TeslaSCADA IDE User Manual

Version 2.04

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About TeslaSCADA IDE

TeslaSCADA IDE is an integrated development environment used for configuring, developing and managing HMI/SCADA applications. In this manual you will find everything you need to create a full-featured SCADA (Supervisory Control and Data Acquisition) project visualization. With this tool you can create and manage TeslaSCADA projects, configure connections with devices, enter tags, alarms, and trends.

A simple to use interface allows for easy manipulation of the project's configuration and data processing. The project data are stored in a single file (based on xml) for easy backup and restoration.

TeslaSCADA IDE has an integrated GUI (Graphical User Interface) visualization editor for easy creation of professionally looking graphics.

Requirements

TeslaSCADA IDE requires Windows, Mac OS or Linux operating systems.

Windows

Processors: Intel Pentium 4, Intel Centrino, Intel Xeon, or Intel Core Duo (or compatible) 1.8 GHz minimum.

Operating systems: Windows 8 (Modern UI (i.e. Metro Mode) is not supported), Windows 7, Windows Vista, Windows XP (not recommended but supported).

Memory: 512MB of RAM (1 GB recommended).

Disc Space: 256MB of free disc space.

Mac OS

Processors: Dual-Core Intel, PowerPC G5

Operating systems: 10.7.3 or greater

Memory: 512MB of RAM (1 GB recommended).

Disc Space: 256MB of free disc space.

Linux

Processors: Intel Pentium 4, Intel Centrino, Intel Xeon, or Intel Core Duo (or compatible) 1.8 GHz minimum.

Operating systems: Ubuntu 10.4 + gtk2 2.18+

Memory: 512MB of RAM (1 GB recommended).

Disc Space: 256MB of free disc space.

Media: You must install the following in order to support AAC audio, MP3 audio, H.264 video, and HTTP Live Streaming:

libavcodec52 and libavformat52 on Ubuntu Linux 10.04, 10.10, 11.04 or equivalent.

libavcodec53 and libavformat53 on Ubuntu Linux 11.10, 12.04 or equivalent.

Installation

Windows

To install TeslaSCADA IDE download EXE package for your operating system. Run installation file and go through installation procedure.

Mac OS

To install TeslaSCADA IDE download DMG package for your operating system. DMG package provides a simple drag-and-drop installation experience.



Linux

To install TeslaSCADA IDE download RPM package for your operating system. By default RPM package will install the application to /opt, add a shortcut to the application menu. RPM package does not have any UI for installation (normal behavior for Linux

Start TeslaSCADA IDE

After opening the application you will see the start screen. Look at the picture below to briefly get to know the TeslaSCADA IDE interface:



Main menu

File - manipulation with project files.

Edit - manipulation with objects (cut, copy, paste and etc.).

Arrange - arrange manipulation with objects (align, rotate and etc.).

Project - possibility to create new objects of the project, change its properties and run/stop simulation.

Language - possibility to change language of the interface.

Help - opens the help menu

Toolbar

The toolbar consists of the following functions:

/

- **New project** creates a new project.
- **Open project** opens an existing project.
- Save saves your project.
- Save as saves your project with a new name.
- **Properties** properties of your project.
- **Snap to Grid –** ON/OFF snap to grid.
 - **New object –** creates a new graphical object.
 - Run simulation start simulation of your project.
 - **Stop simulation** stop simulation of your project.
 - **Cut** cut selected object(s).
 - **Copy** copy selected object(s).
 - **Paste** paste selected object(s).
 - **Undo** undo the last operation.
 - **Redo** redo the last operation.
 - Send to Back send to back selected object.
 - Bring to Front bring to front selected object.
 - Align Left align to the left side the selected objects.
 - Align Center align the vertical center of the selected objects.
 - Align Right align to the right side the selected objects.
 - Align Top align on top of the selected objects.
 - Align Middle align the horizontal center of the selected objects.
 - Align Bottom align to the bottom of the selected objects.
 - **Space Horizontal** align the horizontal spacing between the selected objects.
 - Space Vertical align the vertical spacing between the selected objects.
 - **Rotate Clockwise** rotate clockwise selected object(s).
 - Rotate CounterClockwise rotate counterclockwise selected object(s).
 - Group Objects group selected objects.
 - **Ungroup Objects** ungroup selected objects.

Project window

Project window contains all the information about the project and consists:

Screens - contains all screens of the project.

Scripts - contains all scripts of the project.

Servers - contains all servers of the project.

Tags - contains all tags of the project.

Users - contains all users of the project.

Screen window

Screen window contains all objects of the current screen.

Status bar

Status bar contains information about path of the current project, information about selected object (x,y coordinates and dimension) and information about run or not simulation mode.

Canvas

Place for the design screen or script.

Create project

To create a new project TeslaSCADA IDE must be started.

1. Click on the **New** icon in the toolbar or use the command *New* from the main menu *File*. You'll see the following window:

• • •	Create Project		
General Events/History (OPC UA Certificate		
Project name:	NewProject		
Author:	Administrator		
Start screen:			•
Update interval(ms):	1000		
Screen dimensions:	800	x	600
Runtime differs			
Screen dimensions:	800	х	600
Description:			
	OK		Cancel
	UK		Cancel

2. On the *General* tab:

2.1. In the *Project name* enter the name of the project.

2.2. In the *Author* write the author of the project if you want.

2.3. When you create a new project the *Start screen* combobox is empty. You can choose the start screen after creating screens of the project.

2.4. In the *Update interval(ms)* enter update interval of the project. It's an interval of updating objects of the current screen.

2.5. Enter default dimensions of your design screen in the Screen dimensions fields.

2.6. If the screen dimensions of you target device differs check *Runtime differs* and enter its *Screen dimensions*.

2.7. Optionally, specify a meaningful *Description* yet

3. On the *Events/History* tab:

3.1. Select the time period during which data will be stored in databases in the *Storage DB period* combobox.

3.2. Enter databases names in the *Events DB name* and *History DB name*. If you choose the simple names like *events* or *history* application will create SQLite database in the

application directory. If you choose names beginning with **jdbc:mysql:** like *jdbc:mysql://192.168.0.104:3306/test* the application will connect to MySQL database and create events or history table. *Don't create big MySQL databases for connecting from Android devices* (MySQL databases need a wide network bandwidth for sending and receiving data).

3.3. Enter Username and Password if you use MySQL database.

3.4. Enter *Notifications(Priority<)*. Events with a priority lower than this will be notified about it by using the pop-up window and sound.

4. If you use OPC UA server in your project on the *OPC UA certificate* tab enter *Name* of used/created certificate and *Period(days)* of validation if you create certificate. The certificate stored in the *{app}/private* directory.

Save project

To save project:

1. Click on the **Save** icon in the toolbar or select the menu item *File* and *Save*. The first time you save a new project, you will be asked for a location.

2. Now select the location and click the button Save (TeslaSCADA project extension .tsp2).

Open project

To open project:

1. Click on the **Open** icon in the toolbar or select the menu item *File* and *Open*.

2. Now select the project and click Open (TeslaSCADA project extension .tsp2).

Edit project properties

To edit project properties:

1. Click on the **Properties** icon in the toolbar or select the menu item *Project* and *Properties*.

Screens

Create screen

To create a new screen select the menu item *Project* and *New Screen* or choose **Screens** on the **Project Window,** click right button on it and choose *New Screen* item.

You'll see the following window:

- 1. In the **Name** enter the name of the screen.
- 2. Optionally, specify a meaningful Comment.
- 3. Choose **Background** color.
- 4. Select Screen type: General or Popup.
- 5. Add Collection of Scripts for this screen if you want.
- 6. Enter Screen dimension.



Open screen

To open screen:

1. Right click on the screen you want to open and choose Open item.

or

2. Double click on the screen you want to open.

Copy screen

To copy screen:

1. Right click on the screen you want to copy and choose Copy item.

Delete screen

To delete screen:

1. Right click on the screen you want to delete and choose Delete item.

Edit screen properties

To edit screen properties:

1. Right click on the screen you want to edit and choose Screen properties item.

Export screen

To export screen:

- 1. Right click on the screen you want to export and choose Export screen item.
- 2. Now select the location and click the button Save (TeslaSCADA screen

extension .tsp2screen).

Import screen

To import screen:

- 1. Right click on the screen window and choose Import screen item.
- 2. Now select the screen file and click Open (TeslaSCADA screen extension .tsp2screen).

Servers

Create server

To create a new server select the menu item *Project* and *New Server* or choose **Servers** on the **Project Window,** click right button on it and choose *New Server* item. Choose server you want to add to your project.

Project	Lang	juage	Help		New Server 🔹 🕨	Modbus	۸îM
New Scree	en	~:W		n (2	Copy Server	Siemens	ATS
New Serve	ər	•	Modbus	^ 11 M		Allen Bradley	٨ûA
New Scrip	t	~:S	Siemens	^ î S	Conver properties	000	
New Tag		ът	Allen Bradley	^ û A	Server properties	OPC UA	^ 8 O
New User		ът	OPC UA	^ î O			
New Object	ct	~:0					
Run simula	ation	~F11					
Properties	;	¬zΡ					

Modbus server

To create a new Modbus server select the menu item *Modbus*. You'll see the following window:

- 1. In the Name enter the name of the Modbus server.
- 2. Write IP address or DNS in the IP or DNS field.
- 3. Enter Modbus server port in the Port.
- 4. Define the polling interval of the server in the **Poll interval** field.
- 5. Choose communication protocol in the Type.
- 6. Choose Request type:



- Maximum registers - if you choose this type the

application during polling will send maximum modbus pointers in 1 polling request.

- *Consecutive registers* - if you choose this type the application during polling will send only consecutive modbus pointers in 1 polling request.

- *1 pointer registers* - if you choose this type the application during polling will send only registers used by 1 pointer in 1 polling request.

7. Check **RTU via TCP(UDP)** if you user Modbus converter from serial into TCP(UDP) protocol.

8. Check Without function 6 if your controller doesn't support Modbus writing function 6.

Siemens server

To create a new Siemens server select the menu item *Siemens*. You'll see the following window:

- 1. In the **Name** enter the name of the Siemens server.
- 2. Write IP address or DNS in the IP or DNS field.
- 3. Enter Siemens server port in the Port.
- 4. Define the polling interval of the server in the **Poll** interval field.
- 5. Choose type of the Siemens PLC in the **Controller type**.
- 6. Enter rack number in the **Rack** field.
- 7. Enter slot number in the **Slot** field.

● ○ ○ S	erver properties
Name:	SiemensServer2
IP or DNS:	192.168.0.101
Port:	102
Poll interval:	1000
Controller type:	User-defined 🔹
Rack:	0
Slot:	0
	OK Cancel

Allen Bradley server

To create a new Allen Bradley server select the menu item Allen Bradley. You'll see the following window:

- 1. In the Name enter the name of the Allen Bradley server.
- 2. Write IP address or DNS in the IP or DNS field.
- 3. Enter Allen Bradley server port in the Port.
- 4. Define the polling interval of the server in the **Poll** interval field.
- 5. Choose type of the Allen Bradley PLC in the Controller type.
- 6. Enter PLC's cpu slot number in the **CPU slot** field.
- 7. Enter PLC's ethernet slot number in the **Ethernet slot** field.

OPC UA server

To create a new OPC UA server select the menu item OPC UA. You'll see the following window:

- 1. In the **Name** enter the name of the OPC UA server.
- 2. Write OPC UA server address in the URI field.
- 3. Define the polling interval of the server in the **Poll** interval field.
- 4. Choose security mode in the Mode.
- 5. Choose security policy in the **Policy**.
- 6. Check Anonymous if you don't use User token.
- 7. Enter Username and Password into relevant fields if you use User token.

Open server properties

To open server properties:

1. Double click on the server properties which you want to open.

2. Right click on the server properties which you want to open and choose Server properties

item.

Copy server

To copy server:

1. Right click on the server you want to copy and choose Copy server item.

Delete screen

To delete server:

1. Right click on the server you want to delete and choose Delete server item.

	Server properties
Name:	ABServer2
P or DNS:	192.168.0.101
Port:	44818
Poll interval:	1000
Controller type:	User-defined 💌
CPU slot:	0
Ethernet slot:	1
	OK Cancel

	Server properties
Name:	OPCUAServer2
URI:	opc.tcp://192.168.0.102:4841
Poll interval:	1000
Mode:	None
Policy:	None 🔻
✓ Anonymous	
Username:	
Password:	
	OK Cancel

Scripts

Create script

To create a new script select the menu item *Project* and *New Script* or choose **Scripts** on the **Project Window**, click right button on it and choose *New Script* item.

You'll see the following window:

- 1. In the **Name** enter the name of the screen.
- 2. Optionally, specify a meaningful Comment.
- 3. Choose **Background** color.
- 4. Select **Script type**: *General* or *Screen*. General script bind to the whole project. Screen script bind to the Screen.
- 5. Enter **Dimension** of the script's design screen.

Open script

To open script:

1. Right click on the script you want to open and choose Open script item.

or

2. Double click on the script you want to open.

Copy script

To copy script:

1. Right click on the script you want to copy and choose Copy script item.

Delete script

To delete script:

1. Right click on the script you want to delete and choose Delete script item.

Edit script properties

To edit script properties:

1. Right click on the script you want to edit and choose Script properties item.

Export script

To export script:

1. Right click on the script you want to export and choose Export script item.

2. Now select the location and click the button Save (TeslaSCADA script

extension .tsp2script).

Import script

To import script:

1. Right click on the script window and choose Import script item.

2. Now select the script file and click Open (TeslaSCADA screen extension .tsp2script).



	Script properties	
Name:	Script0	
Comment:		
Background color:	Light Gray	•
Script type:	General	•
Dimension:	800 X	600
	OK	

Tags

Create tag

To create a new tag select the menu item *Project* and *New Tag* or choose **Tags** on the **Project Window**, click right button on it and choose *New Tag* item.

You'll see the following window:

On the General tab:

- 1. In the **Name** enter the name of the screen. The name should be unique for the project.
- 2. Choose Data type.
- 3. If you select *String* or *Array* data types enter **Number of** elements (letters).
- 4. If you select *String* or *Array* data types choose data type of **1 element** (letter).
- 5. Choose Access mode to the tag: *Read*, *Write* or *ReadWrite*.
- 6. Enter default tag's value into Initial PV.
- In the Input/Output section bind tag to the server's tag. In the PV Input server choose server you want to bind. Then click «...» button to set up server's tag settings or enter it into the PV Input tag.
- 8. If the output server's tag differs from the input server's tag check **Output differs from input** and select **PV Output server** and enter **PV Output tag**.



0001	Tag properties		
General Scaling Alar	ms History		
Name:	Tag0		
Data type:	Boolean 💌		
Number of elements:	10		
1 element:	~		
Access mode:	ReadWrite 💌		
Initial PV:	false		
Input/Output			
PV Input server:	ModbusServer1		
PV Input tag:			
Output differs from Input:			
PV Output server:	ModbusServer1		
PV Output tag:			
	OK Cancel		

Depending on the type of **PV Input server** or **PV Output server** you'll see different server's tag (pointer) settings window:

Modbus tag settings

You'll see the following window:

- 1. Enter **SlaveID** of the modbus device.
- 2. Choose **Point type** of the register.
- 3. Write offset of the register into **Offset**.
- 4. Choose **Data type** of the modbus tag.
- 5. Choose number of **Bit** if the point type is boolean.



Siemens tag settings

You'll see the following window:

- 1. Choose **Storage area** of the siemens tag: *I*,*Q*,*M* or *DB*.
- 2. Write DB number in the **DB**№ field if you choose DB storage area.
- 3. Choose **Data type** of the siemens tag.
- 4. Enter byte number of the area into Byte№ field.
- 5. Choose number of **Bit** if the data type is *Bit*.

AllenBradley tag settings

You'll see the following window:

- 1. Enter Tag name.
- 2. Choose **Data type** of the allen bradley tag.

	Pointer settings	
Storage area:	1	•
DBNº:	0	
Data type:	Bit	•
Byte№:	0	
Bit:	Bit 0	•
	OK Cancel	

	Pointer settings	
Tag name:		
Data type:	BOOL	
	OK	
• • •	Pointer settings	
File type:	Output(O)	Ŧ
File number:	٥	
Element:	0	
Word:		Ŧ
Bit:	none	•
	OK Canad	
	UK Cancel	

Micrologix tag settings

If you choose Micrologix or SLC500 controller type in the Allen Bradley server settings you'll see the following window:

- 1. Choose **File type** of the server's tag.
- 2. Write **File number** in the field.
- 3. Enter **Element** of the servers tag.
- 4. Choose Word for some file types.
- 5. Choose number of **Bit**.

OPC UA tag settings

After clicking «...» button when you choose OPC UA server you'll get into the Address Space window. Browse through the address space by double clicking on the nodes and choose the tag(node) you need by clicking right button on it and choosing *Select* menu item on the popup window.

On the Scaling tab of the Tag properties window:

- 1. Check **Enable I/O scaling** if you want to scale a value get from the server.
- 2. Enter minimum server tag's value into **Raw value minimum** field.
- 3. Enter maximum server tag's value into **Raw value maximum** field.
- 4. Enter minimum tag's value in engineer units into EU value minimum field.
- 5. Enter maximum tag's value in engineer units into **EU value maximum** field.
- 6. Write tag's value offset int EU value offset.

When you get some value from the server application use this formula:

value = (value-rawmin)*(eumax-eumin)/
(rawmax-rawmin)+eumin + offset

On the Alarms tab of the Tag properties window:

- 1. Check **Enable alarms** if you want to use alarms for this tag.
- 2. Check **HiHi**, **Hi**, **Lo**, **LoLo** or **Normal** if you want to use the correspondent alarm(event).
- 3. Write Limit for the correspondent alarm(event). If the value of the tag plus Deadband will be more than *HiHi* or *Hi* limit the correspondent alarm will be called and be written into Event database. If the value of the tag minus Deadband will be less than *LoLo* or *Lo* limit the correspondent alarm will be raised and be written into Event database.
- Enter **Priority** for the correspondent alarm(event). If the priority of the alarm(event) is less than value of *Notifications(Priority<)* you set in the project properties the notification dialog will be called.
- 5. Enter **Message** for the correspondent alarm(event).
- 6. Check **Enable OPC UA event** if you bind this tag to the OPC UA server tag(node) and you want to use EventNotifier of this tag(node).

On the History tab of the Tag properties window:

- 1. Check Enable history if you want to storage values of this tag.
- 2. Enter Storage period(ms).
- 3. Check Store in DB if you want to store data in history database.

🔴 🔿 💮 Tag	properties
General Scaling Alarms	History
V Enable I/O scaling	
Raw value minimum	0.0
Raw value maximum	100.0
EU value minimum	0.0
EU value maximum	100.0
EU value offset	0.0
	OK Cancel



$\bigcirc \bigcirc \bigcirc$		Tag	properties	6
General	Scaling	Alarms	History	
🗸 Enable				
Storage pe	eriod(ms)		1000	
Store i	n DB			
Enable Storage pe Store i	history eriod(ms) n DB		1000	

Copy tag

To copy tag:

1. Right click on the tag you want to copy and choose Copy tag item.

Delete tag

To delete tag:

1. Right click on the tag you want to delete and choose *Delete tag* item.

Edit tag properties

To edit tag properties:

1. Right click on the script you want to edit and choose Tag properties item.

or

2. Double click on the tag you want to edit.

Export all tags

To export all tags:

- 1. Right click on the tags window and choose Export all tags item.
- 2. Now select the location and click the button *Save* (TeslaSCADA tags extension .tsp2tags).

Import tags

To import tags:

- 1. Right click on the tags window and choose Import tags item.
- 2. Now select the tags file and click Open (TeslaSCADA screen extension .tsp2tags).

Users

Create user

User is not a mandatory element of the project. You can use or not users in it. To create a new user select the menu item *Project* and *New User* or choose **Users** on the **Project Window,** click right button on it and choose *New User* item.

You'll see the following window:

- 1. In the **Name** enter the name of the user.
- 2. Write **Password** for the current user.
- 3. Check **Control functions** if you want that current user can write values into the server's tags.
- 4. Check **Acknowledge events** if you want that current user can acknowledge events in events database.
- 5. Check **Delete events** if you want that current user can delete events from events database.
- 6. Check **Insert events** if you want that runtime application insert events into events database when current user is logged in.

Project Lan	guage	▼ Users	
New Screen	~:W	Operator0	
New Server	•		
New Script	~:S		
New Tag	∼:T		New User
New User	∼cT		Copy User
New Object	~:0		Delete User
Run simulation	^F11		User properties
Properties	->-₽		

	User properties	
Name:	Operator1	
Password:		
✓ Control functions		
 Acknowledge events 		
✓ Delete events		
✓ Insert events		
✓ Insert history		
✓ Settings		
	OK	Cancel

- 7. Check **Insert history** if you want that runtime application insert history data into history database when current user is logged in.
- 8. Check Settings if you want current user can enter Settings menu of runtime application.

Open user properties

To open user properties:

1. Right click on the user you want to open and choose User properties item.

or

2. Double click on the user properties which you want to open.

Copy user

To copy user:

1. Right click on the user you want to copy and choose Copy user item.

Delete user

To delete user:

1. Right click on the user you want to delete and choose Delete user item.

Design screen

00

Collections

Libraries

TeslaSCADA

3D Objects

Buttons

Pipes

Valves

Pumps

Fans

Tanks Conveyers

Meters Controls

Trends Events

User-defined

To start designing the screen you want, you should double click on it or click right button on the **Project window->Screens** and choose *Open screen*.

Create graphical object

Add new graphical object object on the screen you can in several ways:

- 1. Select the menu item *Project* and *New Object*.
- 2. Click New Object button on the Toolbar.

You'll see the **Add graphical object** window:

- 3. Click right button on the Screen window and choose New object item.
- 4. Click right button on the Canvas and choose New object item.



Add graphical object Simple Objects Simple Objects Select Polyline Line Ellipse Lights/Indicators Label Text olygo Borde

Select library which object you want to use in your project (all libraries and their objects described below). Select object you can in several ways:

1.By double clicking on the object.

2. By clicking on the object (select rectangle will appear) and then clicking OK button. 3.By clicking right button and choosing Select item.

Add graphical object window will disappear and you can select the location on the screen where you want to place an object.

Object information about its dimensions and coordinates you can find in the status bar on the right.

OK

Cancel

Resize graphical object

You can resize graphical object by clicking on it. Resize squares will you can change dimensions of your object as you want.

Move graphical object

You can move graphical objects by Drag and Drop technology.

Open graphical object properties

You can open graphical object properties on the Screen Window or on the Canvas. To open graphical object properties:

1. Right click on the object you want to open and choose Object properties item.

or

2. Double click on the object properties which you want to open.

Copy graphical object

You can copy graphical object:



X, Y 260 240 W, H 100

80

- 1. Right click on the object you want to copy and choose Copy item.
- 2. Select the object you want to copy and choose *Edit->Copy* menu item.
- 3. Select the object you want to copy and click *Copy* button on the **Toolbar**.

Cut graphical object

You can cut graphical object:

- 1. Right click on the object you want to cut and choose *Cut* item.
- 2. Select the object you want to cut and choose *Edit->Cut* menu item.
- 3. Select the object you want to cut and click *Cut* button on the **Toolbar**.

Paste graphical object

You can paste (before cut or copied) graphical object:

- 1. Right click on the **Canvas** and choose *Paste* item.
- 2. Choose *Edit->Paste* menu item.
- 3. Click *Paste* button on the **Toolbar**.

Erase graphical object

You can erase graphical object:

- 1. Right click on the object you want to erase and choose *Erase* item.
- 2. Select the object you want to erase and choose *Edit->Erase* menu item.
- 3. Right click on the object in the Screen Window and choose Delete object item.

Duplicate graphical object

You can duplicate graphical object:

- 1. Right click on the object you want to duplicate and choose *Duplicate* item.
- 2. Select the object you want to erase and choose *Edit->Erase* menu item.

Send to back graphical object

You can send to back graphical object relative to other objects of the screen:

- 1. Right click on the object you want to send to back and choose Send to Back item.
- 2. Select the object you want to send to back and choose *Arrange->Send to Back* menu item.
- 3. Select the object you want to send to back and click *Send to Back* button on the **Toolbar**.

Bring to front graphical object

You can bring to front graphical object relative to other objects of the screen:

- 1. Right click on the object you want to bring to front and choose Bring to Front item.
- 2. Select the object you want to bring to front and choose *Arrange->Bring to Front* menu item.
- 3. Select the object you want to bring to front and click *Bring to Front* button on the **Toolbar**.

Rotate clockwise graphical object

You can rotate clockwise graphical object clockwise:

- 1. Select the object you want to rotate clockwise and click *Rotate Clockwise* button on the **Toolbar**.
- 2. Select the object you want to rotate clockwise and choose *Arrange->Rotate Clockwise* menu item.

Rotate counterclockwise graphical object

You can rotate counterclockwise graphical object clockwise:

- 1. Select the object you want to rotate counterclockwise and click *Rotate CounterClockwise* button on the **Toolbar**.
- 2. Select the object you want to rotate counterclockwise and choose *Arrange->Rotate CounterClockwise* menu item.

Align graphical objects

You can align objects relative to each other on the screen. Choose objects you want to align by selecting square. And:

- 1. Choose *Arrange->Align* menu items.
- 2. Click *Align* buttons on the **Toolbar**.
- 3. Right click on selecting square and choose Align item.

For more information about each alignment operation you can read above in section Start

TeslaSCADA IDE ->Toolbar.

Group graphical objects

You can group objects. Choose objects you want to align by selecting square. And:

- 1. Select Arrange->Group objects menu item.
- 2. Click Group objects button on the Toolbar.
- 3. Right click on selecting square and choose Group objects item.

Ungroup graphical objects

You can ungroup objects. Choose group of objects you want to ungroup by clicking on it . And:

- 1. Select Arrange->Ungroup objects menu item.
- 2. Click Ungroup objects button on the Toolbar.
- 3. Right click on selecting square and choose Ungroup objects item.



Graphical objects

Each graphical object has several group of properties. The description of each group of properties you can find below in the chapter - Properties. In this chapter we describe one group for every object - General.

This group is responsible for the appearance of the object. Each object has the following properties:

- 1. Name write name of the object in this field.
- 2. Dimensions dimensions of the graphical object. Enter width of the object in the W field and enter height of the object in the H field.
- 3. Coordinates coordinates of the graphical object. Write x coordinates of the object in the X field and enter y coordinates of the object in the Y field.
- 4. Angle select the angle of rotation of the object.

Simple Objects library

Simple objects library contains the following objects: Line, Rectangle, Ellipse, Polyline, Polygon, Sector, Text, Border, Image and Scale.



Line

- 1. Write width of the line in the **Line width** field.
- 2. Choose **Color** of the line.
- 3. Choose Line style: Solid, Dash, Dot or DashDot.

Rectangle

- 1. Write width of the line in the Line width field.
- 2. Choose **Color** of the border line.
- 3. Select fill or not this rectangle in the **Fill** combobox.
- 4. Choose Fill color of the rectangle.



Cancel

Ellipse

- 1. Write width of the line in the Line width field.
- 2. Choose **Color** of the border line.
- 3. Select fill or not this ellipse in the **Fill** combobox.
- 4. Choose **Fill color** of the ellipse.

		Object properties							
General	Line color	Fill color	Flash	Rotation	Motion 💌				
Name:		Ellips	e						
Line width	:	2							
Color:		🔳 Bla	Black 🔻						
Fill:		true	true 🔻						
Fill color:		🔳 Gr	ау		•				
Dimension	IS:	w=	100	H=	80				
Coordinate	es:	X=	270	Y=	30				
Angle:		0			•				
			ОК	Car	ncel				

Polyline

- 1. Write width of the line in the Line width field.
- 2. Choose **Color** of the line.

Remove nodes of the

3. When you click **Collection** button the Collection window will appear. You can *Add*, *Edit* or

 Collection

 (0.0, 40.0)
 CoordinateX:
 0

 (50.0, 0.0)
 (100.0, 60.0)
 CoordinateY:
 40

 (50.0, 80.0)
 Add
 Edit
 Remove

	Object properties									
General	Line color F	Flash	Rotation	Motion	Visibility					
Name:		Poly	/line							
Line width		2								
Color:		E	Black		•					
Hotspots:		Collection								
Dimensior	W=	100	H=	= 80						
Coordinat	es:	X=	140	Y=	270					
Angle:		0			•					
			OK	Ca	incel					

Polygon

polyline.

- 1. Write width of the line in the Line width field.
- 2. Choose **Color** of the border line.
- 3. Select fill or not this polygon in the **Fill** combobox.
- 4. Choose **Fill color** of the polygon.
- 5. When you click **Collection** button the Collection window will appear. You can *Add*, *Edit* or *Remove* nodes of the polygon.



Close

Sector

- 1. Write width of the line in the Line width field.
- 2. Choose **Color** of the border line.
- 3. Select fill or not this sector in the **Fill** combobox.
- 4. Choose Fill color of the sector.
- 5. Enter **Start angle** of the sector in the field. 0 degrees is right middle point of the dimensions rectangle.
- 6. Write **Rotation angle** in the field. Counterclockwise rotation.

General Line color	Fill color	Filling	Flash F	Rotation				
Name:	Polyg	on						
Line width:	2	2						
Color:	🔳 Bla	Black 🔻						
Fill:	true	true 🔻						
Fill color:	🔳 Gr	🔳 Gray 🔻						
Hotspots:		Collection						
Dimensions:	W=	100	H=	80				
Coordinates:	X =	X= 370 Y=						
Angle:	0			•				
		ОК	Ca	ncel				
	Object p	roportios						
	object p	ioper ties						
General Line color	Fill colo	r Flash	Rotation	Motion 💌				
Name:	Secto	Sector						
Line width:	2	2						



Text

- 1. Write text in the **Text** field.
- 2. Choose Font type of the text.
- 3. Enter **Font size** in the field.
- 4. Select Text placement: Left, Center or Right.
- 5. Choose Text color.
- 6. Select use or not **Border** around text.
- 7. Write width of the border in the **Border width** field.
- 8. Choose Border color.
- 9. Select fill or not text background in the Fill combobox.
- 10. Choose Fill color of the text background.

Border

- 1. Write width of the border in the **Line width** field.
- 2. Select **Inner** or not border style.
- 3. Select fill or not this border in the **Fill** combobox.
- 4. Choose **Fill color** of the border.

		Obj	ect pro	opertie	s					
General	Text input	Output	Text	color	Line	e color	Fill cold	or	Fli 👻	
ime:			٦	Fext						
ext:			L	abel						
nt type:			F	Roboto	Reg	ular			-	
nt size:			3	30						
xt place	ment:		C	Center					-	
xt color	:			Blue						
order:			f	alse					-	
order wid	dth:		2	2						
order col	or:			Blac					-	
l:			f	alse					-	
l color:									-	
mension	IS:		١	N=	1	00	H=		80	
ordinate	es:)	K=	5	10	Y=		340	
igle:			C)					-	
					ок		Cano	el		
	0	O	bject (proper	rties					
Ger	neral Fill c	olor Fla	sh F	Rotatio	on	Motion	Visibi	lity		
Name	ame: Border									
Line	Line width: 2									
Inner	Inner: true							-		
Fill:			true						-	
Fill co	olor:		G	rav					-	
Dime	nsions:		W=		100		H=		80	
Coord	dinates:		X=		70		Y=		160	
Angle			0				•-			
				OK			Cancel			
			Obj	ect pro	operti	ies				
	General	Flash F	lotatio	n Mo	tion	Visibil	ity			
1	Name:			Image						
	Dimension	s:		W=	1	00	H=		80	
	Coordinate	es:		X=	4	70	Y=		100	
	Angle:			0					*	
	lmage				7]				



 Select Image you want to add to the project by clicking «...» button. Open file dialog will appear. Choose file with image you want to add to the project and click Open button.

Scale

- 1. Write width of the line in the Line width field.
- 2. Choose **Color** of the border and scale lines.
- 3. Select use or not **Border** for this scale.
- 4. Select use or not Scale №2 for this scale.
- 5. Select use or not **Scale №3** for this scale.
- 6. Enter Scale interval №1 in the field.
- 7. Enter Scale interval №2 in the field.
- 8. Enter Scale interval №3 in the field.
- 9. Write width of the scale №1 in the Marker №1 size field.
- 10. Write width of the scale N_2 in the **Marker N_2 size** field.
- 11. Write width of the scale №3 in the Marker №3 size field.

	0	Object properties							
General Line color	Flash	Rotation Motion Visibility							
ame:			Scale						
ne width:			2						
olor:			В	lack			•		
order:			false	9			-		
cale №2:			true				•		
cale №3:			true				•		
cale interval Nº1:			2						
cale interval Nº2:			4						
cale interval №3:			2						
arker №1 size:			30						
arker №2 size:			20						
arker №3 size:			10						
imensions:			w=	10	0 н	=	80		
oordinates:			X =	4	0 Y	=	350		
ngle:			0				•		
				0	К	Car	icel		

3D Objects library

3D objects library contains the following objects: Sphere, Cylinder, Cone, Sector 3D, Polygon 3D, Tank, Border 3D, Text 3D.



Object properties

General Fill color Flash Rotation Motion Visibility

Sphere

Gray

100

210

ОК

Object properties

General Line color Fill color Filling Flash Rotation 👻

Cylinder

H=

Y=

Cancel

w=

X=

0

Ŧ

80

230

Name:

Angle:

000

Name:

Fill color:

Dimensions:

Coordinates:

Sphere

1. Choose **Fill color** of the border.

Cylinder

- 1. Write width of the line in the Line width field.
- 2. Choose **Color** of the border line.
- 3. Select fill or not this cylinder in the **Fill** combobox.
- 4. Choose **Fill color** of the cylinder.

Cone

- 1. Write width of the line in the Line width field.
- 2. Choose **Color** of the border line.
- 3. Select fill or not this cone in the **Fill** combobox.
- 4. Choose **Fill color** of the cone.
- 5. Select Aspect ratio of the cone.



OK

Cancel

Sector 3D

- 1. Write width of the line in the Line width field.
- 2. Choose **Color** of the border line.
- 3. Select fill or not this sector in the **Fill** combobox.
- 4. Choose **Fill color** of the sector.
- 5. Enter **Start angle** of the sector in the field. 0 degrees is right middle point of the dimensions rectangle.
- 6. Write Rotation angle in the field. Counterclockwise rotation.

Polygon 3D

- 1. Write width of the line in the Line width field.
- 2. Choose **Color** of the border line.
- 3. Select fill or not this polygon in the **Fill** combobox.
- 4. Choose **Fill color** of the polygon.
- When you click Collection button the Collection window will appear. You can Add, Edit or Remove nodes of the polygon.

Collection (0.0, 40.0) (50.0, 60.0) (50.0, 60.0) (50.0, 8

Tank

- 1. Choose **Fill color** of the tank.
- 2. Select **Ratio** of the tank.
- 3. Select vertical or horizontal will be tank in Vertical combobox.

Border 3D

- 1. Write width of the border in the Line width field.
- 2. Choose **Color** of the border.
- 3. Select fill or not this border in the **Fill** combobox.
- 4. Choose **Fill color** of the border.
- 5. Enter radius of the border's corner in the **Corner radius** field.
- 6. Select use or not **Glass** effect.

		Object properties						
General	Line color	Fill color	Flash	Rotation	Motion 💌			
Name:	Secto	·3D						
Line width	1							
Color:		🔳 Bla	ck		•			
Fill:		true						
Fill color:		🔳 Gra	у		•			
Start angle	9	90.0						
Rotation a	ngle	180.0	180.0					
Dimension	IS:	w=	100	H=	80			
Coordinate	es:	X=	X= 610 Y=					
Angle:		0	0 -					
			ок	Car	cel			

• • • • •	Object p	roperties								
General Line color	Fill colo	r Filling	Flash R	otation 💌						
Name:	Polyg	jon								
Line width:	2									
Color:	🔳 Bla	ack		•						
Fill:	true			•						
Fill color:	🔳 Gr	ау		•						
Hotspots:		C	ollection							
Dimensions:	w=	100	H=	80						
Coordinates:	X=	370	Y=	290						
Angle:	0			•						
		OK	Car	ncel						
		UK	Ca	1061						
Object properties										
• • • • •	Object p	roperties								
General Fill color Fl)bject p ash R	roperties otation N	Notion Vi	sibility						
General Fill color Fl	object p ash R Tank	roperties otation M	Notion Vi	sibility						
General Fill color FI Name: Fill color:)bject p ash R Tank	roperties otation M ght Gray	Notion Vi	sibility -						
General Fill color FI Name: Fill color: Ratio:	bject p ash R Tank Lig	otation M ght Gray	Notion Vi ; 7 8 9	sibility - 3.0 10						
General Fill color FI Name: Fill color: Ratio: Vertical:	Dbject p ash Re Tank Lig 1 2 false	operties otation N ght Gray	Notion Vi	3.0						
General Fill color FI Name: Fill color: Ratio: Vertical: Dimensions:	bbject p ash Ro Tank Lig false W=	noperties otation N ght Gray 3 4 5 6 100	Action Vi	3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 5						
General Fill color FI Name: Fill color: Ratio: Vertical: Dimensions: Coordinates:	Dbject p ash R Tank Lig 1 2 false W= X=	operties obtation N ght Gray 3 4 5 6 100 240	Action Vi 7 8 9 H= Y=	sibility 3.0 10 3.0 440						
General Fill color FI Name: Fill color: Ratio: Vertical: Dimensions: Coordinates: Angle:	Dbject p ash Ri Tank Lig false W= X=	noperties tation N ht Gray 3 4 5 6 100 240	Action Vi 7 8 9 H= Y=	sibility 3.0 10 440 •						
General Fill color FI Name: Fill color: Ratio: Vertical: Dimensions: Coordinates: Angle:	Dbject p ash Rd Tank Lig 1 2 false W=[X=[0	noperties patation N ht Gray 3 4 5 6 100 240	Action Vi 7 8 9 H= Y=	sibility						
General Fill color FI Name: Fill color: Ratio: Vertical: Dimensions: Coordinates: Angle:	Ash Roman Ash Ro	apht Gray 100 240	Action Vi	sibility • • • • • • • • • • • • •						
General Fill color FI Name: Fill color: Ratio: Vertical: Dimensions: Coordinates: Angle:	Ash Roman Action Control Contr	apterior operation of the second seco	Action Vi 7 8 9 H= Y=	sibility 3.0 10 440 •						



Text 3D

- 1. Write text in the **Text** field.
- 2. Choose **Font type** of the text.
- 3. Enter **Font size** in the field.
- 4. Select **Text placement:** *Left, Center* or *Right*.
- 5. Choose Text color.
- 6. Select use or not **Border** around text.
- 7. Write width of the border in the **Border width** field.
- 8. Choose Border color.
- 9. Select fill or not text background in the **Fill** combobox.
- 10. Choose **Fill color** of the text background.

Objec	ct properties					
General Text input Output	Text color Line color Fill color Fla					
Name:	Text3D					
Text:	Label					
Font type:	Roboto Regular 🔹					
Font size:	30					
Text placement:	Center 💌					
Text color:	Blue 🔻					
Border:	false 💌					
Border width:	8					
Border color:	Gray 💌					
Fill:	false 💌					
Fill color:	Black 💌					
Dimensions:	W= 100 H= 80					
Coordinates:	X = 100 Y = 70					
Angle:	0 -					
	OK Cancel					

Buttons library

Buttons library contains the following objects: Button, Press button, Toggle button, Light button, Oval light button, Image button, Oval jump and Rectangle jump. All buttons except Image button have the same General group properties. Below we describe it only for two graphical objects - **Button** and **Image button**.



Button

1. Write text of the button in the **Text** field.

1. Choose Fill color of the button's background.

2. Choose Text color.

Image Button

3. Choose **Fill color** of the button.

Cancel

ОК

Lights/Indicators library

Lights/Indicators library contains the following objects: Light, Rectangle light, Triangle light, Triangle light 2, Stack light, Indicator, Rectangle Indicator and Oval Indicator. All lights have the same General group properties and all indicators have the same General group properties. Below we describe it only for two graphical objects - **Light** and **Indicator**.



Light

- 1. Write text of the light in the **Text** field.
- 2. Choose Text color.
- 3. Choose **Fill color** of the light.

	Objec	t propertie	es		
General Indicator	Text input	Text cold	Fill color	Flash	Rota 💌
Name:		Light			
Text:					
Text color:		Whi	te		•
Fill color:		🔳 Gray	/		•
Dimensions:		w=	50	H=	40
Coordinates:		X =	160	Y=	120
Angle:		0			-
			ОК	Can	cel

Indicator

- 1. Choose Color TRUE of the indicator.
- 2. Choose Color FALSE of the indicator.

Object	prope	rties				
General Indicator Flash Rotat	ion	Motion	Visib	ility		
Name:	Indi	cator				
Color TRUE:	G	reen				•
Color FALSE:	R	ed				•
Dimensions:	W=		50	H=		40
Coordinates:	X=	4	30	Y=	2	210
Angle:	0					•
		OK		Ca	ancel	

Pipes library

Pipes library contains the following pipes objects: Straight, End, Bow, Tee, Intersect and Elbow. All pipes have the same General group properties. Below we describe it only for one graphical object - **Straight**.



Pipe

1. Choose **Fill color** of the pipe.

General	Fill color	Flash	Rotati	on M	otion	Visit	oility	
Name:		1		Straig	ht			
Fill color:				🔳 Gra	ау			•
Dimensior	IS:			W=	1	00	H=	80
Coordinat	es:			X=	1	40	Y=	300
Angle:				0				-



Valves library contains the following object: Valve.

Valves

Valve

1. Choose **Fill color** of the valve.

	Object properties								
General Fill color Flash	Rotation	tion Motion Visibility							
Name:	Va	lve							
Fill color:		Gray 🗸							
Dimensions:	w	= 1	00	H=	80				
Coordinates:	X	= 6	510 Y	Y=	190				
Angle:	0				•				

Cancel

ОК

Pumps library

Pumps library contains the following objects: Pump, Centrifugal pump and Air blower pump. All pumps have the same General group properties. Below we describe it only for one graphical object - **Pump**.



Pump

1. Choose **Fill color** of the pump.

$\bigcirc \bigcirc \bigcirc$			Object p	prope	rties				
General	Fill color	Flash	Rotati	on M	Notion	Visibility			
lame:				Pum	p				
ill color:				G 🗐	ray				۳
imension	is:			W=	1	00	H=		80
Coordinate	es:			X =		60	Y=	2	00
ngle:				0					*
				_					
					OK		Ca	ancel	

Fans library

Fans library contains the following object: Fan.

Fan

1. Choose **Fill color** of the fan.



Tanks library

Tanks library contains the following objects: Vertical tank, Horizontal tank and Cone tank. All tanks have the same General group properties. Below we describe it only for one graphical object -**Vertical tank**.



Vertical tank

- 1. Choose background color of the tank in Color.
- 2. Choose filling color of the tank in **Fill color**.
- 3. Enter text in the **Text** field.



Conveyers library

Conveyers library contains the following objects: Screw conveyer and Belt conveyer. All conveyers have the same General group properties. Below we describe it only for one graphical object - **Belt conveyer**.

Belt conveyer

- 1. Choose Fill color of the conveyer.
- 2. Select incline or not in Incline combobox.





Analog meters library

Analog meters library contains the following objects: Analog meter, Analog meter rectangle, Analog meter 90 degrees, Analog meter 90 degrees 2, Analog meter 90 round, Analog meter vertical, Analog meter vertical fill, Analog meter horizontal and Analog meter horizontal fill.

Analog meters Analog meter Analog meter Analog meter rectangle Analog meter 90 degr 90 degrees 2 Analog meter horizontal Analog meter Analog meter Analog meter vertical vertical fill 90 round Analog meter horizontal fill

Analog meter

- 1. Write text of the label in the **Text** field.
- 2. Choose color of the arrow in the Color.
- 3. Choose filling color of the meter in **Fill color**.



Other analog meters

Analog meter rectangle, Analog meter 90 degrees, Analog meter 90 degrees 2, Analog meter 90 round, Analog meter vertical, Analog meter vertical fill, Analog meter horizontal and Analog meter horizontal fill have the same General properties:

- 1. Write text of the label in the **Text** field.
- 2. Choose color of the arrow in the **Color**.
- 3. Choose border color of the meter in **Border** color.
- 4. Write unit text in the **Unit** field.
- Enter the number of intervals of the meter in the № of intervals field.
- 6. Check **Use digital** if you want to use digital meter.

		Ob	ject p	properties			
General	Value	Color	Bor	der color	Flash	Rotation	$\mathbf{\overline{\bullet}}$
Name:		(Anal	og meter i	rectang	e	
Color:		(B	lue			•
Border co	lor:	(#	a0a0a0			•
Text:		(Labe	el			
Unit:	[U					
№ of inter	vals:	[6				
Use digita	l:	[\checkmark				
Dimensior	is:		w=	150		H=	120
Coordinat	es:		X=	170	•	Y=	60
Angle:			0				•
			_				
				OK		Cancel	J

Digital meters library

Digital meters library contains the following objects: Digital meter, 4 digit meter, 6 digit meter and 8 digit meter.



Digital meters

All digital meters have the same general properties:

- 1. Write text of the label in the **Text** field.
- 2. Choose Text color.
- 3. Choose color of the border in the **Border color**.
- 4. Choose filling color of the meter in **Fill color**.



Controls library

Controls library contains the following objects: Slider, Slider vertical, Slider horizontal, Counter and Counter rectangle.



Slider

- 1. Choose color of the background in the Color.
- 2. Choose filling color of the slider in **Fill color**.

00		Obje	ct properti	es		
General	Control	Color	Fill color	Flash	Rotation	M 🗨
Name:		S	lider			
Color:			Gray			•
Fill color:			Blue			•
Dimensior	IS:	١	N=	50	H=	120
Coordinates:			<=	60	Y=	340
Angle:	Angle:					•
			ОК		Cancel	

Slider vertical and horizontal

- 1. Choose color of the background in the Color.
- 2. Choose filling color of the slider in **Fill color**.
- 3. Enter label text in the **Text** field.
- 4. Write unit text in the **Unit** field.
- 5. Enter the number of intervals of the slider in the № of intervals field.
- 6. Check Use digital if you want to use digital meter.

		Obje	ect pro	opertie	s					
General	Control	Color	Fill	color	Flash	Rotation	Μ	€		
Name:		5	Slider							
Color:			#cccccc							
Fill color:			#33	34db3				•		
Text:		L	Label							
Unit:		l	J							
Nº of inter	vals:	e	6							
Use digita	l:	\checkmark]							
Dimension	s:	١	N=	7	70	H=	2	10		
Coordinate	es:	3	<=	33	30	Y=	1	40		
Angle:		C)					•		
				ОК		Cancel				

Counter and counter rectangle

General properties for counter and counter rectangle are the same:

- 1. Choose color of the background in the **Color**.
- 2. Choose Text color.

\mathbf{O}		Obj	ect p	properties	;			
General	Control	Color	Те	ext color	Flash	Rot	ation	•
Name:			Cour	nter				
Color:			G	ray				-
Text color:	:		G	reen				-
Dimension	IS:		w=	10(C	H=		40
Coordinate	es:		X=	390)	Y=		450
Angle:			0					•
				ОК		Can	cel	

Trends library contains the following objects: Trend, Real time trend, Trend DB and Trend OPC UA History. Trend and Real time trend draw curves based on tags that used history data collection (check Enable history in Tags properties). Trend DB draw curves based on tags that used data stored in database (check Store in DB in Tags properties). Trend OPC UA History draw curves based on tags that bind to OPC UA nodes supported Historyzing property. All trends have the same General and Grid group properties. Below we describe their only for one graphical object - Trend.

Trend

- 1. Enter width of line in the Line width.
- 2. Choose background color of the trend in **Color**.
- 3. Select fill or not in the Fill combobox.
- 4. Choose filling color of the tank in **Fill color**.
- 5. To add curve click

Collection button.

Collection window will appear:

- 1. Select tag that you want to bind to this curve in the Tag.
- 2. Enter curve's name in the Name field.
- 3. Write width of curve's line in Line width field.
- 4. Choose **Color** of the curve.
- 5. Select **Type** of the curve. *Type 1* just draw the line. *Type 2* draw line with filling till axis X.

Add

Tag: Name

Line width

Color

Туре

Curve

Black

Type 1

Edit Remo

Close

On the Grid tab:

- 1. Enter width of grid's lines in the Line width field.
- 2. Choose Color of grid's lines.
- 3. Select Line style: Solid, Dash, Dot or DashDot.
- 4. Write number of horizontal grid's lines in Horizontally field.
- 5. Write number of vertical grid's lines in Vertically field.
- 6. Enter Maximum value of the trend.
- 7. Enter **Minimum** value of the trend.
- 8. Write Font size of the marks.
- 9. Choose Mark color.
- 10. Enter **Time format** of trend's time axis.

00	Obje	ct prope	erties				
General Grid	Fill color	Flash	Rotatio	n I	Motion	Visi	€
Line width:	1						
Color:		Gray					•
Line style:	S	olid					•
Horizontally:	5	i					
Vertically:	4	4					
Maximum:	1	00.0					
Minimum:	0	.0					
Font size:	1	0					
Mark color:		Black					•
Time format:	n	nm:ss					
		OK	:		Cancel		

;								
	00	OI	bject p	orope	erties			
	General Grid	Fill cold	or Fla	ash	Rotatio	on	Motion	
	Name:		Tren	d				
	Line width:		1					
	Color:		В	lack				
	Fill:		true					
	Fill color:		- N	/hite				
-	Curves:				Co	lect	tion	
	Dimensions:		W=		300		H=	
*	Coordinates:		X=		290		Y=	
-	Angle:		0					
•								
				OK			Cance	el

Trends

2

Trend

Real time tren

160

30



Events library

Events library contains the following object: Events log. *Events log* collects tag's events (check **Enable alarms** and check events you want to collect in Tags properties).

Events							
Events (All)						
Name	Time	т	ype Pri				
	No co	ntent in t	able				
	Ev	ents log					
			Object	properties			
General	Columns	Flash	Rotation	Motion	Visibility		
Name:	oolamilo	, laon	notation	Event	s loa		
Title:				Event	s		
Font size:				12			
Acknowled	dge color:			Wh	ite		•
Unacknow	ledge colo	or:		Lig	ht Blue		-
Priority co	lors:				Col	lection	
Time form	at:			d/MM	hh:mm:ss		
Dimension	IS:			w=	300	H=	160
Coordinate	es:			X =	100	Y=	150
Angle:				0			-
					ОК	C	ancel
		(Collection				
(0.0, 200.0)	>0xff0000f	f From:		0.0)		
(200.0, 800	0.0)>0xtttt0 800x0<->0x008	To:		20	0.0		
		Color:			Red	•	
			Add	Edit	Rer	nove	
					Clo	se	
· [

Events log

- 1. Enter title of the table in the **Title** field.
- 2. Write size of text in the **Font size**.
- 3. Choose row's background color of acknowledged events in the **Acknowledge color**.
- 4. Choose row's background color of not acknowledged events in the **Unacknowledge color**.
- 5. Choose color of the event's text by clicking **Collection** button.
- 6. Enter **Time format** of the time's text.

After clicking **Collection** button you'll see the window:

- 1. Enter the priority of the event from which be used this color in the **From** field.
- 2. Enter the priority of the event to which be used this color in the **To** field.
- 3. Choose **Color** of the event's text.

On the *Columns* tab:

- 1. Select columns that you want to use in the table.
- 2. Write titles of the columns in correspondent **Title** field.
- 3. Enter Width of the correspondent column.

Occurred October Detection Meeting Minibility	
General Columns Flash Rotation Motion Visibility	
Name Title: Name Width: 60	
✓ Time Title: Time Width: 10	0
✓ Type Title: Type Width: 60	
Priority Title: Priority Width: 40	
Message Title: Message Width: 18	0
✓ Value Title: Value Width: 60	
Ack.time Title: Width: 0	
OK	icel

User-defined library

Create user-defined library

You can create your own library by clicking right button on *Collections* section of the **Add graphical object** window and choosing *New library* menu item. You can add graphical object in your library by clicking right button on the object on **Canvas** or **Screen window** and choosing *Add to Library->You library* menu item. You can *Select, Rename* or *Delete* created object in your library by clicking right button on it and selecting correspondent menu item.

	Add graphical object
Collections	MyLibrary
 ✓ Libraries ▶ TeslaSCADA ✓ User-defined MvLibrarv Rename library Delete library Export library Import library 	Group Object

Rename user-defined library

To rename library:

1. Right click on the library you want to rename and choose Rename library item.

Delete user-defined library

To delete library:

1. Right click on the library you want to delete and choose Delete library item.

Export user-defined library

To export library:

1. Right click on the library you want to export and choose Export library item.

2. Now select the location and click the button *Save* (TeslaSCADA library extension .tsp2lib).

Import user-defined library

To import library:

- 1. Right click on the Collections window and choose Import library item.
- 2. Now select the library file and click Open (TeslaSCADA library extension .tsp2lib).

Properties

Each graphical object has several group of properties. To use property of the graphical object check **Enable Property**. Each object has *Flash*, *Rotation*, *Motion* and *Visibility* properties. Other properties depend on the object.

Flash

Flash property lets object to flash when conditions is TRUE or FALSE. To edit flash property click **Flash** tab on the object property window.

- 1. Select the **Tag** value of which will be compared.
- 2. Enter the comparison Value.
- 3. Select Type of comparison.
- Write period's time in milliseconds of objects flashing if the comparison is true in the **Duration TRUE(ms)** field. If you enter 0 the object will not flashing.
- Write period's time in milliseconds of objects flashing if the comparison is false in the **Duration FALSE(ms)** field. If you enter 0 the object will not flashing.
- 6. If you select *Tag.PV in the range* in the **Type** combobox and click **Collection** button. You'll see the window:
- 1. Enter the value from which the object will flash with this periodicity in the **From** field.
- 2. Enter the value to which the object will flash with this periodicity in the **To** field.
- 3. Enter period of flashing in the **Duration(ms)** field.

You can *Add*, *Edit* or *Remove* collection element of flashing conditions.





Rotation

Rotation property lets to rotate the object proportional to the value of the tag. To edit rotation property click **Rotation** tab on the object property window.

- 1. Select the **Tag** value of which will be compared.
- Enter the minimum of rotation angle in the Rotation angle(min) field.
- 3. Enter the maximum of rotation angle in the **Rotation angle(max)** field.
- 4. Write the minimum of the tag's value in the **Rotation value(min)**.
- 5. Write the maximum of the tag's value in the **Rotation value(max)**.
- 6. Enter X coordinate of the pivot in **PivotX** field.
- 7. Enter Y coordinate of the pivot in **PivotY** field.

		Object properties				
General	Line color	Fill colo	r Flash	Rotation	Motion	$\mathbf{\overline{\bullet}}$
🗸 Enabl	e property					
Tag:			Tag0			•
Rotation a	angle(min):	[0			
Rotation a	angle(max):		360			
Rotation	value(min):		0			
Rotation	value(max):		100			
PivotX:			50.0			
PivotY:			40.0			
			ОК	Ca	incel	

Motion

Motion property lets to move the object depending on value of the tag. To edit motion property click **Motion** tab on the object property window.

- 1. Select the **Tag** depending on value of which the object will change location coordinates.
- 2. Click Collection button to edit move conditions coordinates.

• • •	Object p	roperties			
General Line col	or Fill color	Flash	Rotation	Motion	$\overline{\bullet}$
 Enable proper 	ty				
Tag:		Tag0			-
Hotspots:			Collectio	n	
		OK	Са	ncel	
	Collection				
(0.0, 10.0)>0,0	From:	0.0)		
	To: TranslationX:	10	.0		
	TranslationY:	0			
	Add	Edit	Remo	ve	
			Close	•	

After clicking you'll see window:

- 1. Enter the value from which the object will change coordinates in the **From** field.
- 2. Enter the value to which the object will change coordinates in the **To** field.
- 3. Write **TranslationX** coordinates.
- 4. Write **TranslationY** coordinates.

Visibility

Visibility property lets to make the object visible or not depending on the tag's value. To edit visibility property click **Visibility** tab on the object property window.

- 1. Select the **Tag** value of which will be compared.
- 2. Enter the comparison Value.
- 3. Select Type of comparison.

Obj	ect properties	
Line color Fill color Flas	h Rotation Motion	Visibility 💌
 Enable property 		
Tag:	Tag0	•
Value:	0	
Туре:	Tag.PV==Value	•
	ОК Са	ancel

Line color

Line color property lets object to change color of its line when conditions is TRUE or FALSE. To edit line color property click **Line color** tab on the object property window.

- 1. Select the **Tag** value of which will be compared.
- 2. Enter the comparison Value.
- 3. Select **Type** of comparison.
- 4. Choose a color that will result if the comparison is true in **Color TRUE**.
- 5. Choose a color that will result if the comparison is false in **Color FALSE**.
- 6. If you select *Tag.PV* in the range in the **Type** combobox and click **Collection** button. You'll see the window:
- 1. Enter the value from which the object will change color in the **From** field.
- 2. Enter the value to which the object will change color in the **To** field.
- 3. Choose Color.

You can *Add*, *Edit* or *Remove* collection element of line color conditions.





Fill color

Fill color property lets object to change color of its filling when conditions is TRUE or FALSE. To edit fill color property click **Fill color** tab on the object property window.

- 1. Select the **Tag** value of which will be compared.
- 2. Enter the comparison Value.
- 3. Select Type of comparison.
- 4. Choose a color that will result if the comparison is true in **Color TRUE**.
- 5. Choose a color that will result if the comparison is false in **Color FALSE**.
- 6. If you select *Tag.PV in the range* in the **Type** combobox and click **Collection** button. You'll see the window:
- 1. Enter the value from which the object will change color in the **From** field.
- 2. Enter the value to which the object will change color in the **To** field.
- 3. Choose Color.

You can *Add*, *Edit* or *Remove* collection element of fill color conditions.

Filling

Filling property lets to control filling of the object depending on value of the tag. To edit filling property click **Filling** tab on the object property window.

- 1. Select the **Tag** value of which will be used to control filling.
- 2. Enter minimum value of the object's filling in the **Minimum** field.
- 3. Enter maximum value of the object's filling in the **Maximum** field.

	Object properties
General Line color	Fill color Flash Rotation Motion
Enable property	
ig:	Tag0 🔻
alue:	0
/pe:	Tag.PV==Value
olor TRUE:	Red
olor FALSE:	Green 💌
anges:	Collection
	OK Cancel
	OK Cancel





Text color

Text color property lets object to change color of text when conditions is TRUE or FALSE. To edit text color property click **Text color** tab on the object property window.

- 1. Select the **Tag** value of which will be compared.
- 2. Enter the comparison Value.
- 3. Select **Type** of comparison.
- 4. Choose a color that will result if the comparison is true in **Color TRUE**.
- 5. Choose a color that will result if the comparison is false in **Color FALSE**.
- 6. If you select *Tag.PV* in the range in the **Type** combobox and click **Collection** button. You'll see the window:
- 1. Enter the value from which the object will change color in the **From** field.
- 2. Enter the value to which the object will change color in the **To** field.
- 3. Choose Color.

You can *Add*, *Edit* or *Remove* collection element of text color conditions.

Control (for buttons)

Control property lets to write value to the tag. To edit control property click **Control** tab on the object property window.

- 1. Select **Tag** which will be recorded value.
- Select Function of writing value: Set will write true to the tag; Reset - will write false to the tag; Toggle - if current tag's value true will write false, if currents tag's value false will write true; Push - during pressing button will write true; Set value - will write Value to the tag; Enter value - will call dialog that lets you enter value; Call screen - will call selected screen; Call popup - will call selected popup screen.
- 3. When you select *Set value* **Function** write **Value** that will be written to the tag.
- 4. When you select *Enter value* **Function** write **Title** of the called dialog that lets you enter value.
- 5. When you select *Call screen* or *Call popup* **Function** choose **Screen** that will be called after clicking button.

	Object properties							
General	Control	Text input	Text color	Fill color	Flash	Rotati	•	
✓ Enable	property							
Tag:			Tag0			•		
Value:			0					
Type:			Tag.PV==Va	lue		•		
Color TRU	E:		Red 🔻					
Color FALS	SE:		Green			•		
Ranges:			Collection					
				ОК	Ca	ncel		

	Collection	
(0.0, 10.0)>0xffffffff	From:	0.0
	То:	10.0
	Color:	White 🔻
	Add	Edit Remove
		Close

General	Control	Text input	Text color	Fill color	Flash	Rotati	Ŧ
	1 1						
Enable	property	1					
Tag:			Tag0			•	
Function:			Set value			•	
Value:			0				
Title:			Enter value				
Screen:						Ŧ	
					-		

Text input

Text input property lets object to control display text when conditions is TRUE or FALSE. To edit text input property click **Text input** tab on the object property window.

- 1. Select the **Tag** value of which will be compared.
- 2. Enter the comparison Value.
- 3. Select Type of comparison.
- 4. Enter text that will result if the comparison is true in **Text TRUE**.
- 5. Enter text that will result if the comparison is false in **Text FALSE**.
- 6. Write the text will be shown before displayed text in the **Text before**.
- 7. Write the text will be shown after displayed text in the **Text after**.
- 8. Enter **Decimal position** of displayed text in the field.
- 9. If you select *Tag.PV in the range* in the **Type** combobox and click **Collection** button. You'll see the window:
- 1. Enter the value from which the object will change text in the **From** field.
- 2. Enter the value to which the object will change text in the **To** field.
- 3. Write displayed Text.

You can *Add*, *Edit* or *Remove* collection element of displayed text conditions.

Output

Output property lets to write value to the tag. To edit output property click **Output** tab on the object property window.

- 1. Select the **Tag** where value will be written.
- 2. Enter **Title** of the dialog that will be used to write value to the tag.

Indicator

Indicator property lets to indicate object depending on value of the tag. To edit indicator property click **Indicator** tab on the object property window.

- 1. Select the **Tag** value of which will be compared.
- 2. Enter the comparison Value.
- 3. Select Type of comparison.

Obj			ject properties					
General	Control	Text input	Text color	Fill color	Flash	Rotati	•	
✓ Enable	property	,						
Tag:		(Tag0			•		
Value:			0					
Туре:			Tag.PV			•		
Text TRUE								
Text FALS	E:							
Ranges:				Collection				
Text befor	e:							
Text after:								
Decimal po	osition:		0					
				ОК	Car	ncel		

	Collection	
(0.0, 10.0)>Text	From:	0.0
	To:	10.0
	Text:	Text
	Add	Edit Remove
		Close

	Object properties						
General Text input	Output	Text color	Line color	Fill color	Fl; 💌		
 Enable property 							
Tag:	(Tag0			-		
Title:		Enter value					



Image

Image property lets object to change image when conditions is TRUE or FALSE. To edit image property click **Image** tab on the object property window.

- 1. Select the **Tag** value of which will be compared.
- 2. Enter the comparison Value.
- 3. Select Type of comparison.
- 4. Choose image that will result if the comparison is true by clicking **Image TRUE** button.
- 5. Choose image that will result if the comparison is false by clicking **Image FALSE** button.

General	Control	Image	Fill color	Flash	Rotation	Motion	Vis	•
✓ Enable	property							
Tag:			Tag0				•	
Value:			0					
Туре:			Tag.P\	/==Valu	е		•	
mage TRL	JE:							
mage FAL	SE:							
			ſ					
				O	K	Cance		

Color

Color property lets object to change color of its when conditions is TRUE or FALSE. To edit color property click **Color** tab on the object property window.

- 1. Select the **Tag** value of which will be compared.
- 2. Enter the comparison Value.
- 3. Select **Type** of comparison.
- 4. Choose a color that will result if the comparison is true in **Color TRUE**.
- 5. Choose a color that will result if the comparison is false in **Color FALSE**.
- 6. If you select *Tag.PV* in the range in the **Type** combobox and click **Collection** button. You'll see the window:
- 1. Enter the value from which the object will change color in the **From** field.
- 2. Enter the value to which the object will change color in the **To** field.
- 3. Choose Color.

You can *Add*, *Edit* or *Remove* collection element of color conditions.





Control (slider)

Control property lets object to write value to the tag. To edit control property click **Control** tab on the object property window.

- 1. Select the **Tag** value of which will be changed.
- 2. Enter **Minimum** value of the control.
- 3. Enter **Maximum** value of the control.
- 4. Check **Snap to ticks** if you want to bind control's value.
- 5. Enter **Decimal position** of displayed text in the field.

Object properties						
General Control Color	Fill color	Flash	Rotation	M		
Enable property						
Tag:				•		
Minimum:	0					
Maximum:	100					
Snap to ticks:						
Decimal position:	0					
	OK		Cancel			

Control (counter)

Control property lets object to write value to the tag. To edit control property click **Control** tab on the object property window.

- 1. Select the **Tag** value of which will be changed.
- 2. Enter **Minimum** value of the control.
- 3. Enter **Maximum** value of the control.
- 4. Write **Delta** in the field.
- 5. Enter **Decimal position** of displayed text in the field.

Objec	ct properties			
General Control Color	Text color	Flash	Rotation	
 Enable property 				
Tag:	Tag0			•
Minimum:	0			
Maximum:	100			
Delta:	1			
Decimal position:	0			
	ОК		Cancel	

Value (for meters)

Value property lets to control values of analog and digital meters depending on value of the tag. To edit value property click **Value** tab on the object property window.

- 1. Select the **Tag** value of which will be used to control value of meter.
- 2. Enter minimum value of the meter in the **Minimum** field.
- 3. Enter maximum value of the meter in the **Maximum** field.
- 4. Enter **Decimal position** of displayed text in the field.



Design script

To start designing the script you want, you should double click on it or click right button on the **Project window->Scripts** and choose *Open script*. For creating scripts you should use FBD objects.

Create script object

Add new graphical object object on the screen you can in this way: click right button on the **Canvas** and choose *New object* item

You'll see the Add script object window:

Add script object

▼ Libraries Input/Output Logical	BNOT BAND BOR BOR	
Arithmetic		
Compare	Logical AND Logical OR Logical XOR	
Select		

Select library which object you want to use in your project (all libraries and their objects described below). Select object you can in several ways:

1.By double clicking on the object.

2. By clicking on the object (select rectangle will appear) and then clicking OK button.3.By clicking right button and choosing

Select item.

Add script object window will disappear and you can select the location on the screen where you want to place an object.

Connect script objects

To connect two objects, click the end of the first (the end to paint over) and click start the second. This will bring up a line connection.

Bind script object to the tag

You can bind Input/Output script objects to the tag. To do this click on Input/ Output script object, dialog will appear. Select tag you want to bind.

OK

Cancel

Enter value to the value script object

You can enter value to value script objects to the tag. To do this click on value script object, dialog will appear. Enter value you want to use with this object.

Duplicate script object

You can duplicate script object. Right click on the object you want to duplicate and select *Duplicate* menu item.

Erase script object

You can erase script object. Right click on the object you want to erase and select Erase menu item.

Erase connection line

You can erase connection line. Right click on the line you want to erase and select *Erase* menu item.



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Script objects

Below description of script libraries and object.

Input/Output library

Input tag - this script object used to bind input tag to the script.

Output tag - this script object used to bind output tag to the script.

Value - this script object used to bind input constant value to the script.

Logical library

Inverse - this script object used to inverse input boolean value (Output = ! Input).

Logical AND - this script object used to logical operation AND for input boolean values (Output = Input & Input2).

Logical OR - this script object used to logical operation OR for input boolean values (Output = Input || Input2).

Logical XOR - this script object used to logical operation XOR for input boolean values (Output = Input XOR Input2).

Arithmetic library

Addition - this script object used to arithmetic operation addition for input values (Output = Input + Input2).

Subtraction - this script object used to arithmetic operation subtraction for input values (Output = Input - Input2).

Multiplication - this script object used to arithmetic operation multiplication for input values (Output = Input * Input2).

Division- this script object used to arithmetic operation division for input values (Output = Input / Input2).

Modulo - this script object used to arithmetic operation modulo for input values (Output = Input % Input2).

Compare library

Equal - this script object used to comparison operation equal for input values (Output = Input == Input2).

Not Equal - this script object used to comparison operation not equal for input values (Output = Input != Input2).

Greater - this script object used to compare operation greater for input values (Output = Input > Input2).

Less - this script object used to compare operation less for input values (Output = Input < Input2).

Equal or Greater - this script object used to compare operation equal or greater for input values (Output = Input >= Input2).

Equal or Less - this script object used to compare operation equal or less for input values (Output = Input <= Input2).

Select library

Selectable enable - this script object used to select value form Input2 if Input1 is true (IF Input==true THEN Output=Input2).

Selectable negate - this script object used to select value form Input2 if Input1 is false (IF Input==false THEN Output=Input2)

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To select start and end time click on it. You'll see the following dialog. Select times and click OK.

Simulation

simulate your project.

You can simulate behavior of you project	. To start sim	ulation select the		Project Lan	guage
menu item <i>Project</i> and <i>Run simulation</i> or	click buttor	on the Toolbar .	(New Screen	~:W
	••••••			New Server	•
				New Script	~:S
If you use users in your project Login		Login		New Tag	∼:T
	Name:	Operator0		New User	~:T
dialog will appear. Select user and enter	Password.			New Object	~:0
password in the field. Now you can	1050010.			Run simulation	~F11

You can change value of the tag by double clicking on it in the Project window ->Tags. Or you can

click by right button on the tag and select *Simulate* and *Set value* menu item. Also you can simulate behavior of the tag:

- 1. *Random value* periodically change the value of the tag randomly.
- 2. *Ramp value* periodically change the tag value from 1 to 100 by adding 1.

By selecting Simulate and Cancel you annul the task.

Also it's possible to change value of the tag using control graphical objects of your project like text, buttons, slider, counter and etc. For example if you use Text object enable output property and bind to the tag you want to use. During simulation click on it and enter value you want.

Also you can simulate behavior of Trend and Events log objects. Place these objects on the

Canvas. Set properties of the object as describe in previous chapters.

During simulation trend will be look like this:



	Enter value	
?	45	
	Cancel	ОК

Properties

---P

Name		Value
		31
Simulate	•	Set value
		Random value
		Ramp value
		Cancel

Cancel

OK

During simulation Events log will be look like this:

- 1. To **View** message in the separate dialog double click on it or click right button on it and select *View* menu item.
- 2. To acknowledge record click by right button on it and select **Acknowledge** menu item.
- 3. To acknowledge all records on the table click by right button on the table and select **Acknowledge All** menu item.
- 4. To delete record click by right button on it and select **Delete** menu item.
- 5. To delete all records on the table click by right button on the table and select **Delete All** menu item.

You can select records that you want to see in the table. Click on the table't title. You'll see **Select time and priority conditions** dialog. Select start and end times of records displayed in the table. You can also set records with what priorities will be displayed.

\bullet \circ \circ						Selec	t time	and p	riority conditio	ons							
 From time 		Janu	ary		4 >	2016		4.2	✓ To time		Janu	ary		4.1	2016		٠.
		Sun	Mon	Tue	Wed	Thu	Fri	Sat			Sun	Mon	Tue	Wed	Thu	Fri	Sat
	01						1	2		01						1	2
	02	3	4	5	6	7	8	9		02	3	4	5	6	7	8	9
	03	10	11	12	13	14	15	16		03	10	11	12	13	14	15	16
	04	17	18	19	20	21	22	23		04	17	18	19	20	21	22	23
	05	24	25	26	27	28	29	30		05	24	25	26	27	28	29	30
	06	31								06	31						
				1	3:3	5							1	3:3	5		
✓ From priori	ty	0					🖊 То	priorit	y 1000								
													0	к		Canc	el

Name	Time	Туре	Pri		Message	Value	
Tag0					high	86	ć
Tag0	20/01 02:05:03	LoLo	50	Level too	View	17	l
Tag0	20/01 02:05:02	HiHi	50	Lever too	Acknowledge	37	
Tag0	20/01 02:05:02	LoLo	50	Level too	Acknowledge All	3	
Tag0	20/01 02:05:01	HiHi	50	Lever too	, lottionedge / li	39	
					Delete		
					Delete All		

Load on device

When a project is created (screens, servers, tags, scripts and users), the project can be loaded on the mobile device or other PC. For this purpose, first the corresponding TeslaSCADA Runtime mobile app on the Android device or PC apps on the Windows, Linux or MAC OS must be installed and started.

If the app has now been installed on the mobile device or PC, there are 2 ways to load the project to the device.

- 1. Network method.
- 2. Manual method.

Network method

This method must, the PC on which the TeslaSCADA IDE is started, and the mobile device or PC on which TeslaSCADA Runtime started and the project will be stored in a Wi - Fi network (note IP addresses) are.

Procedure:

1. Enable WiFi on your mobile device or PC where installed TeslaSCADA Runtime.

2. Start the TeslaSCADA Runtime app.

3. Open it in the editor TeslaSCADA IDE the desired project to be transferred.

4. Select the menu item *File* and *Load on Device*.

5. It now opens the dialog **Load on Device** and it will now search for mobile devices with the active TeslaSCADA Runtime. You can start a broadcast search and browse the entire network. However, since some routers do not forward broadcasts, there is also the possibility of a specific device search on the IP address.

This search takes a normally 5-10s. In individual cases it may happen that this search can take up to 3 minutes.

If you can't find a device you can try to restart **Load on Device** dialog and TeslaSCADA Runtime application.

6. After a successful search in this dialog box all found mobile devices with active TeslaSCADA Runtime app will be shown.

7. Now select the desired target device and press the **Load on Device** button.

8. After a successful transfer, the target device with TeslaSCADA Runtime load new project.



• O O Lo	ad on Device
PC:192.168.0.103	
Devices can be discover on your device) Broadcast	red(Please start Runtime App
Static IP	192.168.0.101
Refresh	
Load on Devic	Ce Cancel

Manual method

Another way to load a project on the mobile device is a file explorer such as: the **Android File Transfer** for Mac OS. Once the TeslaSCADA Runtime installed mobile app and once started on the sd card, a folder called

TeslaSCADA2Runtime->Projects is created.

Now, if the project which has been stored as .tsp2 file from the Windows, Linux or MacOS system TeslaSCADA IDE(The path was chosen when you first save of the project) will be manually copied to the folder of the sd card of the TeslaSCADA Runtime mobile device, the app can be started normally. Now loads the app, the file from this folder by

•••	💡 GT-18190	
< > Phone Card		
Название	 Последнее изменение 	Размер
resiaclient		
TeslaModbusSCADA		
TeslaMultiSCADA		
TeslaScada		
TeslaScada2Runtime		
▶ 🔜 DB		
Debug		
private		
Projects		
AndroidTest.tsp2	23.11.15, 13:53	471 KB
Blue.tsp2	12.11.15, 12:38	482 bytes
DemoProject.tsp2	10.09.15, 9:42	1.0 MB
Green.tsp2	12.11.15, 12:48	483 bytes
Res.tsp2	12.11.15, 12:39	481 bytes
Test.tsp2	12.11.15, 10:42	471 KB
TestLicense.tsp2	18.12.15, 13:00	6.6 MB
ProjectsAndroidTest.tsp2	11.11.15, 12:21	471 KB
ProjectsTest.tsp2	11.11.15, 12:23	471 KB
▶ ■ uademoclient		
LIEFA com		
LinitvAdsVideoCache		
60 item	. 818.7 MB available	

clicking *Load* on the main menu of TeslaSCADA Runtime. There is no problem to manually copy to the PC where TeslaSCADA Runtime is installed. You can

use local network, flash driver or use any other storage device.