

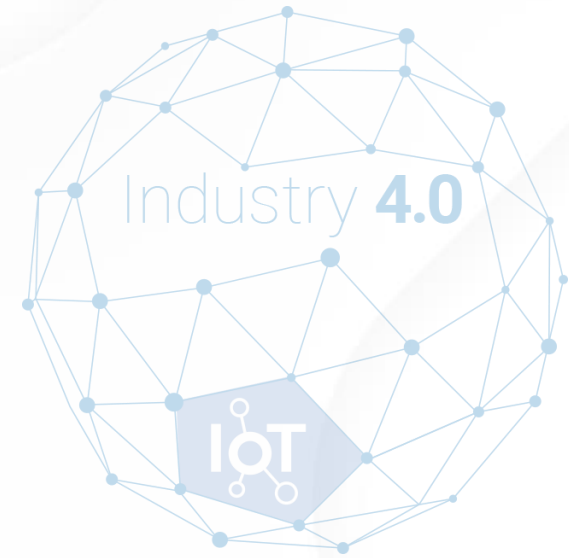
JMobile V2.8

Overview


JMobile V2.8

Featured areas:

- Support for creating applications compliant with 21 CFR part 11
 - Targeting pharma industry
 - Security features benefit all applications
- Custom widgets
- Remote client for EXOR HMI Linux products
- Extended support for JM4web applications
- BACnet
- Performance, Productivity
- Extended support for new products
- Other



JMobile®
The software inside X Platform

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exorint.com

21 CFR Part 11

FDA / United States Food and Drug Administration regulations on

- Electronic records
- Electronic signatures



To be compliant a device must ensure that electronic records and signatures are:

- Trustworthy
- Reliable
- Equivalent substitutes for paper records and for handwritten signatures

Applies to:

- Pharmaceutical industry, medical device manufacturers, biotech & biologic companies



21 CFR Part 11

- Additional parameters for User Management (stronger password rules)
- Full traceability of records in Audit Trails
 - New action to trace custom messages in Audit Trails
- Electronic signature support
- New action to produce reports with signature
 - signature used to prove authenticity and integrity of reports
- All platforms (Linux ,Win32 and Windows CE)



Confirm your password

Password:

Comment:

SaveEventArchive

EventArchive	AuditTrail
FolderPath	\USBMemory
FileName	\dump\%n
format	csv
Signed	true
TimeSpec	Global
periodMode	Last month

Tags

Alarms

Recipes

Miscellaneous

+

 All

×

 None

☐ Enable Audit Trail

Tag	Audit	Signature	Audit Buffer
Tag1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	AuditTrail
Tag2	<input type="checkbox"/>	<input type="checkbox"/>	AuditTrail
Tag3	<input type="checkbox"/>	<input type="checkbox"/>	AuditTrail

Parameters common to all users

☐ Force to change initial password

☐ Force log off time (min)

☐ Minimum Password Length (Char)

☐ Password must contain special characters

☐ Password must contain numbers

☐ The last three passwords can't be reuse

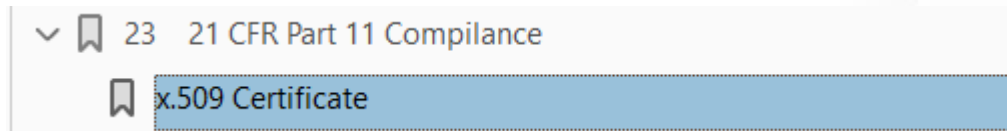
☐ Number of weeks before force a password change

☐ Show warnings before password expired (day)

21 CFR Part 11

Based on Digital signature

- Strong Asymmetric cryptography
 - X.509 standard for certificates
 - OpenSSL library
 - Support for CA
 - New BSP version required for Linux and Windows CE
 - New dedicated chapter in User manual
- as guideline for creating projects CFR-compliant

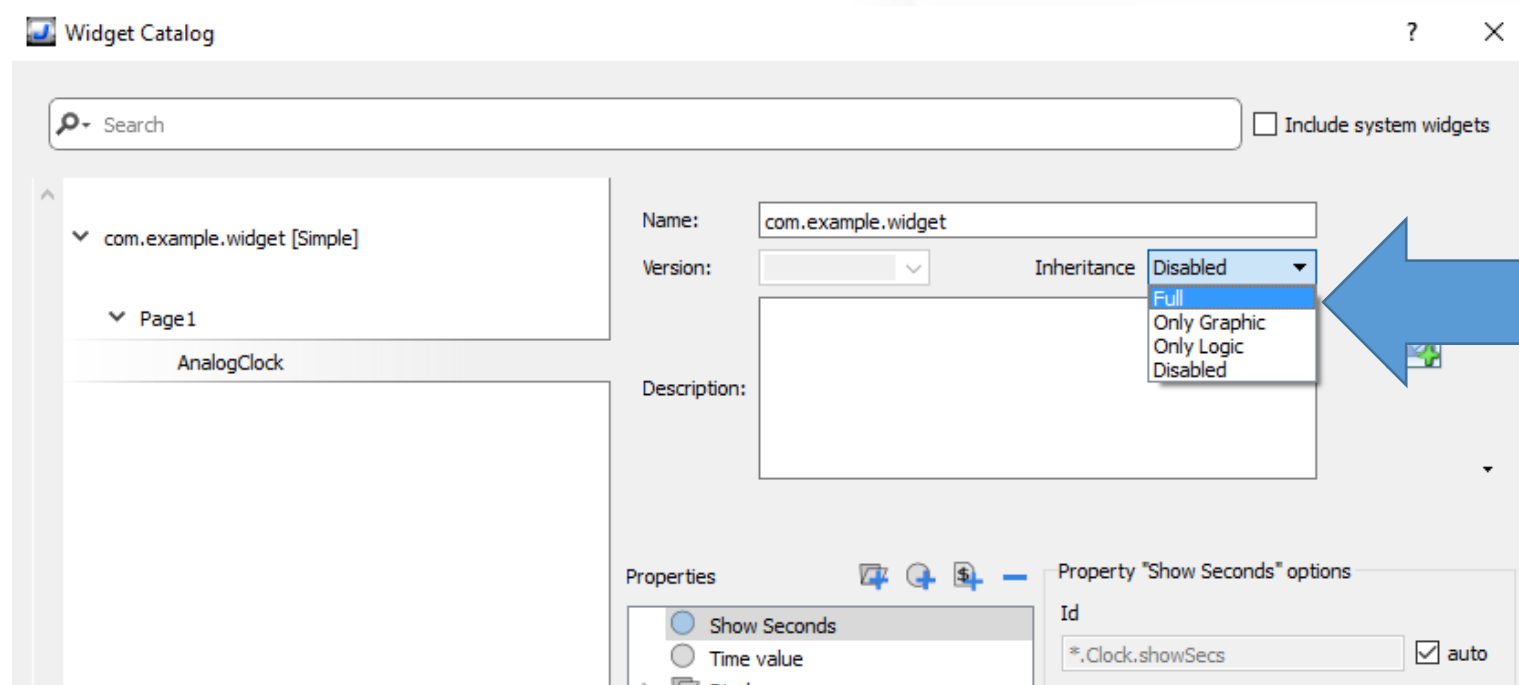


Custom Widgets

V2.6 introduced a new Widget Catalog for custom widget editing

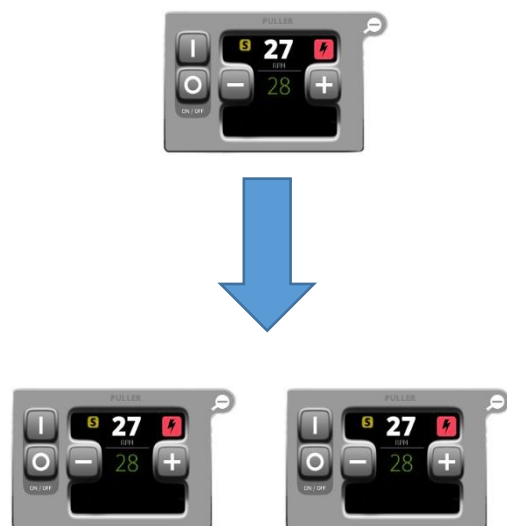
- JS Logic applied to a single widget automatically inherit by all widgets of the same class/model

V2.8 introduces **inheritance of graphic for custom widgets**



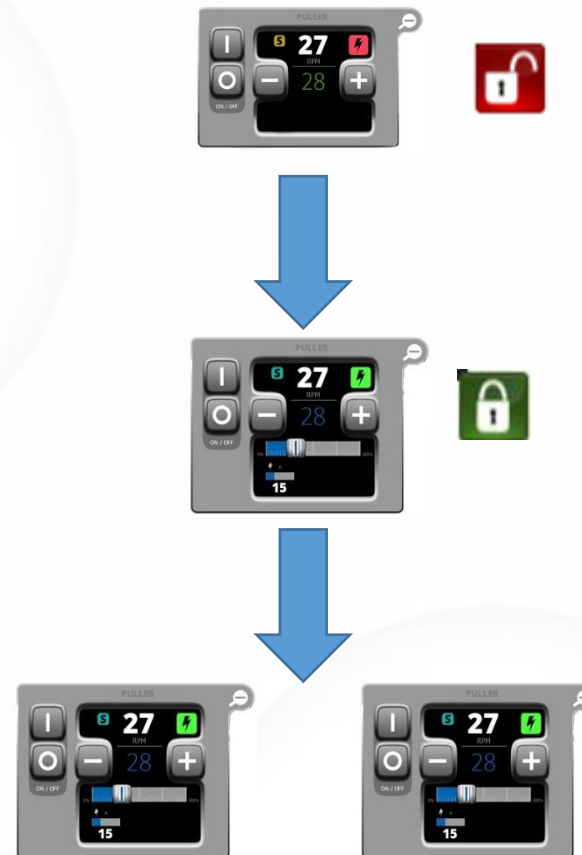
Custom Widgets

What does it mean «inheritance» in practice?



Create a custom widget and store it in User Widgets gallery

Use the widget from gallery where needed



Double click on widget to Unlock it

Edit widget
• Ex. Change color

Lock the widget to apply changes to all widgets of the same class

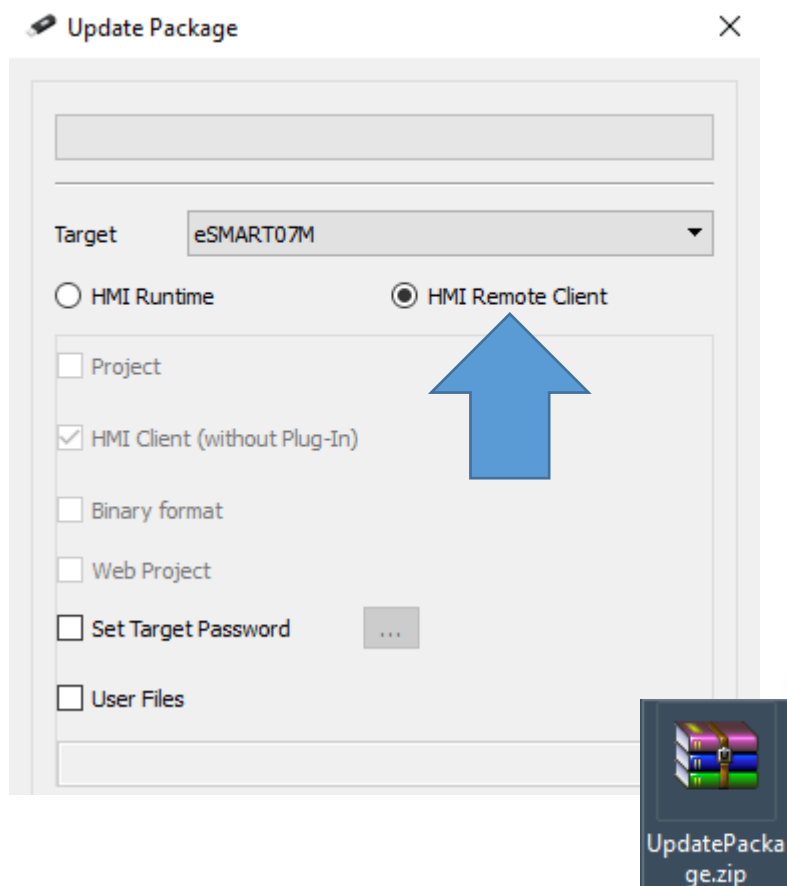
HMI Client for Exor Linux-based HMIs

Extended support for running into Exor HMIs

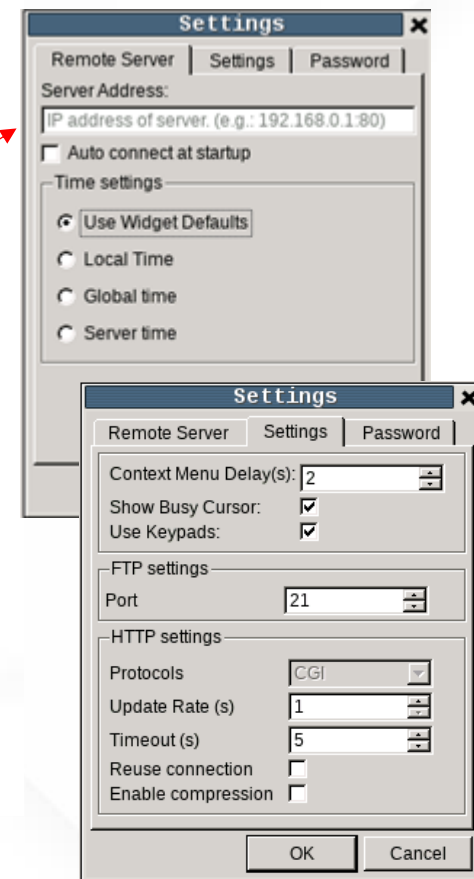
- Reduce maintenance time / costs. Project hosted in one server HMI can be accessed by multiple clients that automatically connect to it at boot.
- Up to 3 Remote Clients concurrent connections supported for each HMI working as a server
- Linux platforms only



HMI Client for Exor Linux-based HMIs



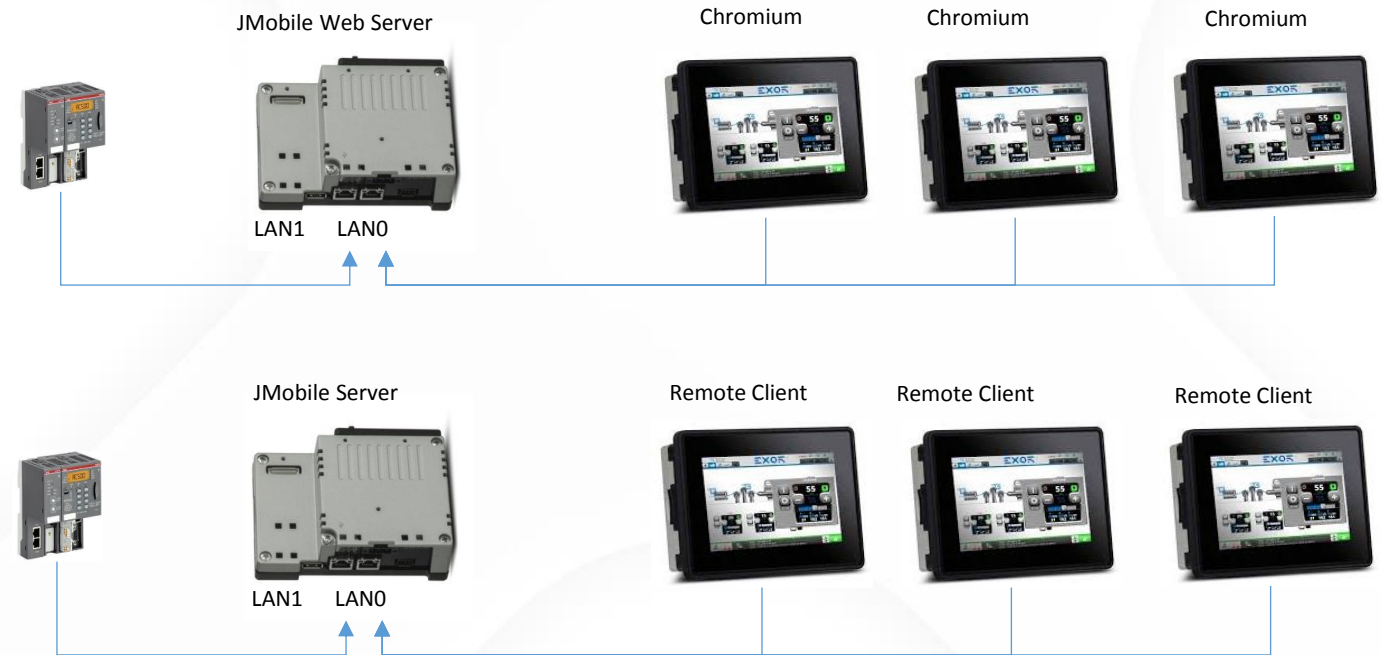
HMI Client configuration dialog



Native JMobile HMI Client vs Web client


JMobile offers multiple architectures for remote HMI connection

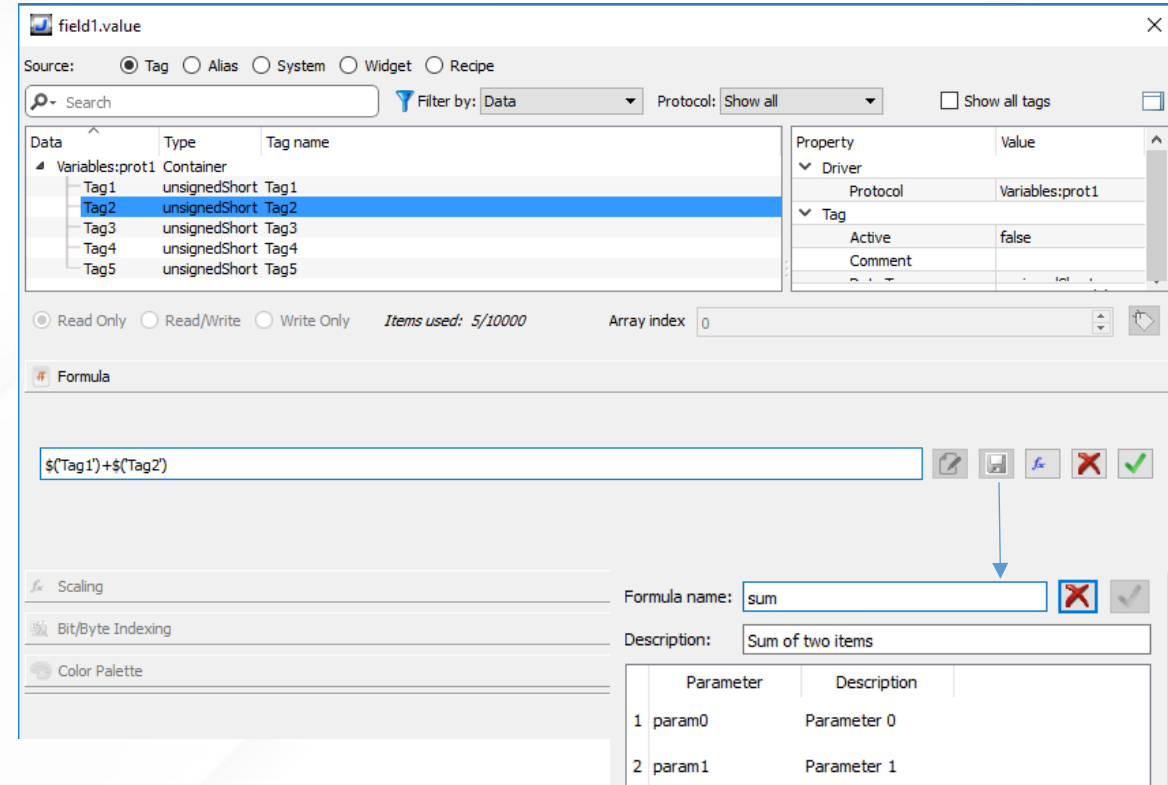
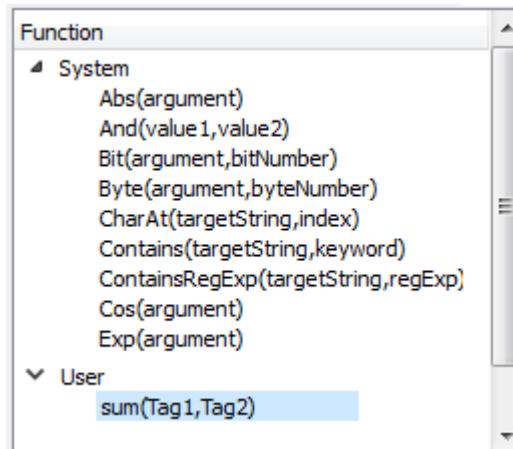
- Based on Chromium browser / HTML5
 - Requires JM4Web
- Based on HMI Remote clients
 - Does not require JM4Web



Tag expressions

Expressions available for transforms associated to tags

- Using standard Javascript syntax
 - Auto Syntax check on saving
- Direct tag access: \$("Tag1")
- Option to save & reuse formulas 
- Rich set of operators with helper
 - Math: (+, -, *, /)
 - Logic: (Not, And, Or)
 - Compare (<, <=, >, >=, ==)
 - \$IndexOf(target,key), ...



New Tables

Grid Layout and Table Widget (available since JMobile V2.6) have been used to enhance Quality, usability and performance of existing and new widgets

- Audit Trails
- Historical Trends
- Historical Alarms
- Active Alarms

Table filters based on data source (content visible and/or not visible)

Note: Old style tables are still available in gallery for compatibility

Audit trail widget

- UI fully customizable
- Gesturing support for scrolling
- Filter support
 - All columns of table can be filtered

Audit View

From: 05/04/18 - 10:08:41 To: 05/04/18 - 10:13:41 Duration: 5 Mins Refresh

Column Filter: UserName

#	Timestamp	Username	Operation	Information
1	05/04/18 - 10:12:59	admin	LOGIN	1
2	05/04/18 - 10:13:19	SYSTEM_IDAL	WRITE_TAG	Tag1;0;2
3	05/04/18 - 10:13:39	SYSTEM_IDAL	WRITE_TAG	Tag1;2;4

Backward Forward

Alarm and Trend tables

NEW Alarm & Trend tables

- Support for J1939 native alarms

Active Alarms Table

Select	Name	State	Value	Time	Description	Priority	Enable
<input type="checkbox"/>	99999	99999	99999	04/05/18 - 11:22:27	99999	99999	<input type="checkbox"/>
<div> <div>Hide Not Triggered</div> <div> <div>Toggle selection</div> <div>Ack</div> <div>Reset</div> <div>Save</div> </div> </div>							

Trend Table

From 04/07/18 - 11:10:09

To 04/07/18 - 11:20:09

Duration 10 Mins

Refresh

Timestamp	Temperature
04/07/18 - 11:20:02	0
04/07/18 - 11:20:03	0
04/07/18 - 11:20:05	2
04/07/18 - 11:20:06	4
04/07/18 - 11:20:07	4
04/07/18 - 11:20:08	6

Backward

Forward

Trigger

limitAlarm

bitMaskAlarm

deviationAlarm

valueAlarm

PLCArmJ193[prot1]

Properties

PLCArm

selectorType

ADDRESS

ecuFunctionOr

0

function

0

classOrInstance

0

SPN

0

FMT

0

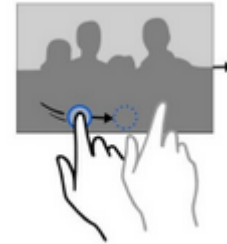
OK

Cancel

Multitouch and Gestures

Translate simple gestures (swipe/pinch) to actions/macros (example: NextPage)

- OnPinch / fire a js action
 - OnPinchOpen / fire a standard action (ex. ShowDialog)
 - OnPinchClosed / fire a standard action
- OnPan / fire a js action
 - OnSwipeLeft / fire a standard action (ex. NextPage)
 - OnSwipeRight / fire a standard action (ex. PrevPage)
 - OnSwipeUp / fire a standard action
 - OnSwipeDown / fire a standard action
- OnRotate / fire a js action
 - RotateClockWise / fire a standard action
 - RotateAntiClockWise / fire a standard action
- Option to disable multitouch at project level



Button Widget : gstArea		
Value	0	a +
Click Type	momentary	
Autorepeat	Disabled	
Hold Time (ms)	-1	
Autorepeat Time (ms)	-1	
Gesture Passthru Delay (ms)	-1	
Events		
OnClick Action		+
OnMouseHold Action		+
OnMousePress Action		+
OnMouseRelease Action		+
OnDataUpdate Action		+
OnPinch Action		+
OnPan Action		+
OnRotate Action		+
OnPinchOpen Action		+
OnPinchClosed Action		+
OnSwipeLeft Action		+
OnSwipeRight Action		+
OnSwipeUp Action		+
OnSwipeDown Action		+
RotateClockwise Action		+
RotateAntiClockwise Action		+

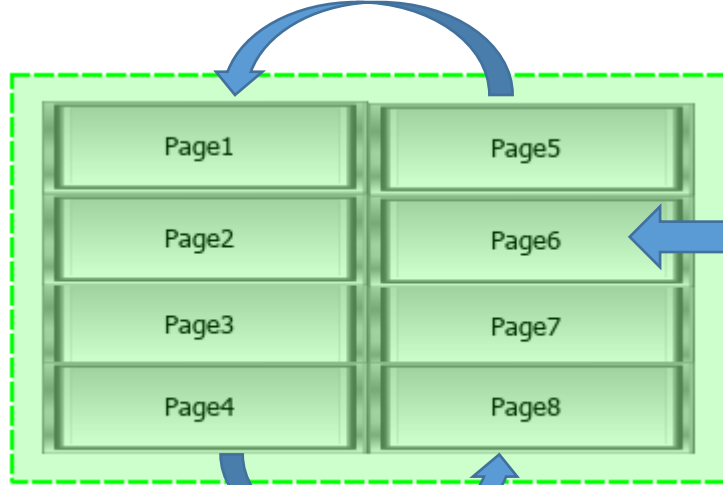
New

Multitouch and Gestures

Gesture Passthru option available

- Pass events to widget below gstArea widget

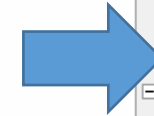
SwipeLeft to go to next page



SwipeRight to go to prev. page

Click to go to Page6

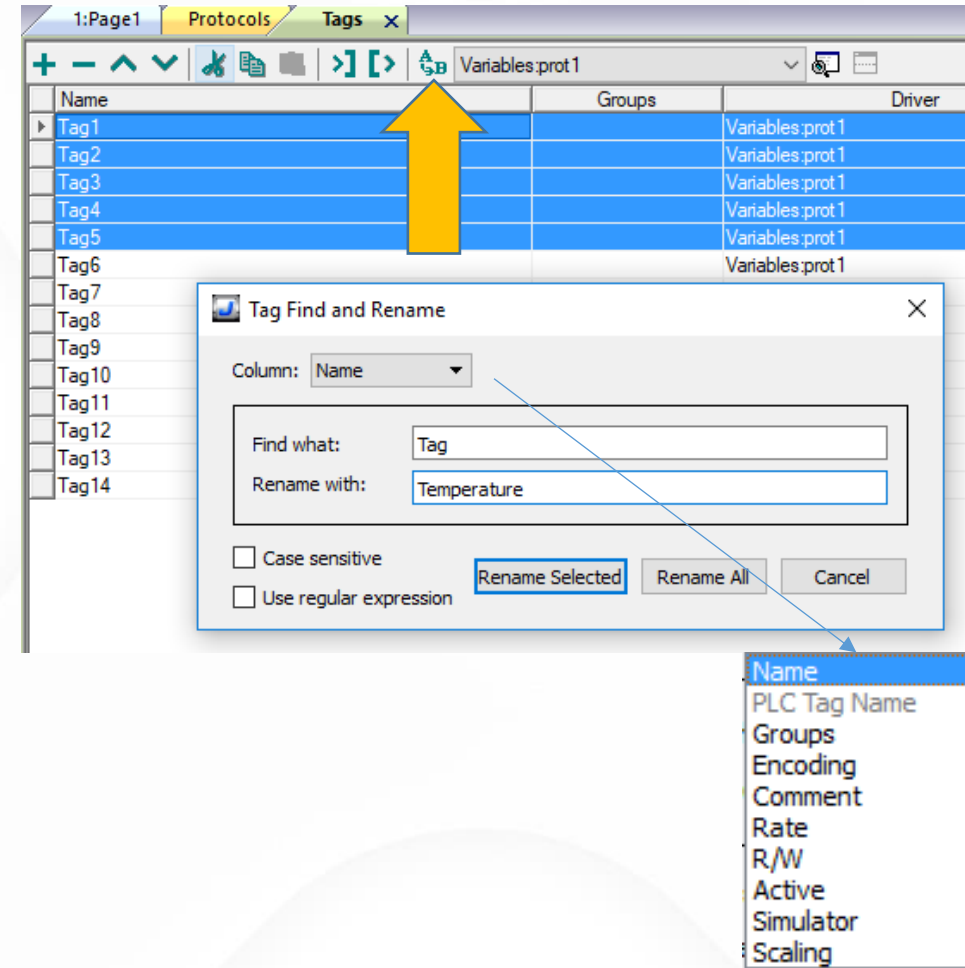
(click event is passthru widget below gstArea and detected by Page6 button)



Button Widget : gstArea		
Value	0	a +
Click Type	momentary	
Autorepeat	Disabled	
Hold Time (ms)	-1	
Autorepeat Time (ms)	-1	
Gesture Passthru Delay (ms)	200	
Events		
OnMouseClick Action		+
OnMouseHold Action		+
OnMousePress Action		+
OnMouseRelease Action		+
OnDataUpdate Action		+
OnPinch Action		+
OnPan Action		+
OnRotate Action		+
OnPinchOpen Action		+
OnPinchClosed Action		+
OnSwipeLeft Action	1 Action	+
Action[0]	NextPage()	-
OnSwipeRight Action	1 Action	+
Action[0]	PrevPage()	-
OnSwipeUp Action		+
OnSwipeDown Action		+
RotateClockwise Action		+
RotateAntiClockwise Action		+

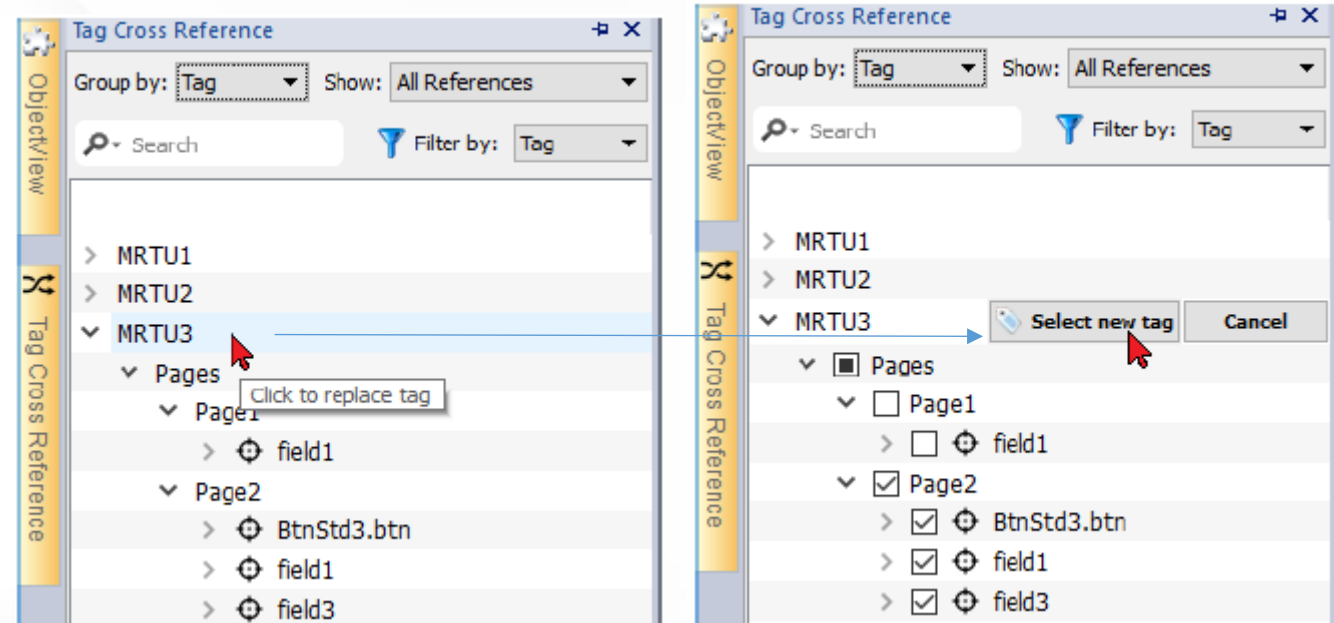
Tag Find and Rename

- Search and replace values in Tag Editor
 - Available for all main columns of Tag Editor
 - Regular expressions are supported
 - Allows applying changes to all or a subset of selected tags in list



Tag Find and Replace

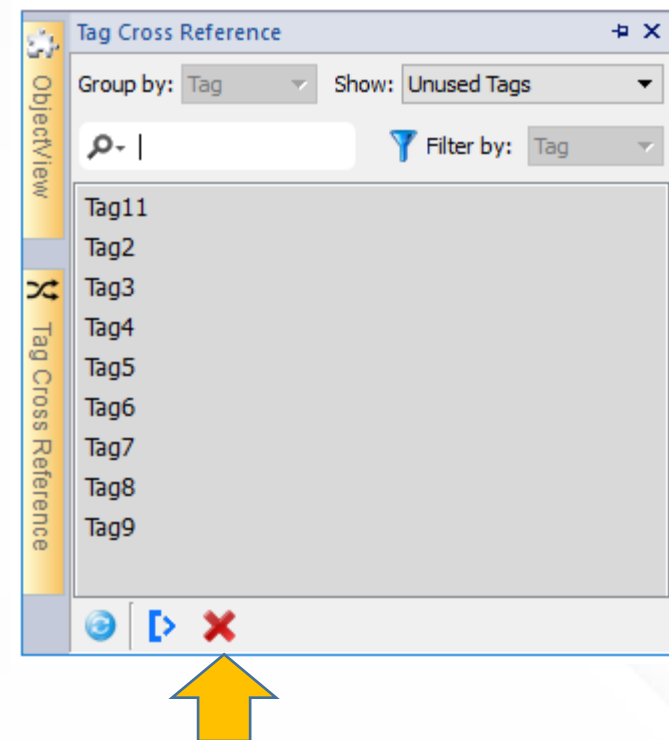
- Search all occurrences of a tag inside the project and replace it with another tag
- New option of Tag Cross Reference
- Using check boxes select where replacement is to be applied



Remove unused tags

New option in Tag Cross Reference

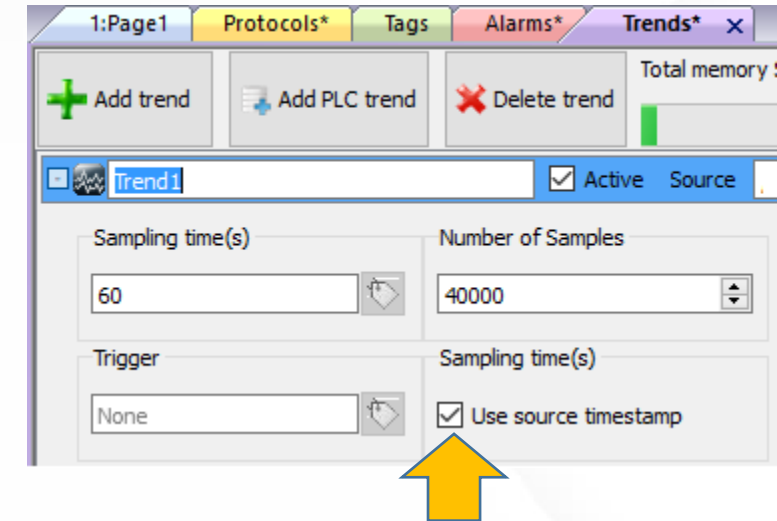
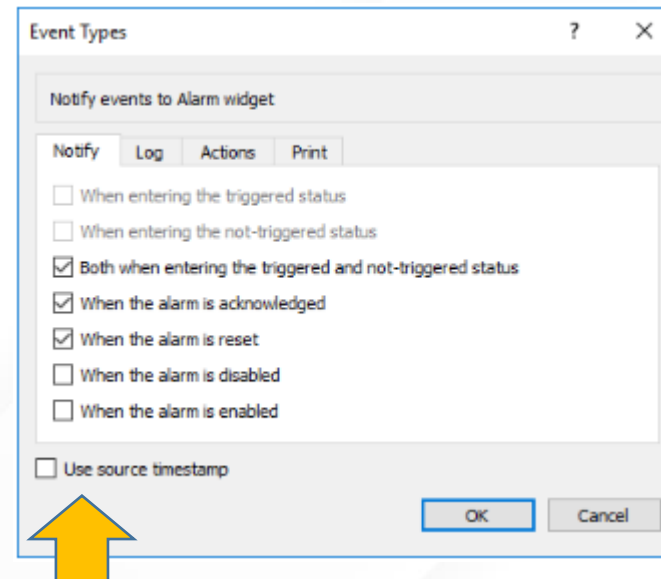
- Select all or a subset of tags for cleanup
- Click red «X» button to cleanup selected tags



Source timestamp option

New «Use source timestamp» option available

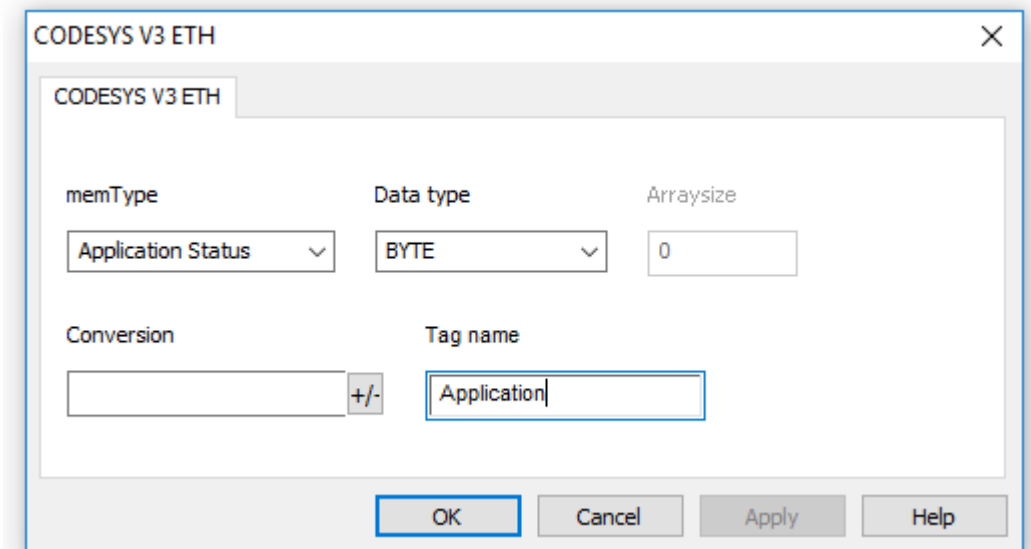
- Choose between the source timestamp (controller) and HMI timestamp
- Available for BACnet & OPC-UA Client protocols
- Available for use with trends and events



PLC status of CODESYS V3 available in System Variables

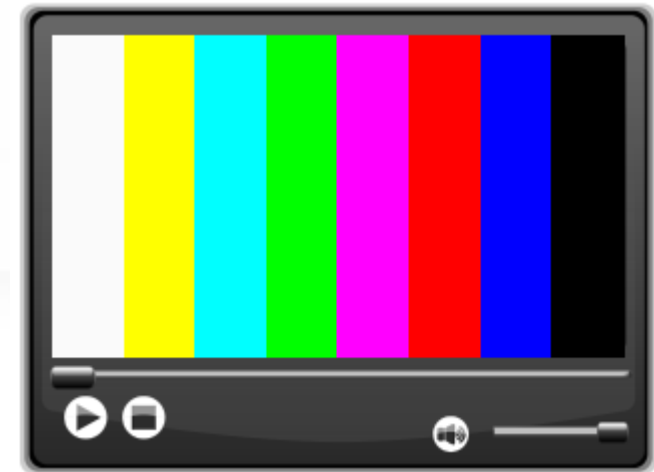
Visualize and control CODESYS V3 PLC status using variables

- Application status:
 - 0 : Run
 - 1 : Stop
 - 2 : Halted on BreakPoint
 - 255 : Unknown
- Specify application to start/stop
 - Ex: Application (default)
 - Useful when multiple applications are available



Video player support for Linux platforms

- Supported by all HMI panels with CPU 800 MHz or faster (Linux platforms)
 - eSMART07M, eSMART10, eSMART107, eX7xx, JSmart
 - HW acceleration support for multicore HMIs (eX707 to eX721, JSmart, eSMART107)
 - Video up to FullHD
 - H264 or MPEG4 formats supported (same as for eTOP500/600 products)
 - SW codecs (no HW acceleration) for single core HMIs (eSMART, eX705)
 - Video up to 640x480 30fps 1008 bitrate
 - MPEG4 video support



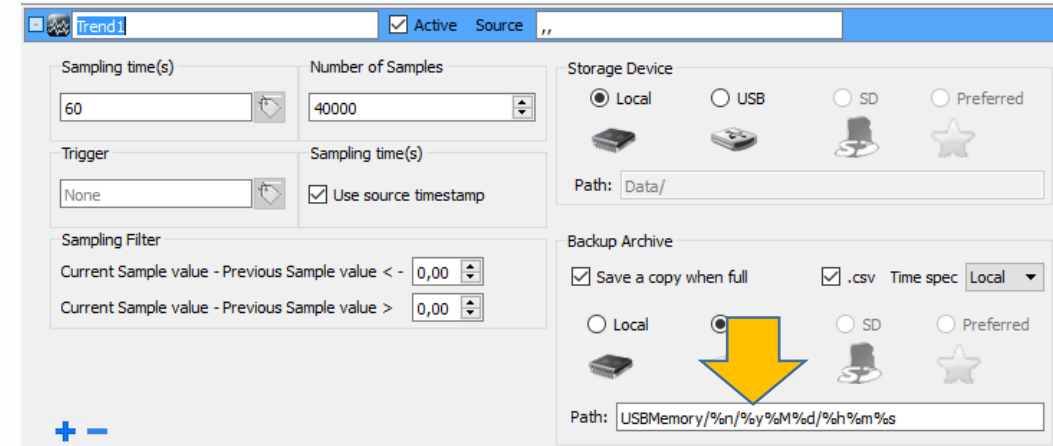
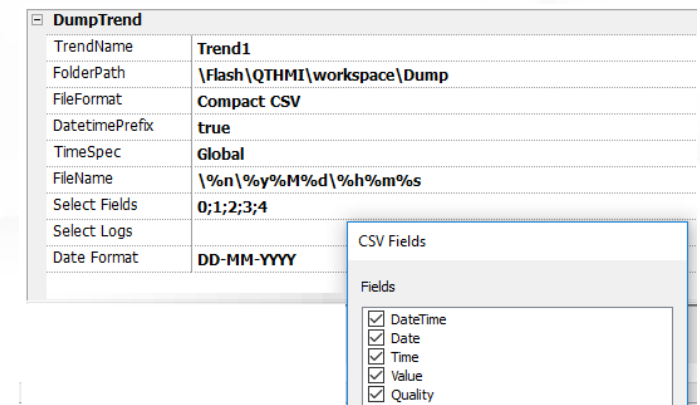
New option for trends dump in csv

Trend Editor / Backup Archive

- Automatically backup/dump trends when buffer is full
 - Format .bin or .csv
 - Timestamp local/global
 - Path customizable (USB, SD, etc)

DumpTrend Action

- New option to select columns to dump in csv
- Column selection available also at runtime

DumpTrend	
TrendName	Trend1
FolderPath	\Flash\QTHMI\workspace\Dump
FileFormat	Compact CSV
DatetimePrefix	true
TimeSpec	Global
FileName	\%n\%y%M%d\%h%m%s
Select Fields	0;1;2;3;4
Select Logs	
Date Format	DD-MM-YYYY

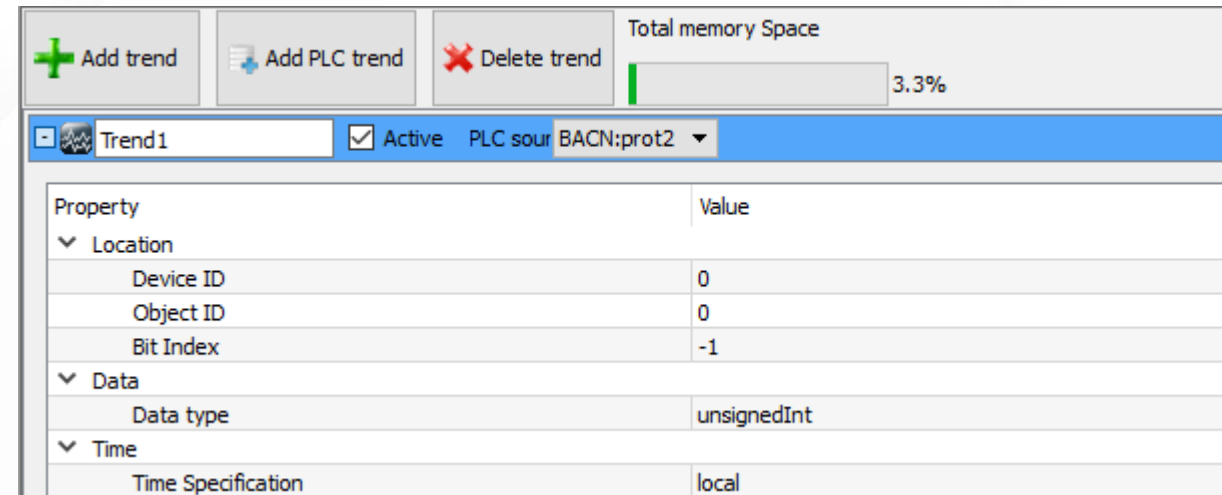
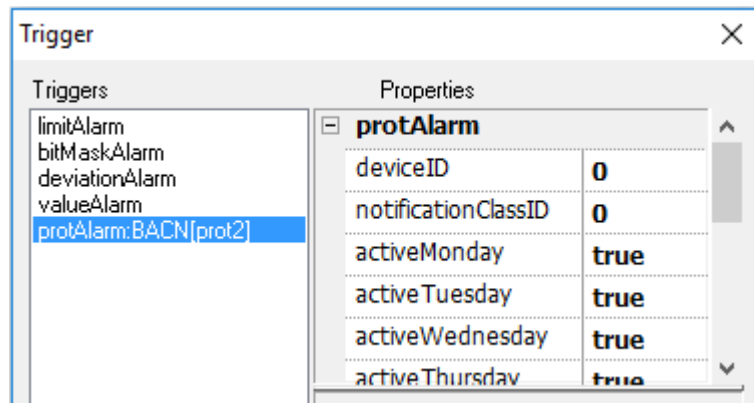
CSV Fields

Fields

- ☒ DateTime
- ☒ Date
- ☒ Time
- ☒ Value
- ☒ Quality

BACnet

- Support for BACnet native Alarms (Intrinsic reporting)
 - Allows defining range of time to be notified for alarms
Ex. Mon..Wed / 7:00:00 AM .. 10:00:00 PM
- Support of BACnet native Trends
- Standard alarms/trends widgets available for visualization



Direct Serial Communication Protocol

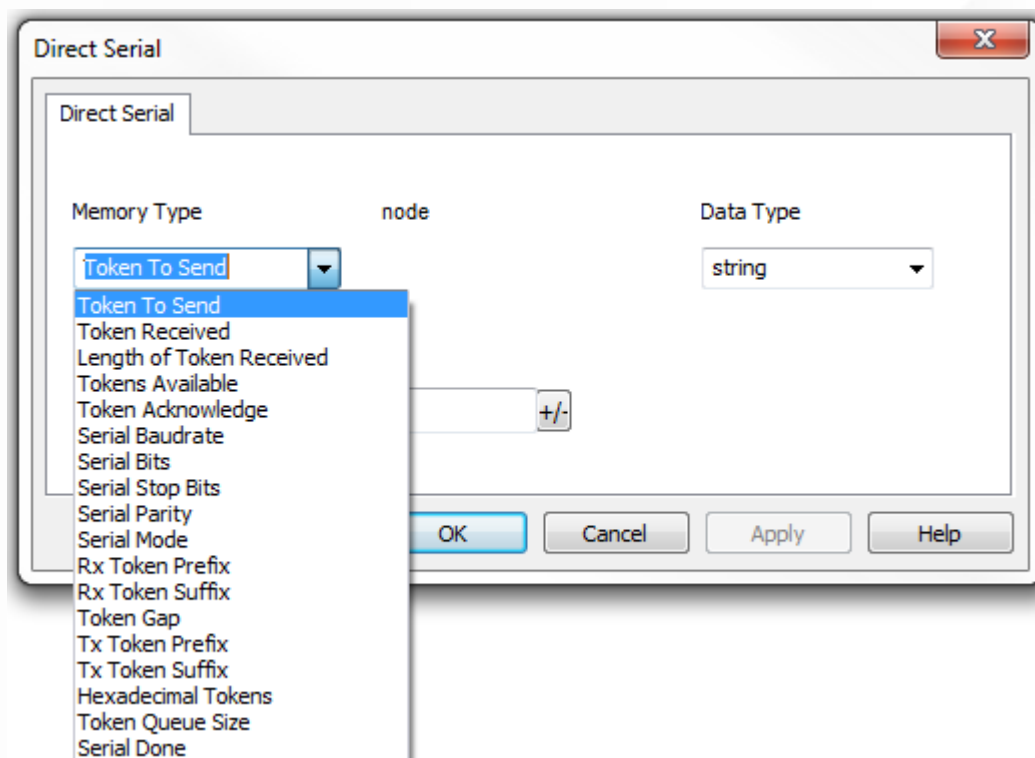
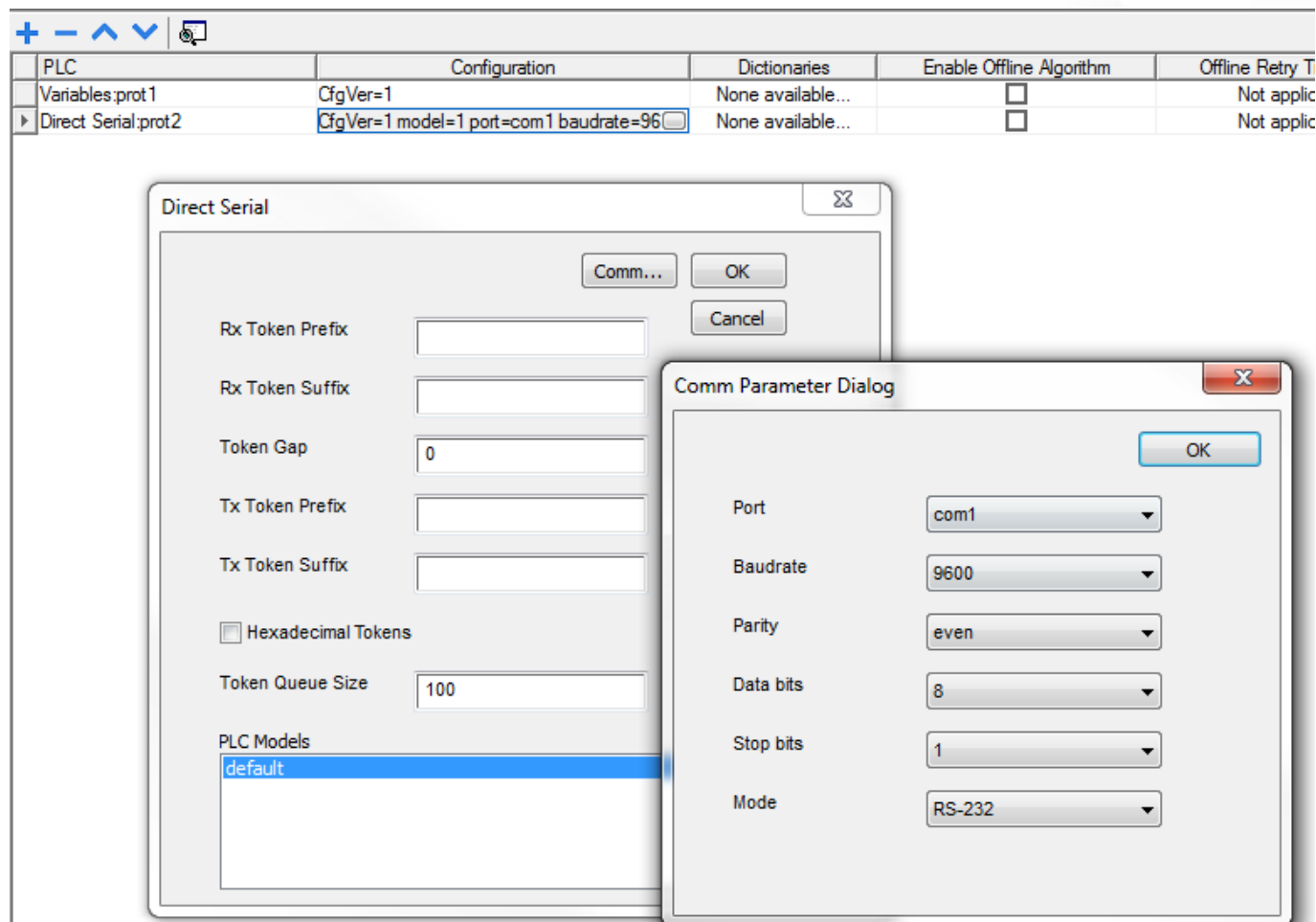
Make your own serial protocol for JMobile!

Flexible solution for communicating with third-party serial devices:

- RFID readers
- Barcode scanners
- Printers
- Modems for sending SMS or AT Commands
- Multiple protocol instances supported
- Frame detection based on token prefix/suffix or based on time gap
- Works for RS-232, RS-422 and RS-485
- Programmable size of RX buffer
- Use Javascript to program logic of communication



Direct Serial Communication Protocol 2/2



Direct Socket Communication Protocol

Flexible solution for communicating with third-party Ethernet devices

Make your own Ethernet protocol for JMobile!

- Realize IP-based protocols without the need to develop a dedicated protocol
- Multiple protocol instances supported
- Support for TCP & UDP packets
- Data access tokens based (data string can be surrounded by prefix and suffix)
- Allows to configure RX/TX token prefix & suffix, gap between tokens (ms), max queue size
 - Prefix/suffix strings in hex format only
 - Tokens format: plain ASCII | hex strings.
 - Connect / Connection status used to start/stop connection in TCP and related status
 - All protocol parameters can be overwritten at runtime
 - Use Javascript to program logic of communication
 - provides the access to token queue and sending function
- Working examples available as reference (Modbus TCP client, simple chat UDP)



Direct Socket Communication Protocol 2/2

PLC Configuration

Direct Socket prot 1 CfgVer=1 socketType=UDP remoteAddress=127.0.0.1 remotePort=502 localAddress=C... None available...

Direct Socket

Socket type: UDP

Remote IP address: 127.0.0.1

Remote port: 502

Local IP address: 0.0.0.0

localPort: 0

Broadcast type: Global

Rx Token Prefix:

Rx Token Suffix:

Token Gap: 0

Tx Token Prefix:

Tx Token Suffix:

☐ Hexadecimal Tokens

Token Queue Size: 100

OK Cancel

Direct Socket

Memory Type: Token To Send

Data Type: string

Arraysize: 255

Token To Send
Token Received
Length of Token Received
Tokens Available
Token Acknowledge
Socket type
Remote IP address
Remote Port
Local IP address
Local port
Broadcast type
Rx Token Prefix
Rx Token Suffix
Token Gap
Tx Token Prefix
Tx Token Suffix
Hexadecimal Tokens
Token Queue Size
Done
connection status
connect

OK Cancel Apply Help

```
var tagMgr = project.getWidget("_TagMgr");
var ProtID = "prot2" //set this string according to your protocols schema
//.....
var avail = tagMgr.invokeProtocolCommand(ProtID, "tokens_available", "");
while (parseInt(avail) > 0){
    //get the next token
    var str = tagMgr.invokeProtocolCommand(ProtID, "get", "");
    // acknowledge current token
    var status = tagMgr.invokeProtocolCommand(ProtID, "token_ack", "");
    // get number of available tokens in queue
    avail = tagMgr.invokeProtocolCommand(ProtID, "tokens_available", "");
}
```

Review of project limits for HMI devices

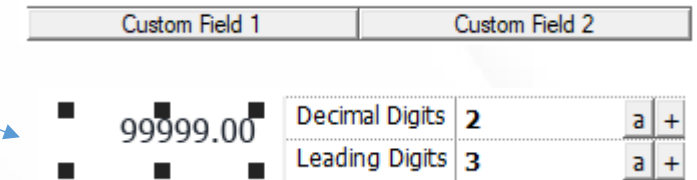
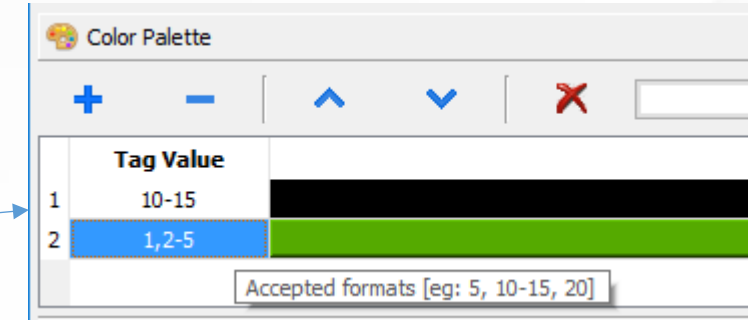
Updated limits for HMIs with multicore CPU (eX707..eX721, eSMART107, JSmart)

- Up to 10 curves for trends
- Up to 200 dialogs
- Up to 64 print reports
- Up to 8 protocols
- Up to 64KB Javascript code (for all Linux platforms, including eSMART and eX705)
- Up to 24 languages (for all Linux platforms, including eSMART and eX705)
- Increase max size for User file in update package (useful for pdf files, video, etc).
 - 100MB for eX700 and eSMART
 - 100MB for eTOP500/600 1GHz (UN30)
 - 10MB for eTOP500/600 600MHz / (UN31)



Other Features

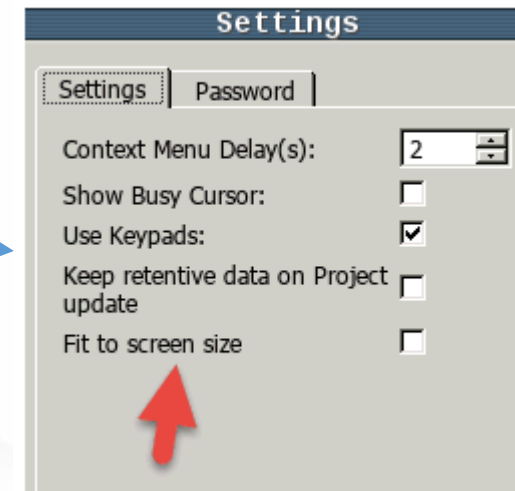
- Multilanguage support for User Management forms
- Trend Cursor for Scatter Diagram
- Added support for Print reports PDF with filename defined at runtime
- New Option to define ranges in color palette
- Added x2 new custom fields to alarms (useful for grouping and filtering)
- New option to define at runtime number of digits in fields
- Custom format support for fields
- New JS APIs for controlling User Management
 - Login, Logout, ChangeUser, etc.
 - Useful for controlling Authorizations by PLC
- Action to cleanup files in a folders older n days



Field : field1	To display	As	Place Holder
Value	123	000123	000#
Number Format	1500	5DC	#H
Custom	1500	5dc	#h
	1500	0005DC	000#H
	123.456	123.46	##
	123.456	000123.456000	000#.#000
	12,200,000	1.22E+07	#0.00E+00
	12,200,000	12.2E+6	#0.0E+0

Other Features

- Duplicate pages in project view
- Convert to web and convert to native pages in project view
- Added options for OPC UA Server security settings
- Unicode support for text in recipes
- New System variables for controlling VNC Server
- New JS API “project.log(message)” to add custom messages in logger
- Fit to screen option for runtime
- Fixed header for tables
- Help -> Online documents and download
- Added new serial communication protocol Mitsubishi iQ/Q/L SER



JM4Web

Extended support of functions and compatibility with standard HTML5 browsers

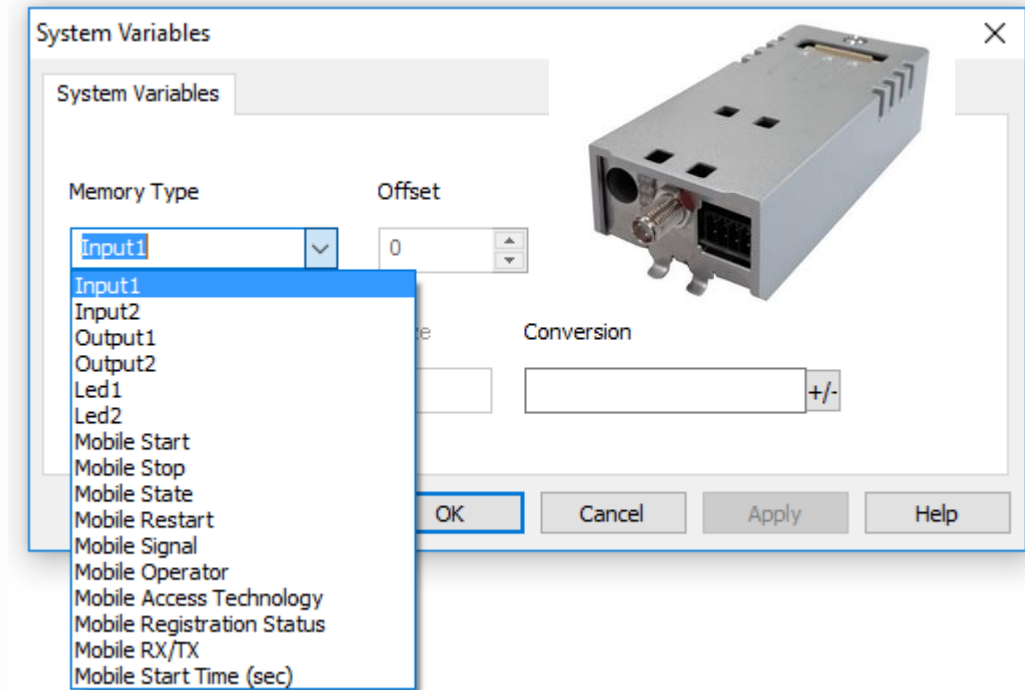
- Added User Management support
- Indexed addressing
- Custom Widgets Full support
- GridLayout support (for responsive design of pages)
- Https protocol support (Linux platforms only) / encrypt traffic between HMI & browsers
- JSFunctionBlock widget support
- Canvas widget support
- Improve performances in page change / caching
- Support form Tags Expressions and Color palette



Support for new hardware products

Extended support for new products:

- PLCM09 3G Modem Plugin (Linux only)
 - BSP support required (configuration with System Settings)
 - Full control via JMobile System variables
 - Added cloud connection control via System Variables
- JSmart705 to JSmart721
- eX707G and eX710G
- eX707FB and eX715FB
- eXware 705
- eXware 707/707Q










Performance

Fastboot for Linux-based devices with CPU 800 MHz or higher

- Down to 8 sec (average) from power-on to project ready reached on new special HMIs design for automotive industry. Down to 12 sec for eX7xx, JSmart and eSMART 1GHz
- New flag in System settings allows switching on/off fastboot mode
- Postponed starting of all not necessary runtime services after first 30 sec
 - es. SSH, FTP service, Web service, update engine, System Settings
- Prioritized UI loading of project compared to other parts
- Optimized CODESYS boot time

fastboot

MENU	Service Settings	ADMIN 
	Autorun scripts from external storage	
	Avahi Daemon	Off 
	Cloud Service	Off 
	Fast boot	
	Device	Off 
	SNMP	Off 



CODESYS

- CODESYS 3.5.12
 - Available as option on demand
 - Support for HMI System variables (brightness, SD/USB storage status, etc)

