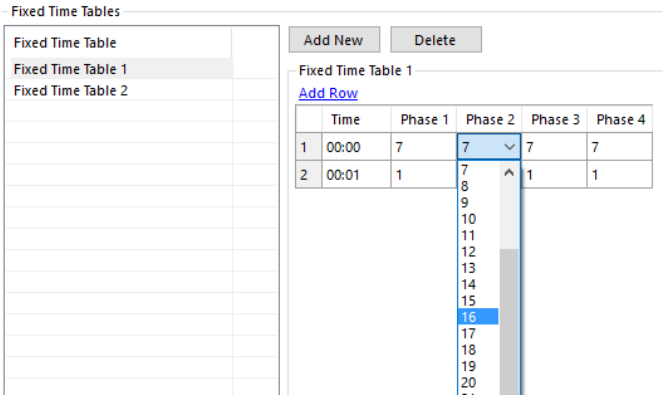
## 6.2 Fixed Time Tables




The fixed time table menu is only meaningful for phases and not used with sequences. If the duration of phases shall change at certain times during the day, the durations requested at these hours are defined in the fixed time tables. A maximum of 8 fixed time tables can be defined. No value lower than the minimum phase duration can be entered into the fixed time tables.

- ✓ *Add Row*: Using "Add Row "button a maximum of 16 entries can be entered to a fixed time table. Hours and minutes in the entry are adjusted by mouse click. The first entry must have 00:00 as time value.
- ✓ *Delete Row*: Right click on any row and click "Delete Row", the related row will be deleted.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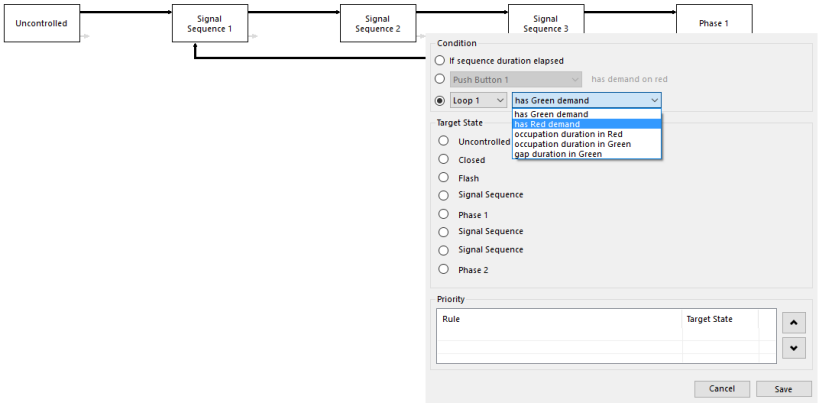
- ✓ *Add Fixed Time Table:* Click on “Add New” button.
- ✓ *Delete Fixed Time Table:* Click on any “Fixed Time Table” menu on the left side and then click “Delete” button.

## 7. Signal Programs

How the signal plans in the controller shall be processed is determined by programs. Programs are assembled from sequences, phases or both sequences and phases.



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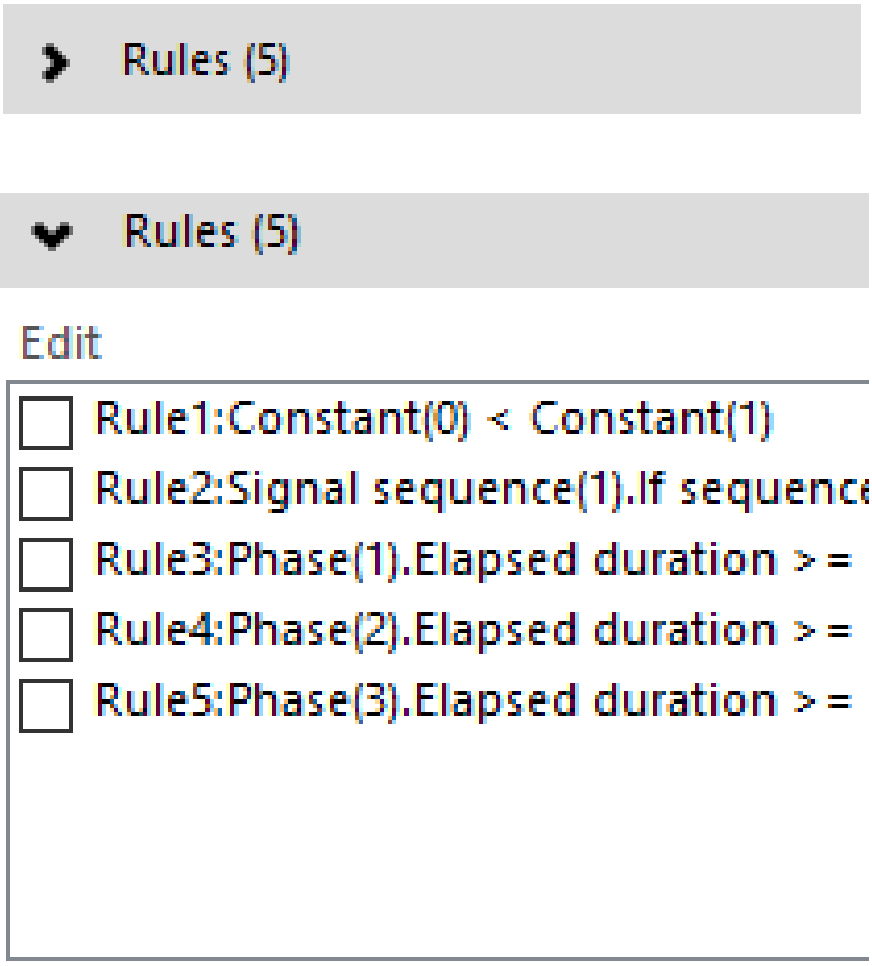
After adding transition between defined phases and sequences, related rules will be added automatically and showed in the top-right part of the page.




Desired rule can be selected from rule list then “Edit” button should be clicked for editing.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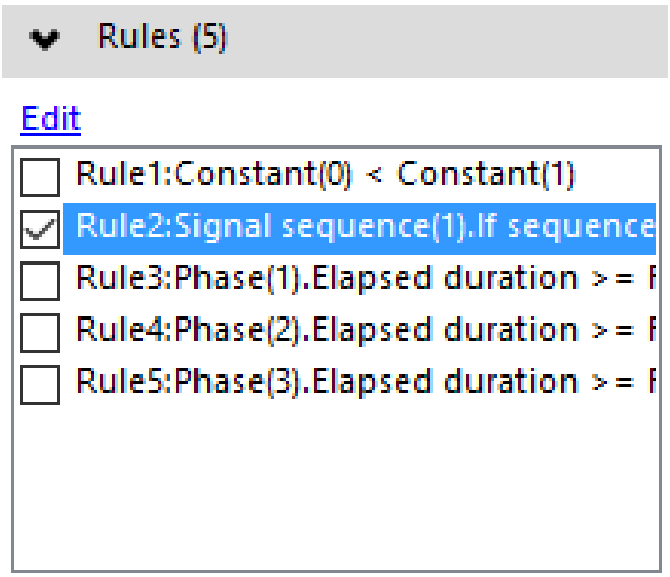
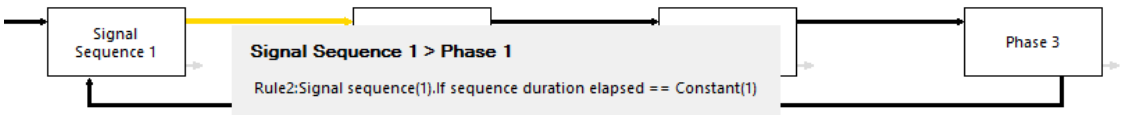



Rule number and its expression can be learned by moving the mouse over transition lines as follows:




Rules works according to the contents of related expressions, expression for every rule can be selected from the expression list: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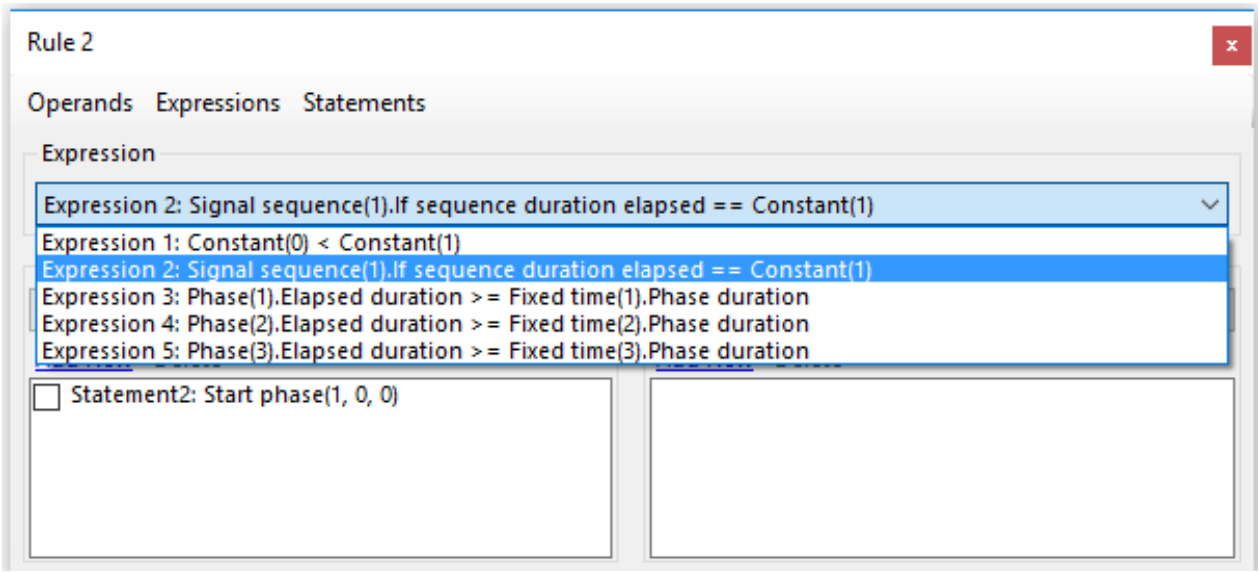


If the expression list does not include desired expression; “Expressions” button can be clicked for adding new expressions. For adding new expressions, you may need new operands and it can be added by clicking “Operands” button as follows:


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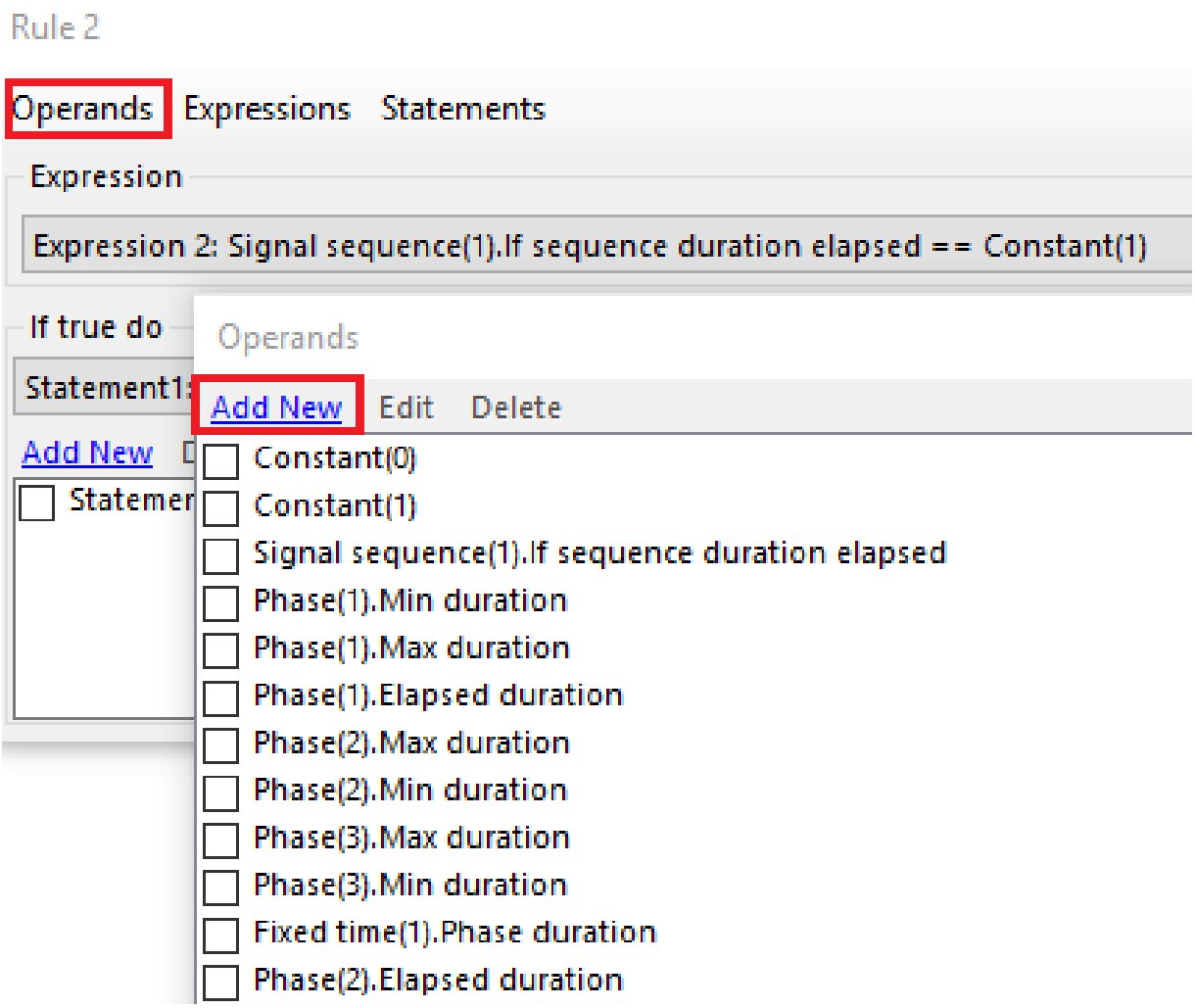


After selecting operand type, data and function; by closing operand window new can be added to the operand list.


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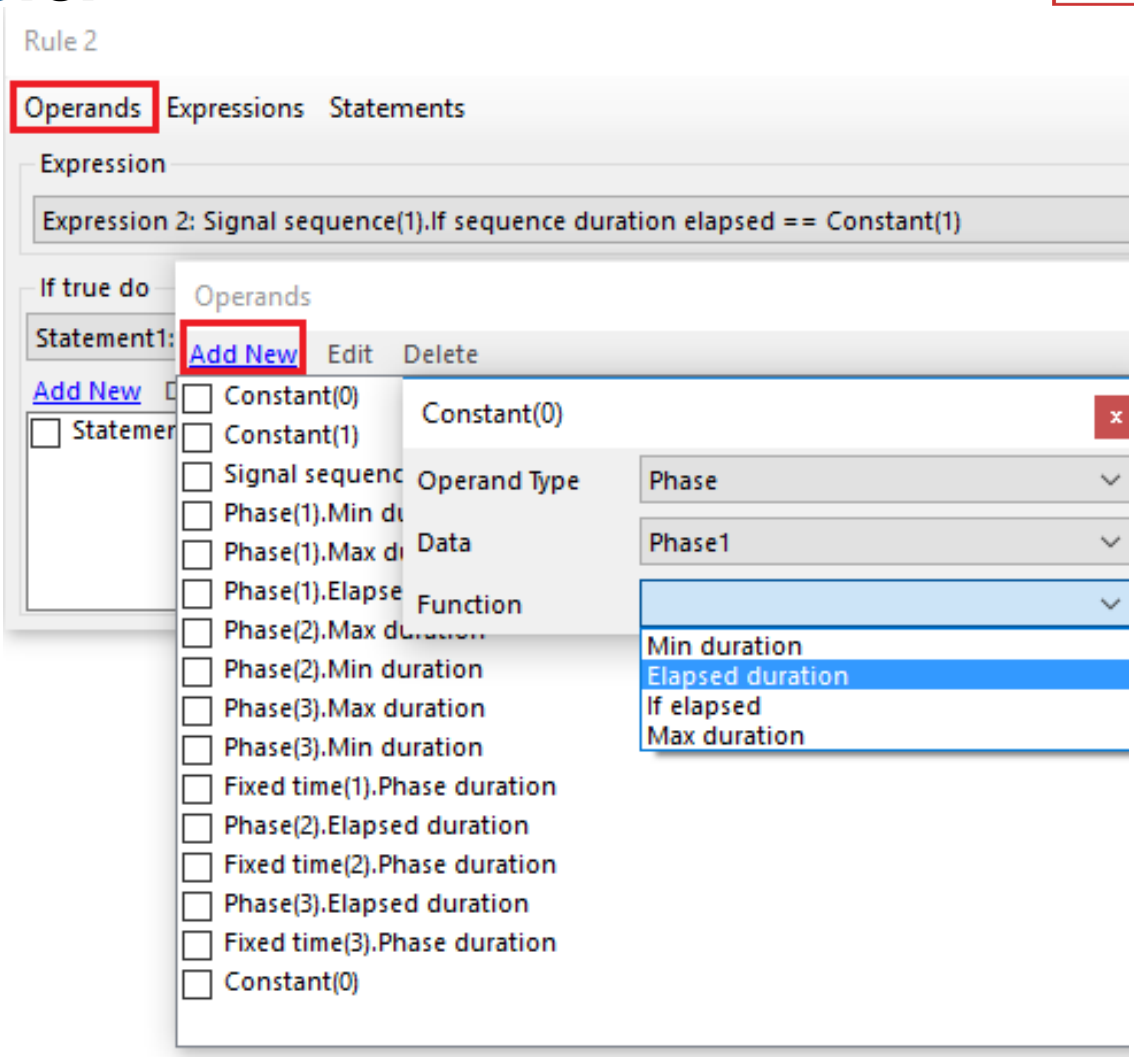


After selecting proper parameters and operation, new expression will be added.


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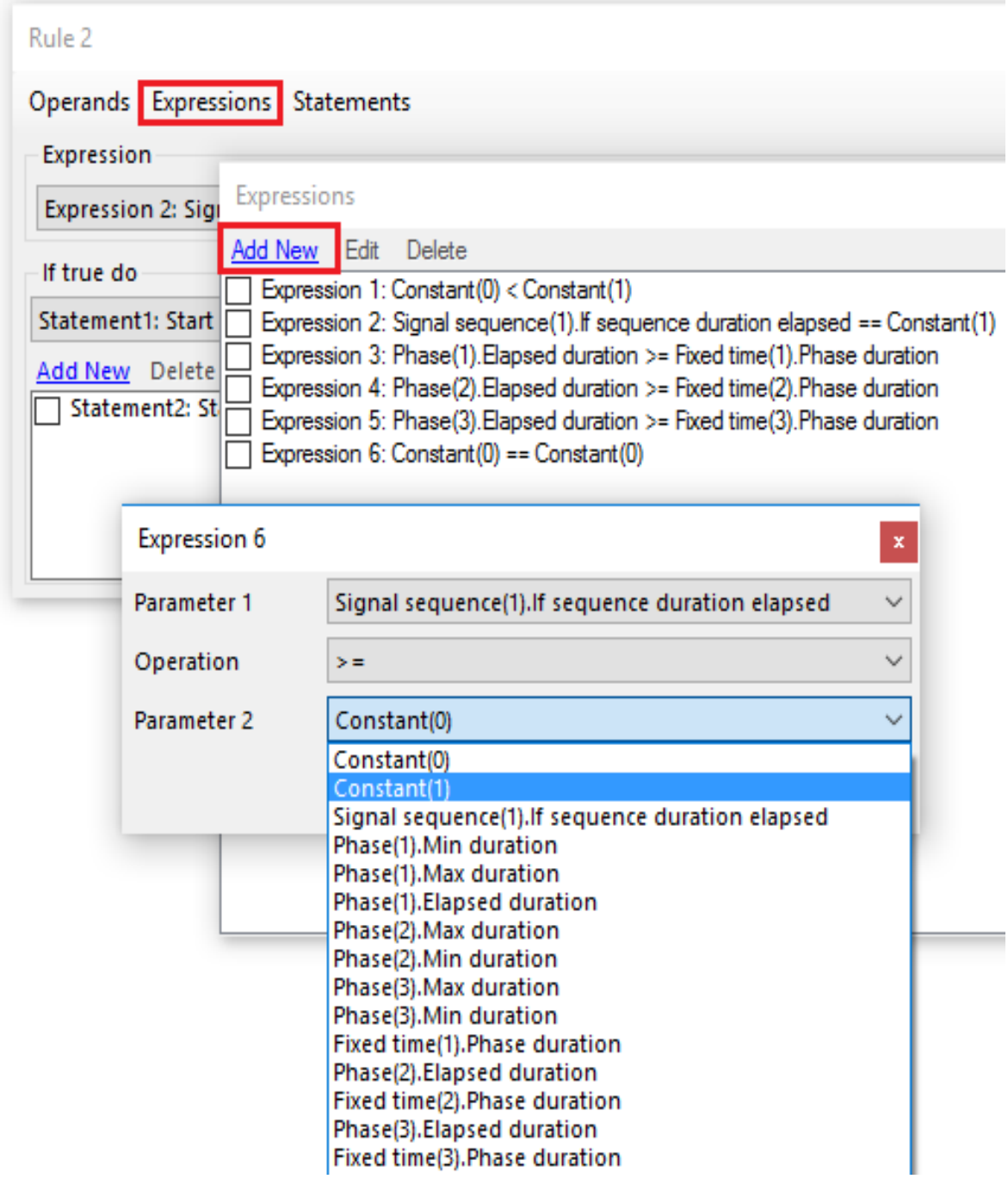



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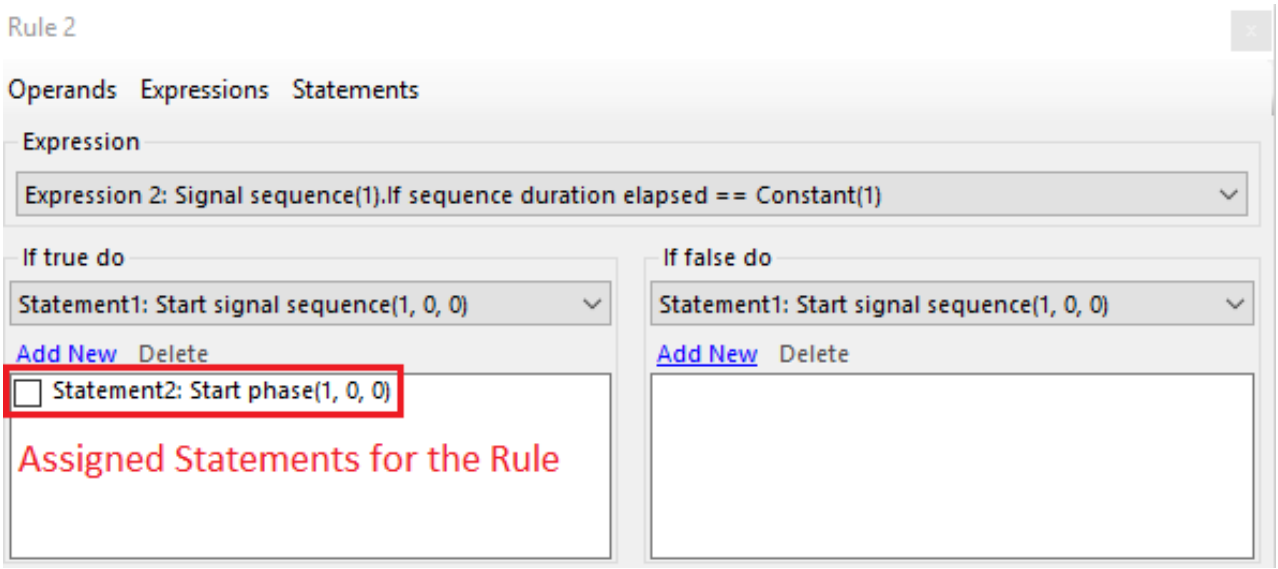
In the Rule window related statements list also can be updated or any new statement can be added. The dropdown list shows all statement list in the signal program. Assigned statement for a rule shows at the left bottom part of the window.

Any statement can be selected from dropdown list and after clicking “Add New” button, selected statement will be assigned to rule.





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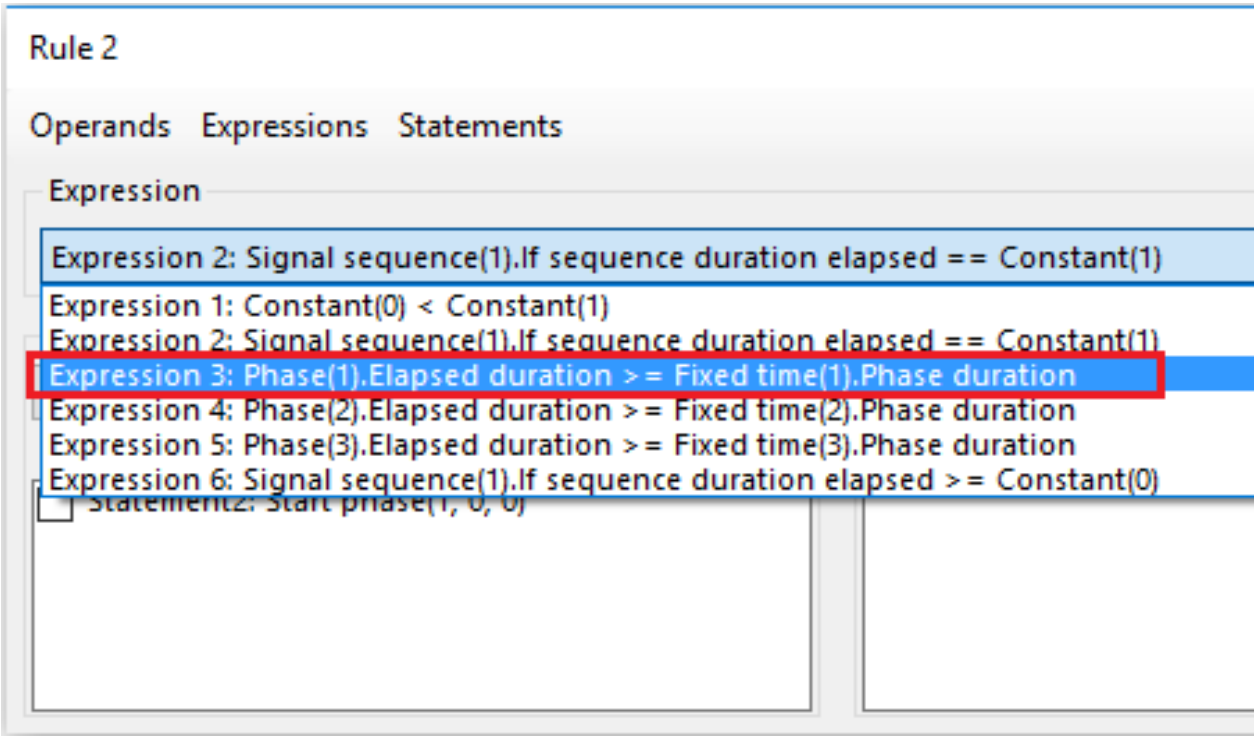


If automatically added statements by program is not enough and it is needed to add new statements, “Statements” then “Add New” buttons should be clicked as follows:


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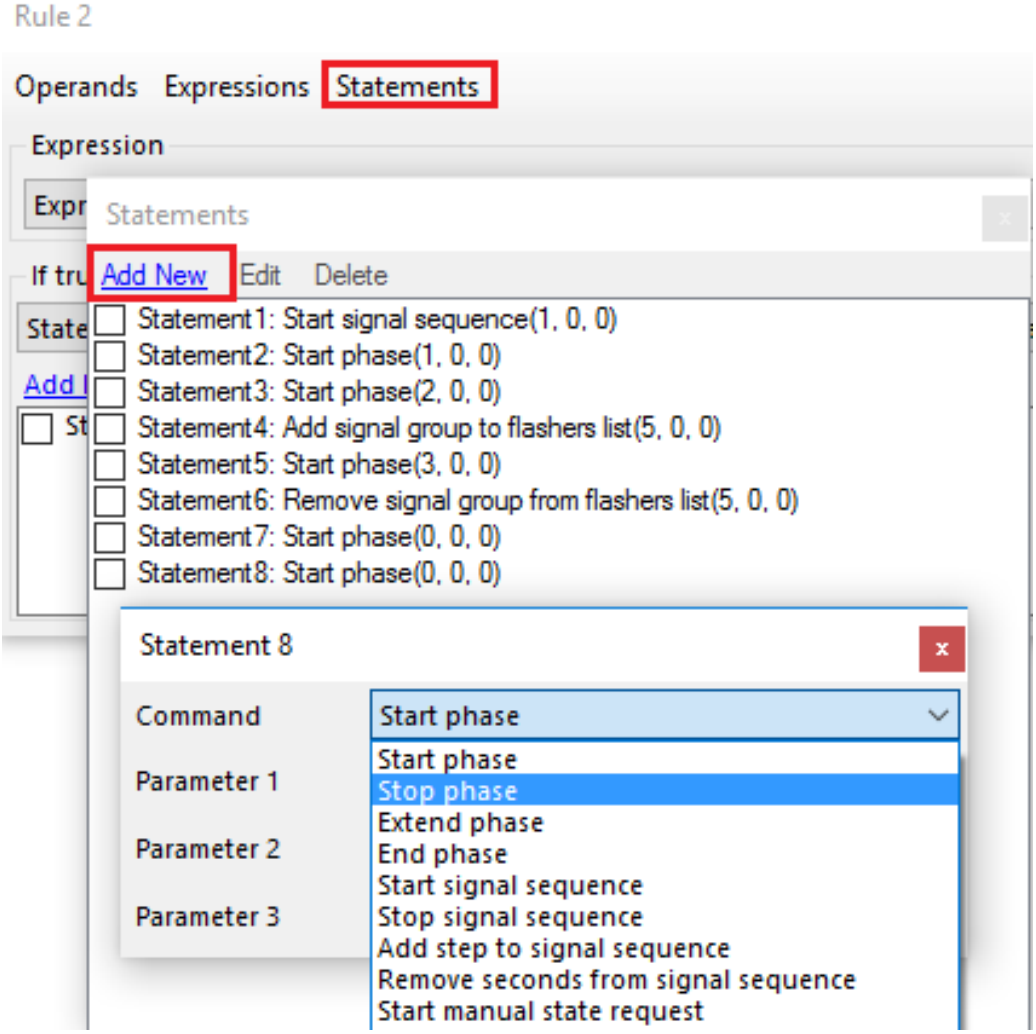


## 8. Program Simulation

Select program number, fixed time table and fixed time table row then click “Start” button. Simulation should work according to created program. Transition states, rules, sequences and phases durations display in program simulation page.


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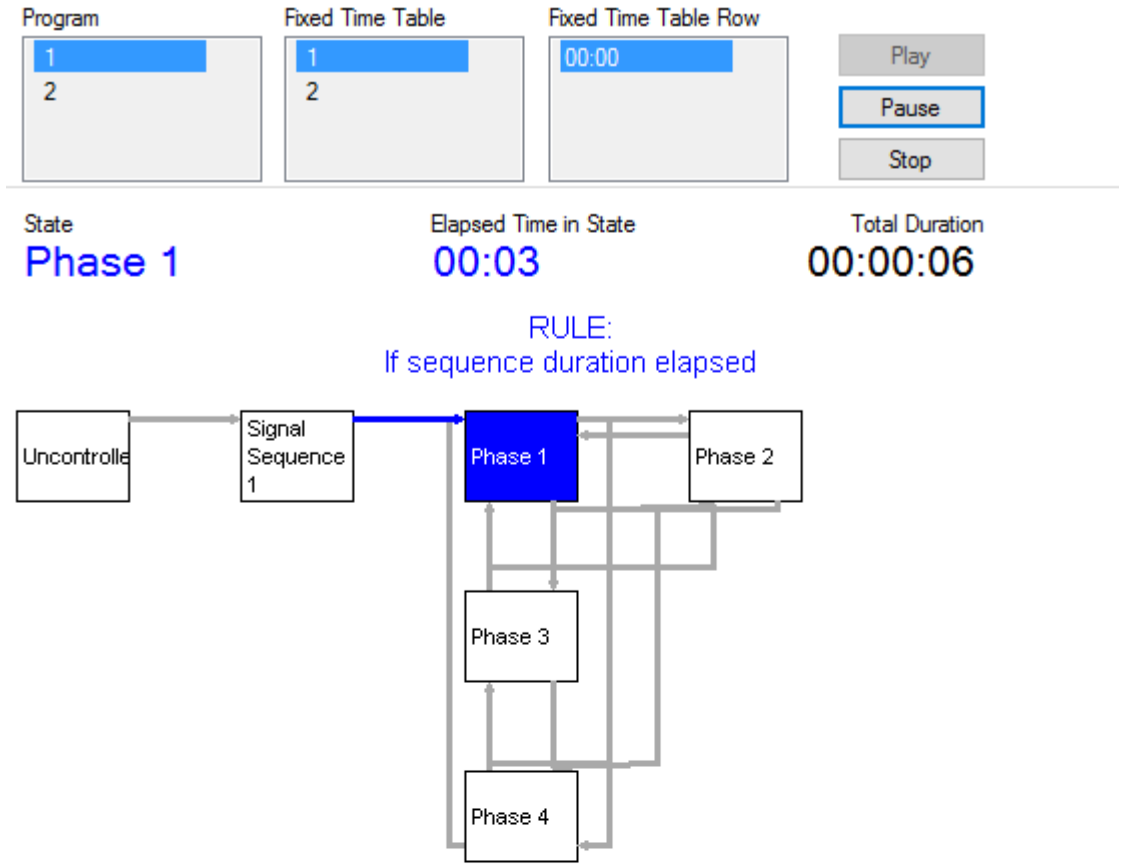


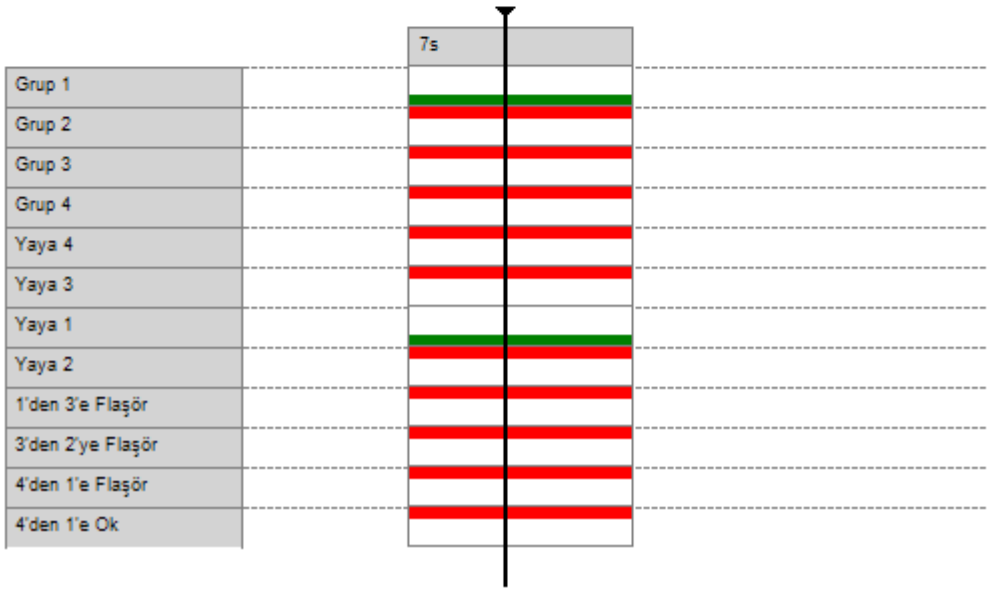




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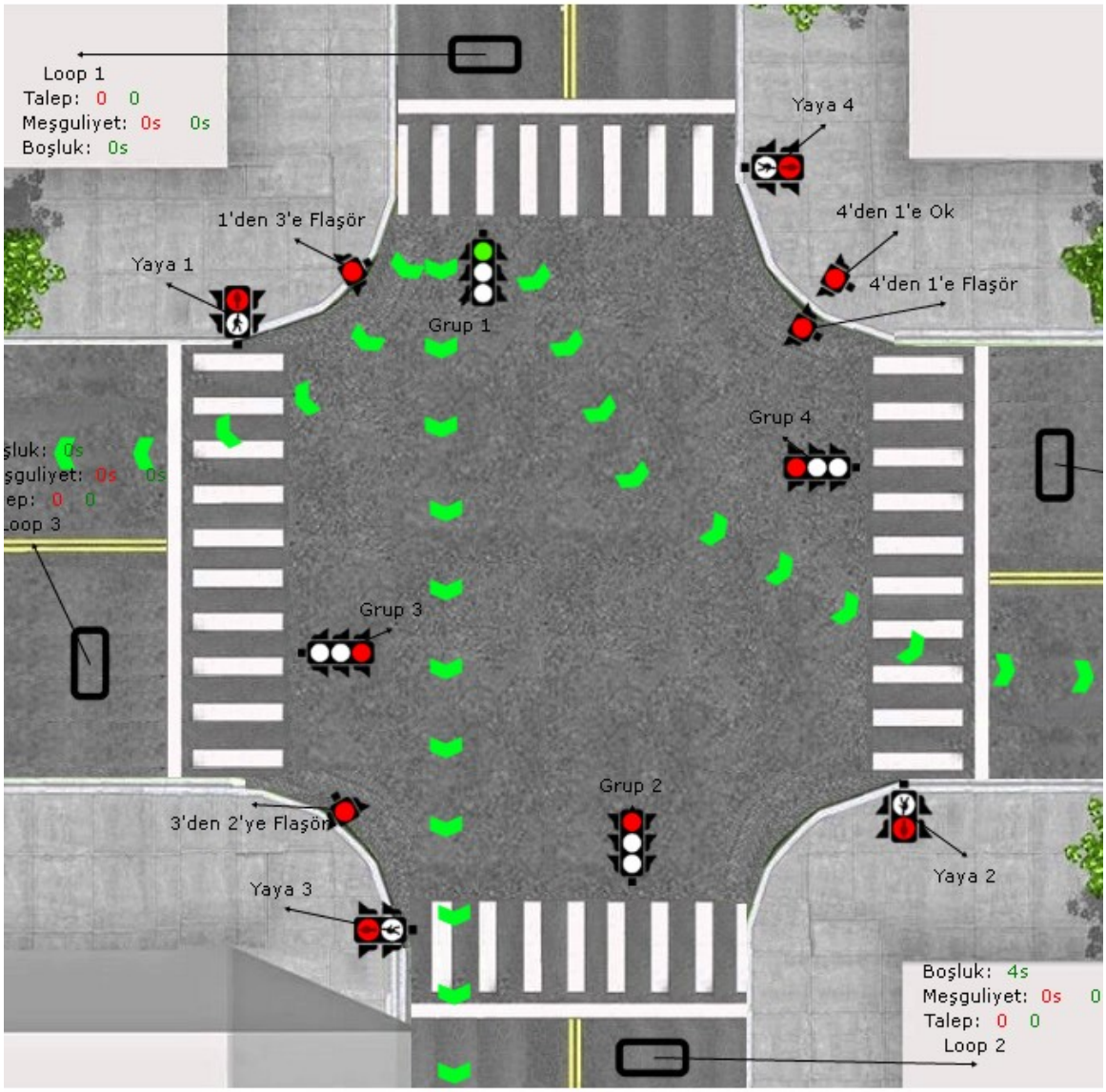
For giving a digital or loop input, click the related defined icon and observe the simulation according to given input.



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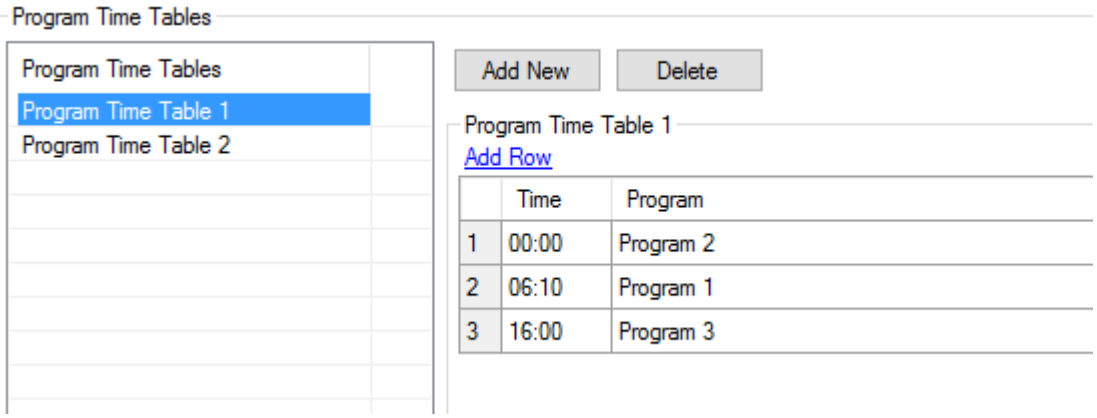
## 9. Program Time Tables

Program time tables determine between which times of the day the prepared programs shall work. A maximum of 20 program time tables can be created. The purpose is to have the controller work with different programs on different days of the week. Different tables can also be created for official and religious holydays. This tables will be used in the working schedule menu.




- ✓ *Add Row*: Using the "Add Row" button a maximum of 16 entries can be entered to a program time table. Hours and minutes in the entry are adjusted by mouse click. The first entry must have 00:00 as time value.
- ✓ *Delete Row:* Right click on any row and click "Delete Row", the related row will be deleted.
- ✓ *Add Program Time Table*: Click "Add New" button.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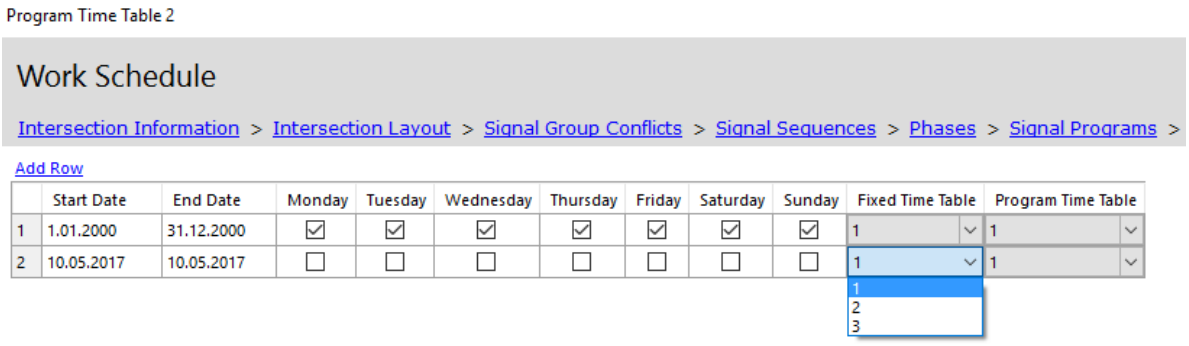
- ✓ *Delete Program Time Table*: Select any "Program Time Table" menu on the left side and then click "Delete" button.

## 10. Work Schedule

The work schedule determines how controller shall work dependent on certain dates of the year or days of the week. Due to this window, the controller can be programmed specially to run according to the days of the week, official and private holidays, winter and summer months with different signal plans.

Using the "Add Row" button a maximum of 16 working schedule entries can be created. For each entry, a selection from the previously prepared fixed time tables and program time tables is made.



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