



INDUSTRIAL AUTOMATION SOFTWARE
progea 

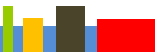
 **Automation
Combine**

MoviconDAY

Held by

Jean Marc Willems Business Development Manager - Progea
Sergio Somaschini Export Manager - Progea

Bangalore, June 9, 2017





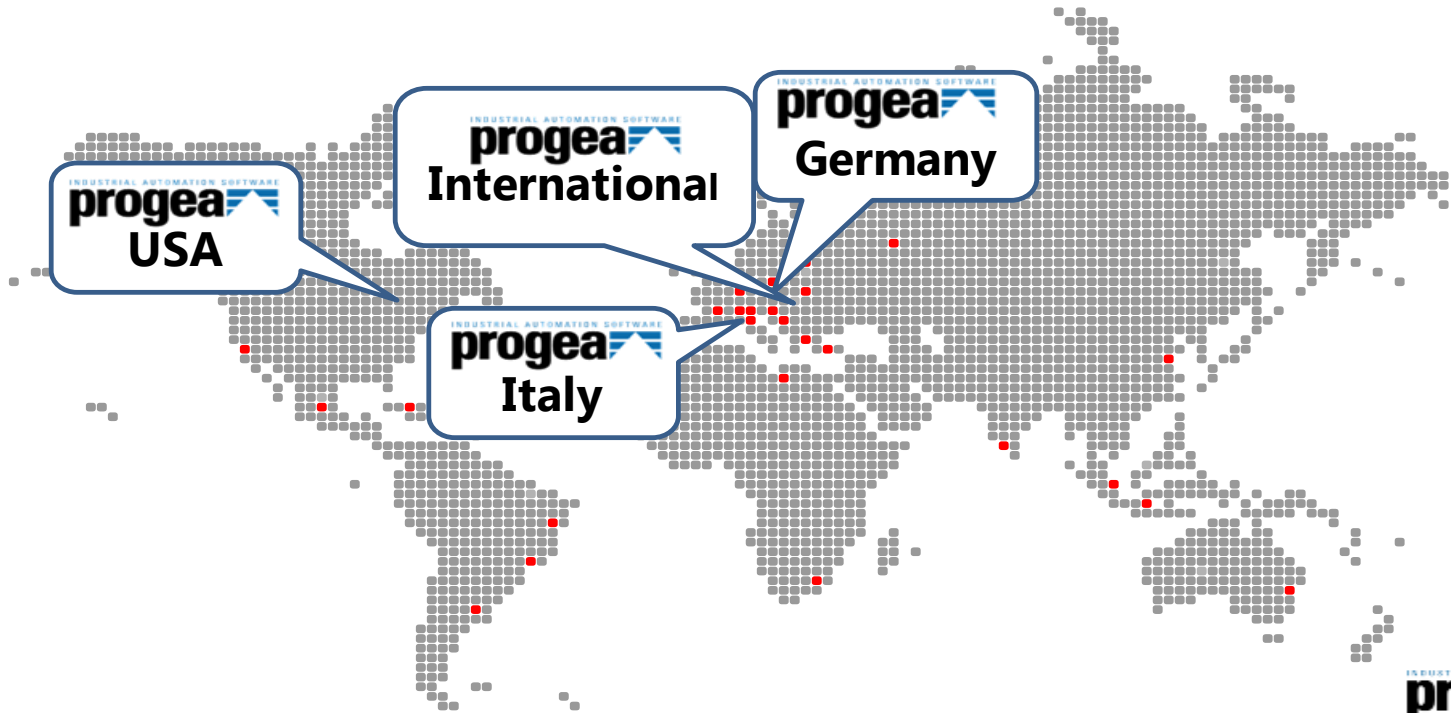
Agenda Progea Seminar

- Progea's history and mission
- Current and future trends
- Progea's vision
- Progea products overview
- Movicon 11 SCADA
- Progea insight on FDA 21 CFR part 11
- How to configure Movicon 11 to meet requirements of FDA 21 CFR part 11
- Movicon 11 Case Histories related to FDA 21 CFR part 11
- Automation Platform NExT suite
- Movicon NExT SCADA
- Movicon NExT Pro-Energy
- Movicon CONNExT OPC UA
- Movicon NExT Pro-Lean
- Future developments
- Open questions and conclusion





International Presence

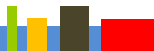




Progea: Innovators by DNA



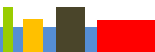
- Research and Development at the state of the art for Automation Software
- Among the firsts manufacturers of a Windows based Scada (Win3.11)
- Among the firsts offering servers scalability from Win64 up to Windows CE
- Among the firsts supporting Web-based HMI technologies
- Among the firsts offering architectures based on XML technologies
- Among the main supporters of OPC UA technology
- Among the firsts introducing a Scada/HMI platform based on WPF/XAML
- Among the firsts pioneers applying augmented reality to supervision
- Among the firsts pioneers of HMI applications running on Win10 IoT





What are the future trends?

- New generation for Scada/HMI technology
- Automation Industry 4.0
- Connectivity
- Industrial IoT
- Augmented Reality
- SQL, Cloud and Big Data





What are the future trends?

- The Industry 4.0 issue is becoming very popular today and will for sure in a short future push the companies to invest and innovate in communication and interconnection between devices.
- Another important, very popular and promising trend is IIoT (Industrial Internet of Things). This subject is already actual and part of our today life but implemented on a large scale, it will induce lots of new technologic solution in a broad range of applications.
- Regarding the new technologies to be available for mobility and communication we can also add the augmented reality that will probably introduce a revolutionary way to interact with the machines. After the smart glasses (Google Glass / Epson Moverio), the Microsoft HoloLens become available.
- Cloud and Big Data: this last subject is part of the 3 previous subjects since the big amount of Data that they will involve has to be collected, centralized and analysed with more robust, efficient and delocalized DataBase solutions.





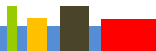
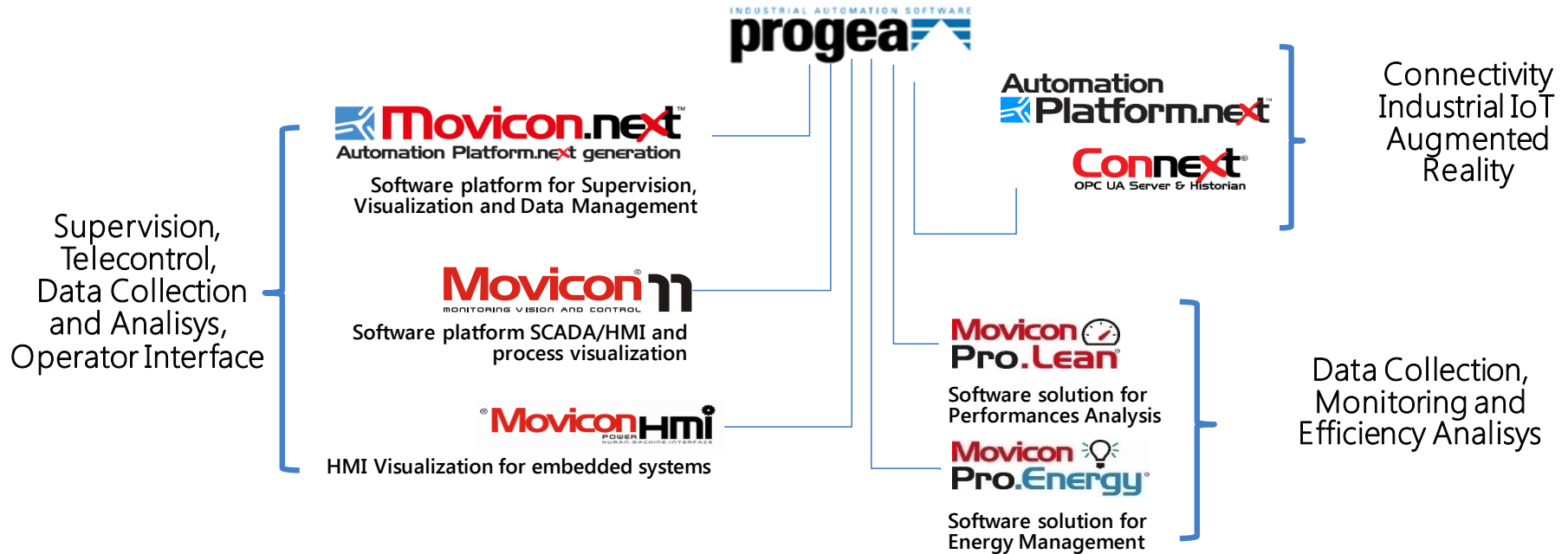
Which Operating Systems?

- Microsoft has announced since some time now the end of the sales of windows 7 and we also knows that windows CE is not under development any more. What does this means ?
- Microsoft has declared to focus on Windows 10 as an universal platform scaled and adapted to any kind of devices: for the Servers, the workstations, tablets, the AR, the electronic boards etc. As example are already available: Win10 IoT Core, Win10 IoT Enterprise for the embedded devices or electronic board, Win10 Mobile for the phones, the Windows Universal APP for PC, Tablets, phones, Windows 10 for Hololens, the Passport recognition system (biometric recognition system), The services of IoT Azure...
- Progea has always been part of the Microsoft partner developers network and retain than more than ever the new strategies defined by Microsoft and the new operating systems available will represent the technological basement for the future industrial technologies that will more and more be integrated with the IT technology.





Products and Technologies





INDUSTRIAL AUTOMATION SOFTWARE
progea

OPEN

FLEXIBLE

POWERFUL

SECURE

EASY-TO-USE

INTUITIVE

Movicon[®]
MONITORING VISION AND CONTROL

Overview

Affordable, Open, Flexible & Easy to Use SCADA/HMI Software



INDUSTRIAL AUTOMATION SOFTWARE
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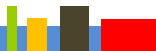
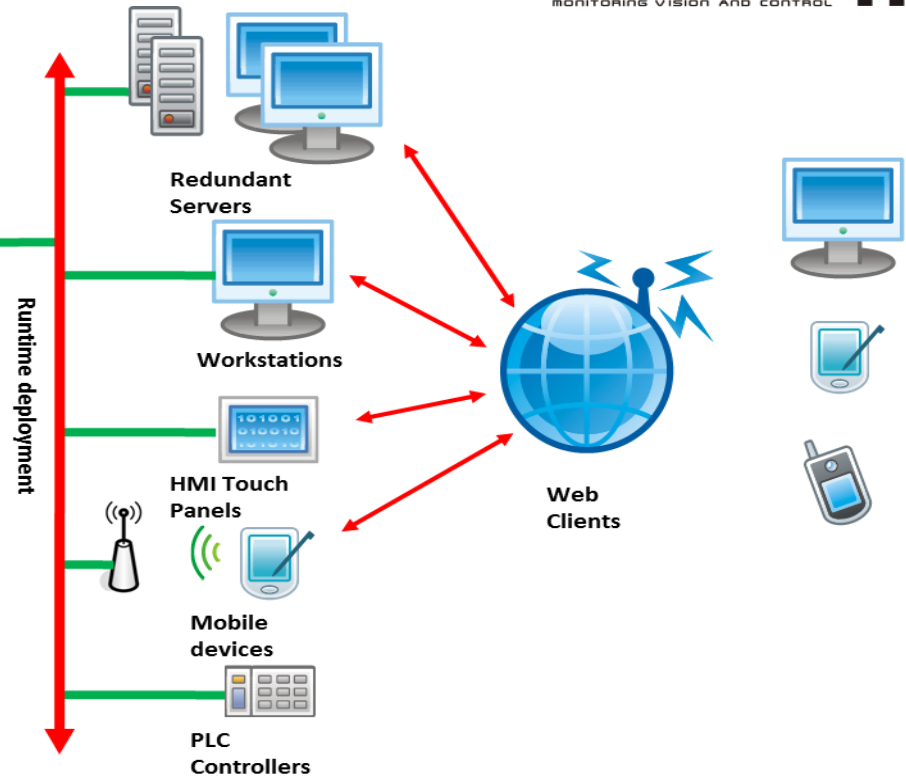




Single Development Studio



- Open and Modular Structure
- XML projects for drag and drop development
- One Editor tool for all platforms
- Always compliant with latest Windows OS
- Ability to encrypt project resources

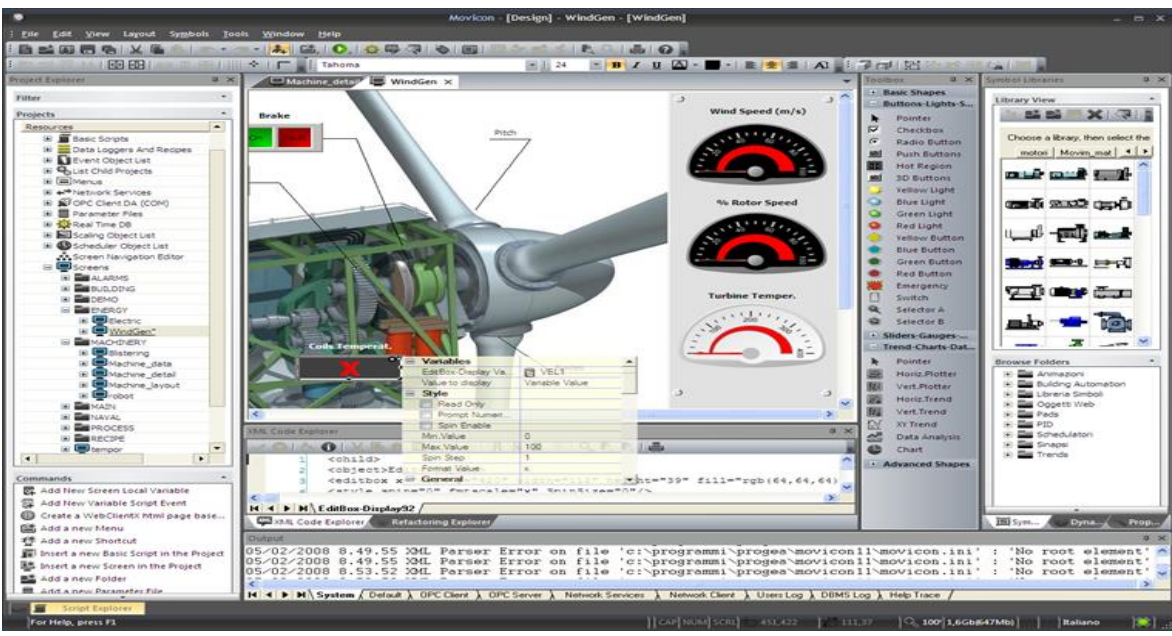




Editor

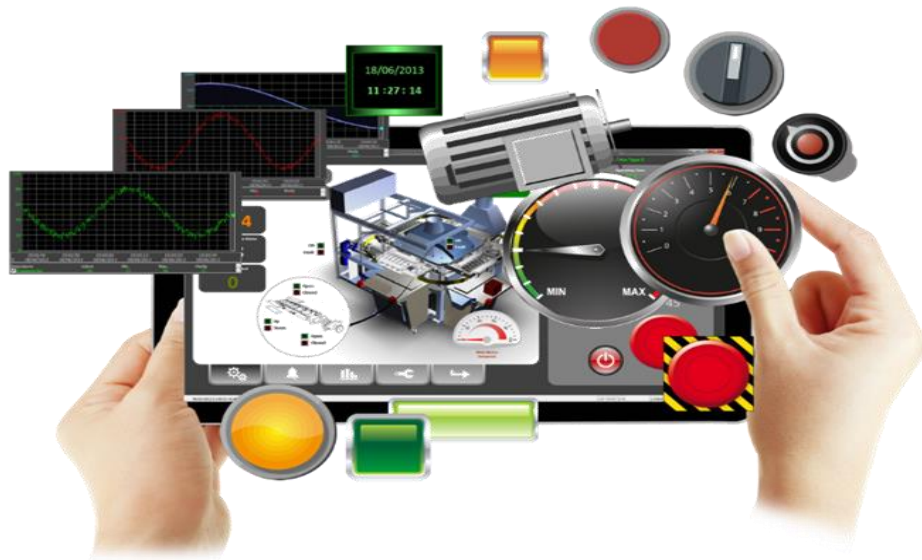


- Intuitive & Easy To Use
- Object Oriented
- Multi Select, Drag and Drop
- Rich Libraries for all Industries
- Tools
 - ✓ Importer & Exporter
 - ✓ Cross Reference List
 - ✓ Autocorrect
- Help
 - ✓ Online
 - ✓ Contextual Help

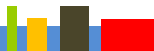




Vectorial Graphic



- Built-in Editor for Vector Graphics
- Sizing is Independent from Screen Resolution
- Formats:
 - BMP, PNG, JPEG, GIF & WMF
- Rich Libraries of Vector Based Object
- 32 Graphic Layers Per Screen
- 16 Different Dynamic Animations
- Power Templates for Auto Configuration



Connectivity

Add a new Comm. I/O Driver

Add Comm. I/O Driver

List Available Comm. Drivers

- Phoenix Contact
- Profibus DP
- RockWell Automation
- Saia-Burgess
- Schneider Group
- Shared Memory
- Siemens
 - Ethernet S7-200-300-400 TCP
 - Ethernet S7-300/400 TCP
 - S5-AS511 Cpu Port

Comm. Driver Properties

Property	Value
General	
Name	S7 TCP
FileName	SiemensTCP.dll
Version	
Last Error	

Supported protocol: TCP protocol
Supported devices: Siemens PLCs, S7 200, 300, 400 series, VIPA PLCs and compatible devices
Other requirements: Siemens Ethernet board

OK Annulla ?

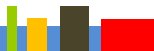
- Over 70 Native Drivers
- Tag Importer for most Drivers
- OPC DA, AE
- OPC UA Server / Client Connectivity
- Shared DLL Driver
- Driver Development Options
- Driver SDK available



Alarm Management



- Configurable Alarm Windows
- Automatic Event Logging
- msec Alarms & RTU Timestamp supported.
- Up to 1024 Priority Levels
- Command Support for Alarm & Events
- Alarm Manager Exporting
- Ready to use Alarm Reports
- Document Alarms via HTML & CHM

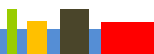




Data Storage

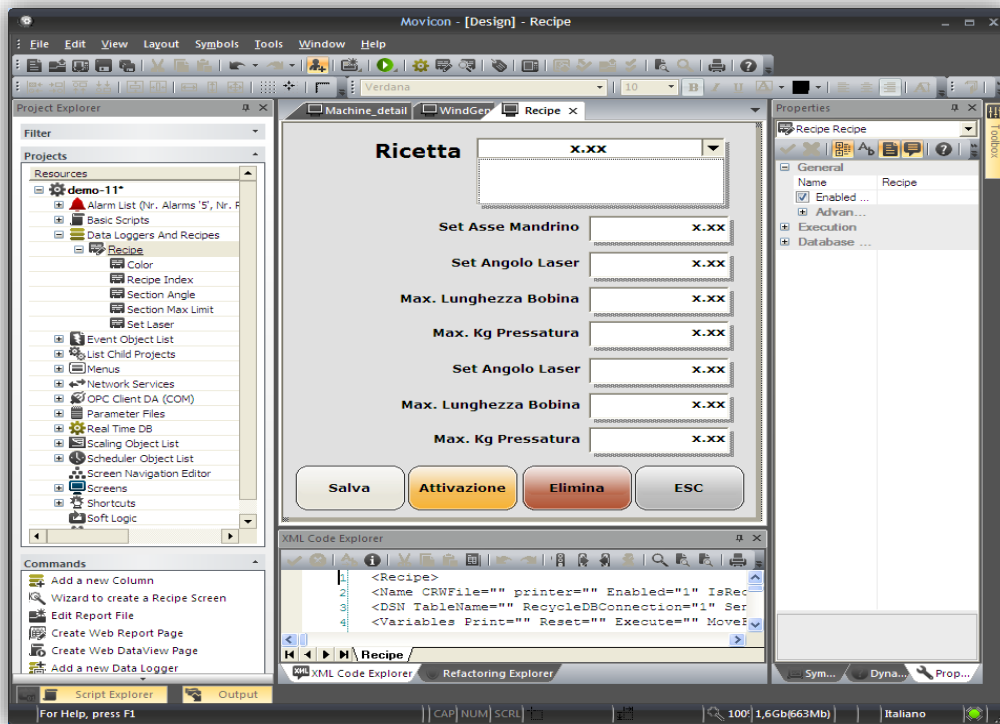


- All Open Formats supported:
 - ODBC, SQL, MYSQL, ORACLE,
- Data Logging
 - On Time, On Change
 - Trigger (50 Msec).
- Audit Trail Engine
- Editable Grids
- Automatic Data Recovery
- Hot backup Redundancy





Recipes Management

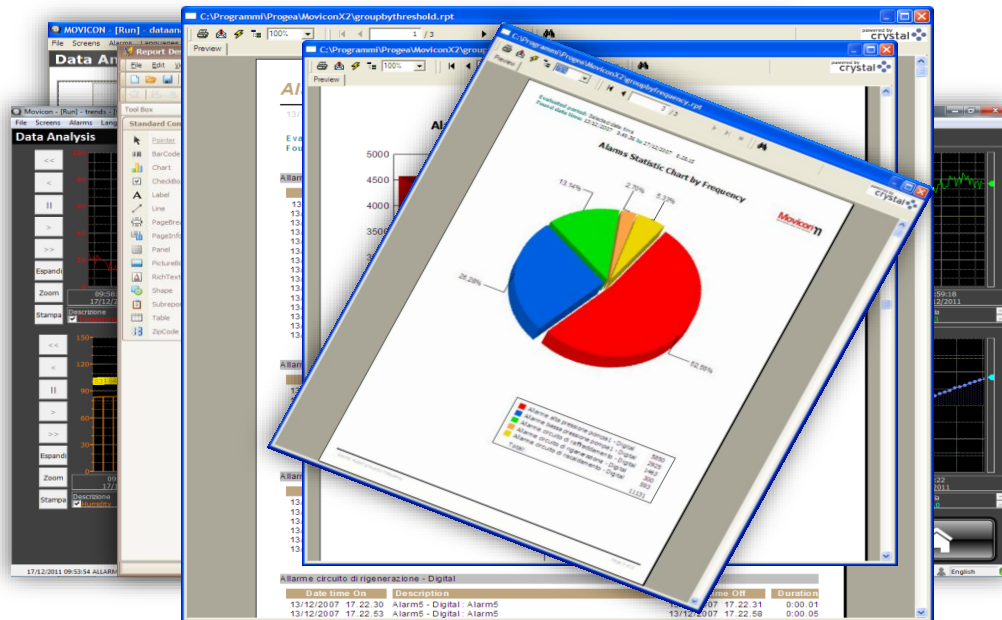


- Recipes Can be Saved in any DB Format
- 2 Types of Recipe Objects Supported
- Handles Simple to Complex Recipes

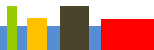




Powerful Trend and Reporting Tools for Analysis



- Trend Object for Real time or Historical Data Plotting
- Powerful Report Tool to View, Print, Save, Send or Publish Reports over the Web
- Ready to use Alarm Reports

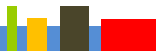




Logic Engines

```
66 A T 6
67 = T 5.15 //tempo CLOCK
68
69 A T 6
70 AN APP_MEM2
71 = APP_STROBE2
72 S APP_MEM2
73 AN T 6
74 R APP_MEM2
75
76 A APP_STROBE2
77 AN rob_auto
78 IC Counter4.1 // increase counter
79
80 L Counter4
81 L KD4 // If counter > 4, then reset
82 Y=
83 LC KDO
84 TC Counter4
85
86
87 // Simulation trends and analogic values
88 // the mathematical formula calculated is:
89 // k1*(1-exp(-k2*tempo)) * (1+k3*sin(k4*tempo)) +k
90
91 AN T 1
92 = T 2.1 //tempo CLOCK
```

- VBA or VB.NET Scripting
- Scripts can Run On Demand, Event, Loop
- Scripts can be Nested into Graphics or Vector Symbols and Reused
- Integrates with all Movicon Modules
- Multithreading
- Online Debugger
- Easy Reference COM & .NET Objects
- Vast Libraries of Examples





Multilanguage

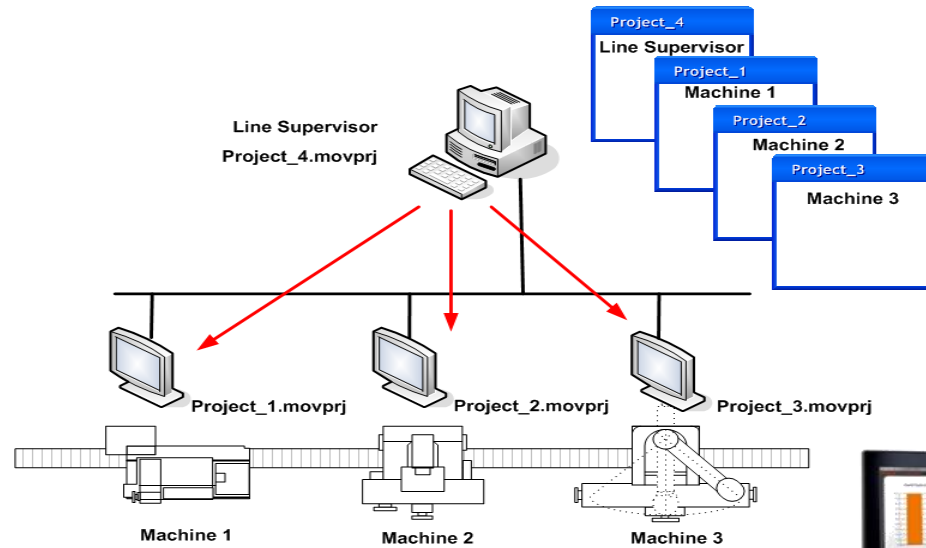
- Editor available in 7 Different Languages
- Project Language Switching via Easy to Use Strings
- Switch Between Languages in Edit & Runtime





Networking

- TCP, UDP or HTTP Transport Protocol
- Create a Project in a Few Mouse Clicks
- Projects can be Modular
- Thin Client & Terminal Server Available





Movicon® WEB CLIENT

Movicon®
MONITORING VISION AND CONTROL



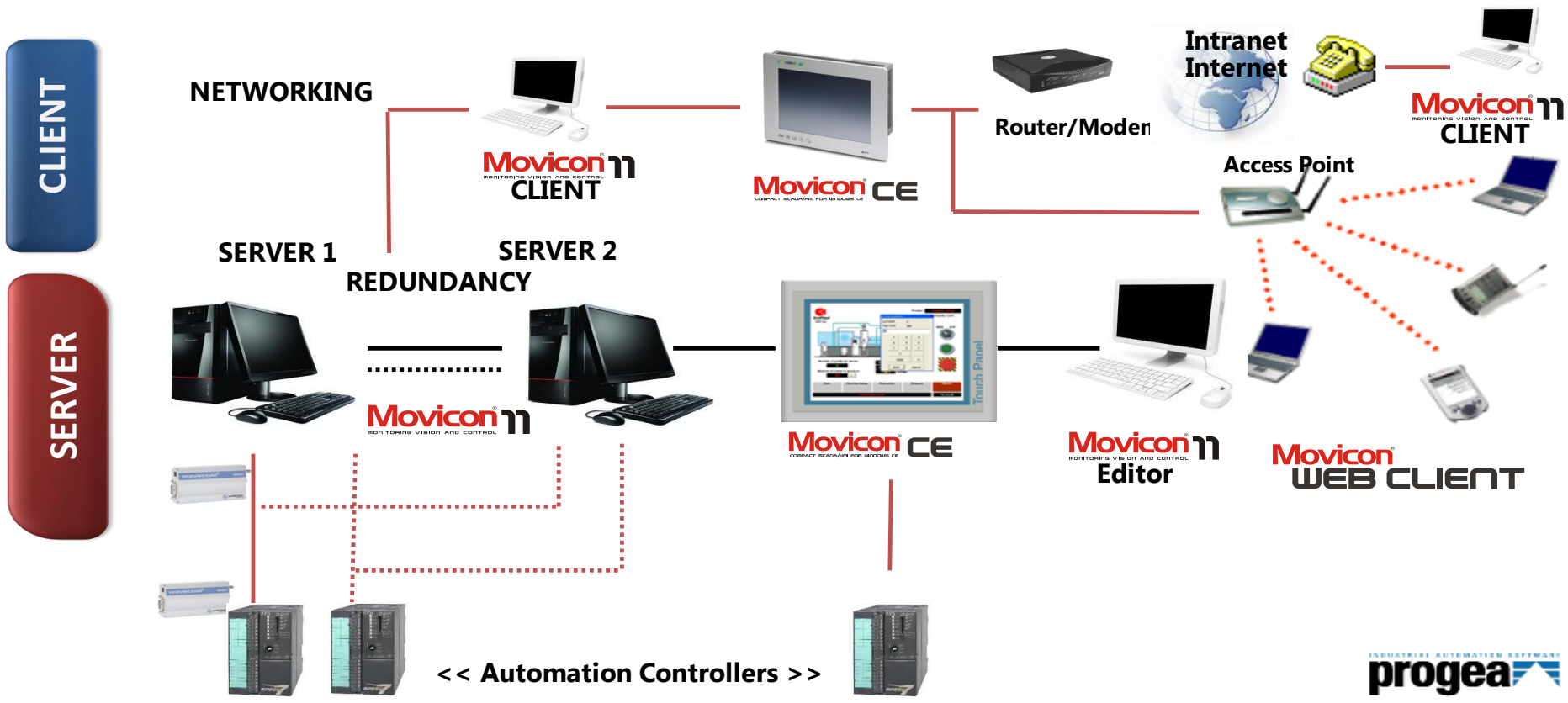
- Thin Web Client Solution
- Tablet or PC
- Web Browser Tablet or PC
- App for Android, iPad & iPhone
- Auto-resize & Zoom
- Supports all Features

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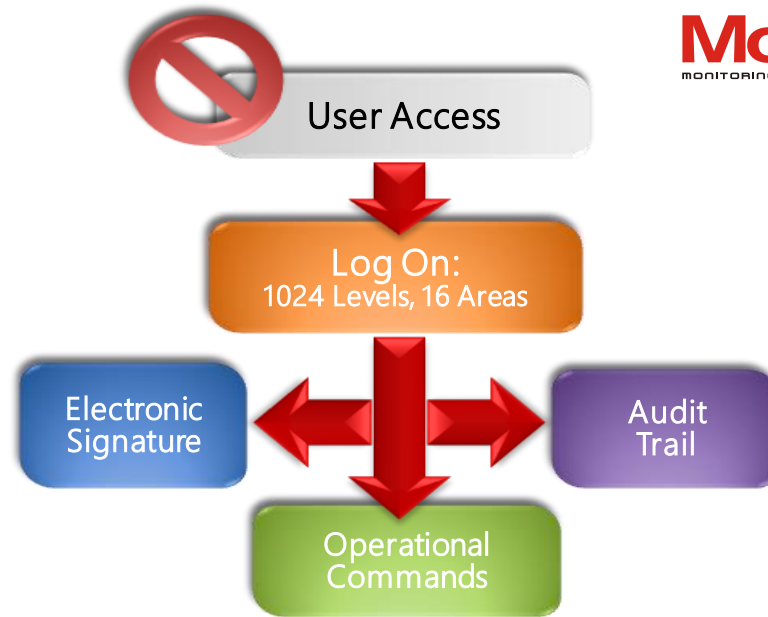
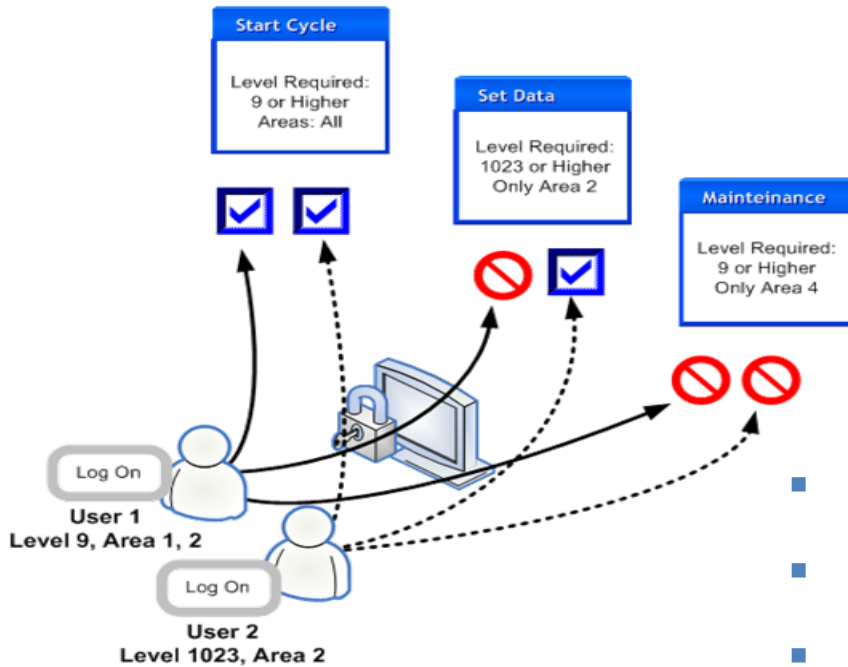


System Architecture

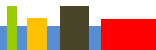




Security / User Management



- Up to 1024 Hierarchical Levels
- Up to 16 Customizable Object Levels
- Windows Active Directory Integration
- User Management Available at Client

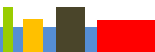




Progea insight on FDA 21 CFR part 11



- Designed to help Develop Applications Compliant GAMP 5 & FDA 21 CFR Part 11
 - Audit Trail
 - Encryption
 - Electronic Signature
- [White paper available](#)





References and Case Histories

Comecer - Radiopharmaceuticals

SPH Group - OCR print control

Prati Donaduzzi – Supervision System

Tecnogen – Supervision System

Industrie farmaceutiche Menarini
Supervision System

Not only Pharma: Creamery
upgrades with Movicon SCADA





Top 10 Reasons to choose Movicon 11

- 1. Full scalability:** Our solution is hardware independent; running on any Windows OS: CE/XP/7/8/Server, Pocket PC, Embedded, 32/64 bit and fully vector based, adapting the graphic to your target resolution.
- 2. Modern:** The projects are XML based and offer the support of the latest Microsoft technologies for ease of use and seamless integration with your third party solutions.
- 3. Low TCO/Reliable:** Our software has obtained several Microsoft certifications that guarantees intuitive handling, with drag & drop tools as well as a full support of the Microsoft standards for integration with third party solutions.
- 4. Openness:** Standards provided, such as: vector based editor for creating your own objects, a robust script engine for customizations, Database plug-ins to let you use any standard database format, OPC and more.
- 5. NO extra Historian** package is required to save historic data in SQL, Oracle, MySQL etc...
- 6. Reporting:** The industries most advanced report designed and manager to simplify runtime report creation and customization.
- 7. Anywhere:** Powerful Web client tools based allowing you to publish your application in a few mouse clicks and to retrieve your data remotely via desktop, tablet, smart phone etc...
- 8. Connectivity:** Powerful networking capabilities for setting up client/server solutions. We offer a wide range of free drivers to connect to your hardware as well as OPC client/server connectivity.
- 9. Pricing:** Our products are fully scalable in terms of features and licensing.
- 10. Affiliations:** Progea is an active member of the OPC Foundation, a Microsoft certified partner and UNI EN ISO 9001-2000 certified.



Movicon.next™
Automation Platform.next generation

INDUSTRIAL AUTOMATION SOFTWARE
progea

- OPEN
- FLEXIBLE
- POWERFUL
- SECURE
- EASY-TO-USE
- INTUITIVE

Overview

Integrate automation systems at all levels with the most innovative and modern technologies.





Automation Platform.NExT[©] is the modular solution for automation systems of the future

The platform is the best solution for companies who want to have the a baseline for automation systems of the future using state of art technology software based on

- .NET
- C#
- WPF/XAML
- OPC UA
- Webservices,HTML5.





Movicon®

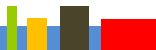
MONITORING VISION APP CONTROL

Movicon.next™

Automation Platform.next generation



INDUSTRIAL AUTOMATION SOFTWARE
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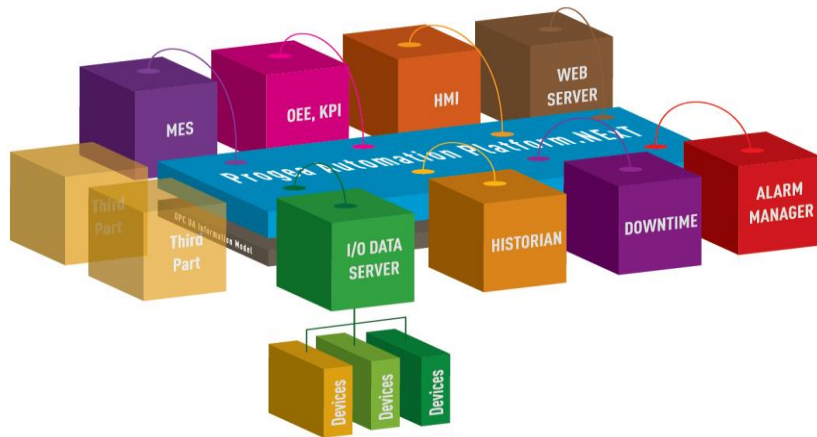
Progea presents Automation Platform.NEXT[©], the new era of industrial supervision

. Based on .NET Framework 4.6. Modular
Architecture made out of plug-in
components.

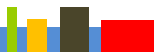




Automation Platform.NExT™ is the open and scalable solution: The various modules can run on the same machine or be distributed and communicate together through OPC UA



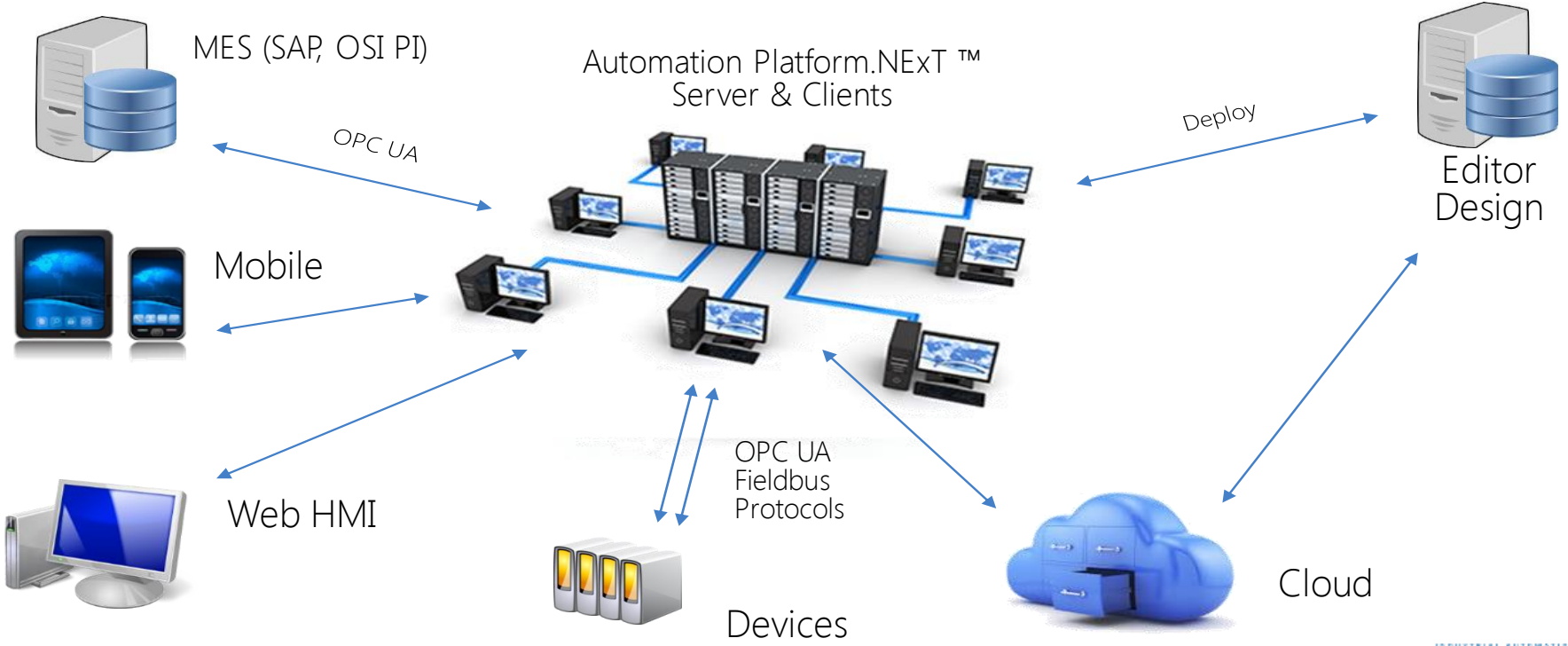
- Open and scalable solution.
- Only required components are installed.
- The components can run locally on same machine or be distributed in network.
- Components have OPC UA connectivity.
- SDK available to insert 3rd party User Controls





Architecture designed for the future

Movicon.next™
Automation Platform.next generation

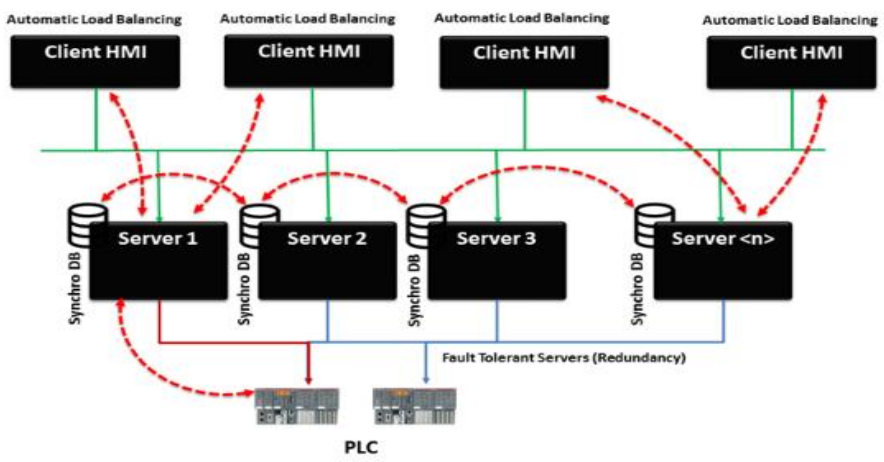


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Redundant Architecture:

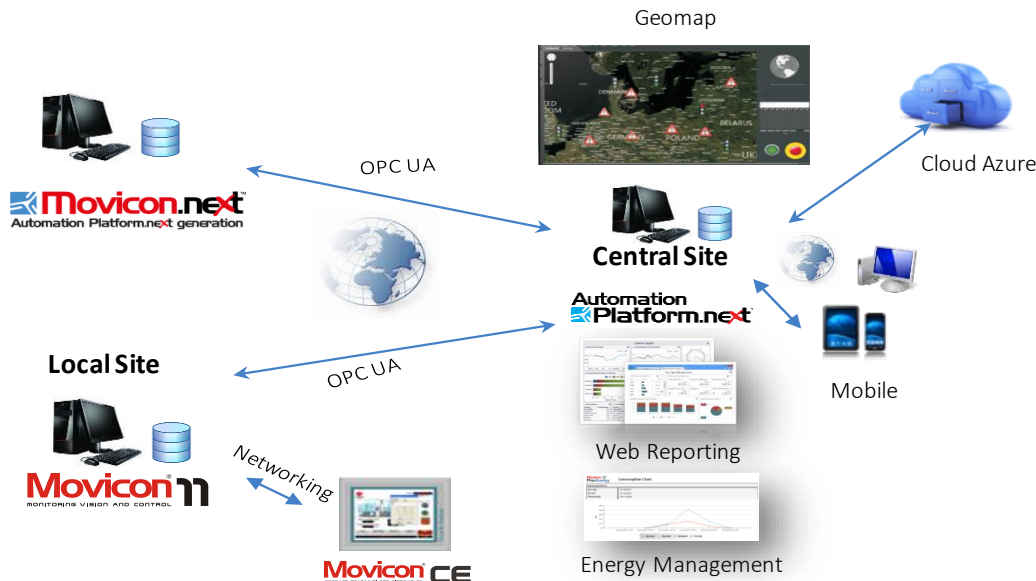


- No limits of servers involved
- Hot backup management
- Redundant DB storage
- Redundant PLC connections
- Load balancing
- Easy configuration





WAN Architecture:



Features HyperScada

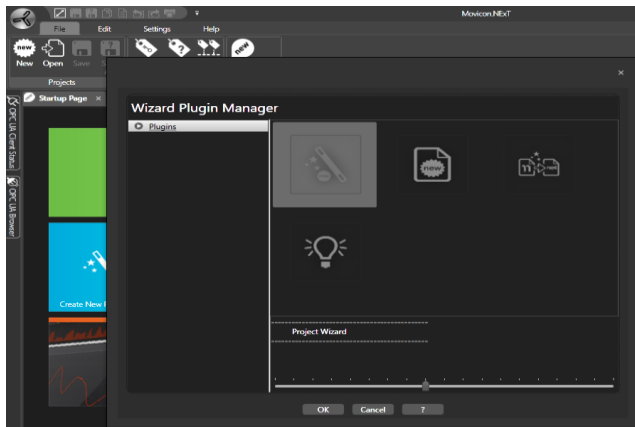
- Drivers
- Vectorial Graphic engine 2D-3D
- Multi-touch
- Alarm manager
- Alarm dispatcher (Sms,Email)
- Log, DataLogging, Historian, Audit Trail
- Connectivity Cloud - Azure
- VB.Net scripting
- Data Recovery (station-DB)
- Array Redundancy
- Reporting -Webreporting (Dataloging, alarm statistics)
- Networking (OPC UA DA-HD-AE)
- Webclient HTML5
- GeoMap
- Energy Management



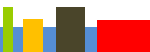


Project Wizards

Pressing the button **New** will open the wizard manager

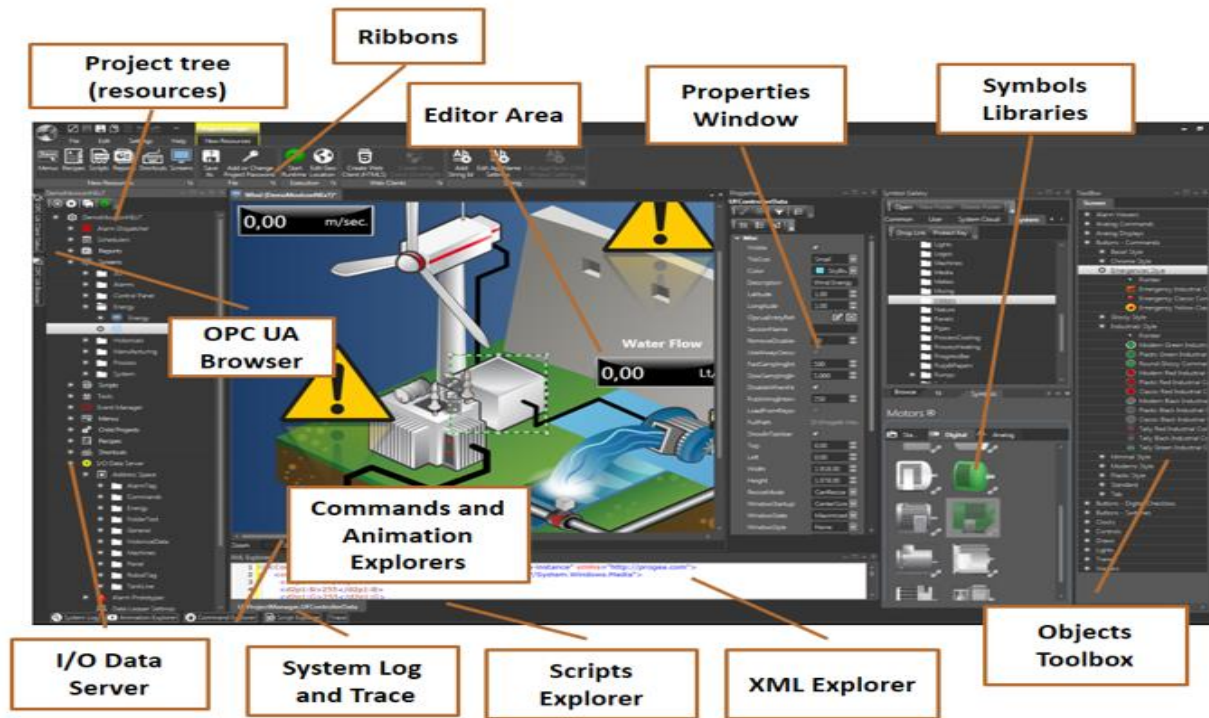


- The first new icon allows to step by step configure a project with his main settings.
- The second New icon allows to quickly create an empty project.
- The icon 11-next allows you to import some resources (tags, strings, alarms, dataloggers) from a Movicon 11 project into a new Movicon.next one.
- The icon with lamp allows to install Pro.Energy
- The icon with Gauge allows to install Pro.Lean.





Workspace – Editor Project Page

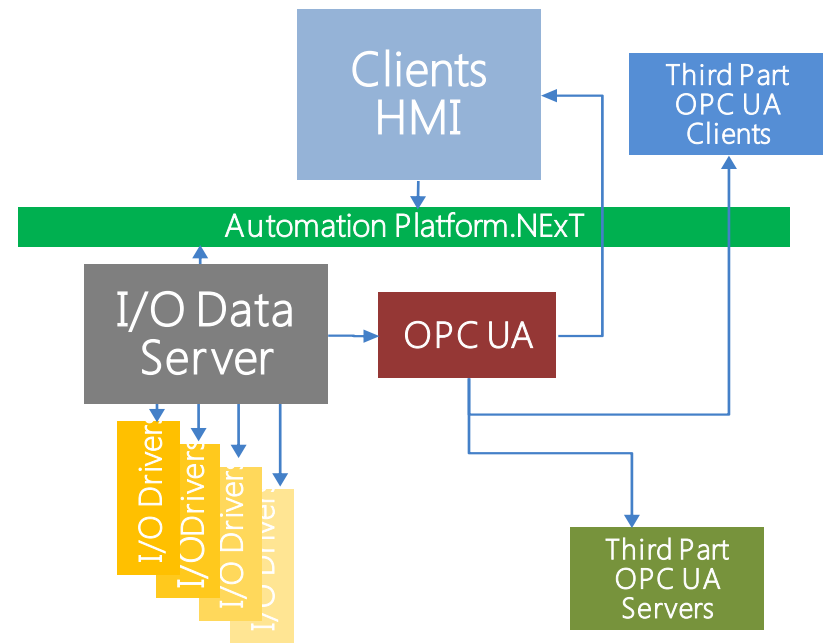




Platform.next™ I/O Data Server

I/O Data Server is the Platform.NExT™
Is the plugin responsible for acquiring the data from the field and dispatching these data on events to the other modules or clients.

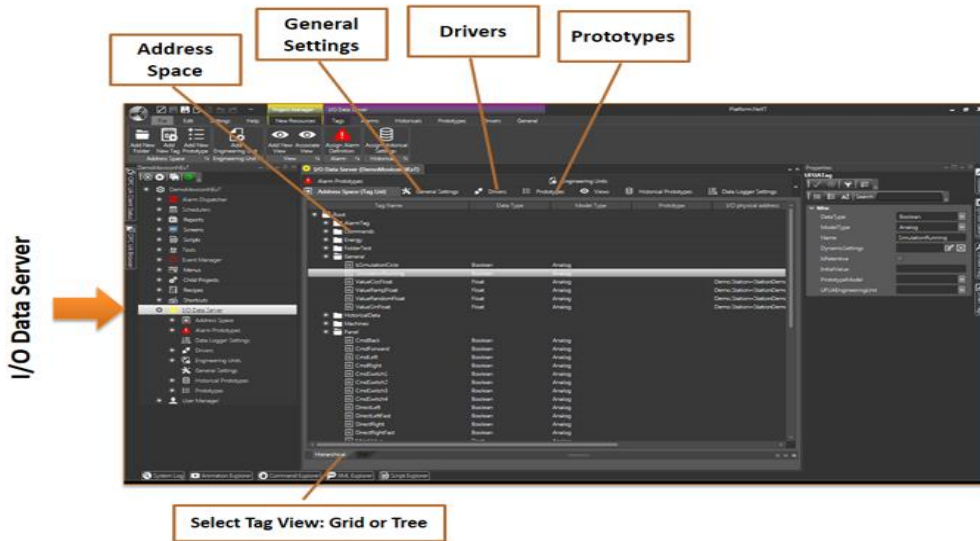
- Libraries of direct drivers written in C#
- All the data types supported by OPC UA/Open PLC.
- Connectivity OPC UA client and server: DA, AE, HD.
- Responsible for: IO Driver, Alarm Management, logics, DB buffering.
- SDK for driver development available.





The IO DATA Server Workspace:

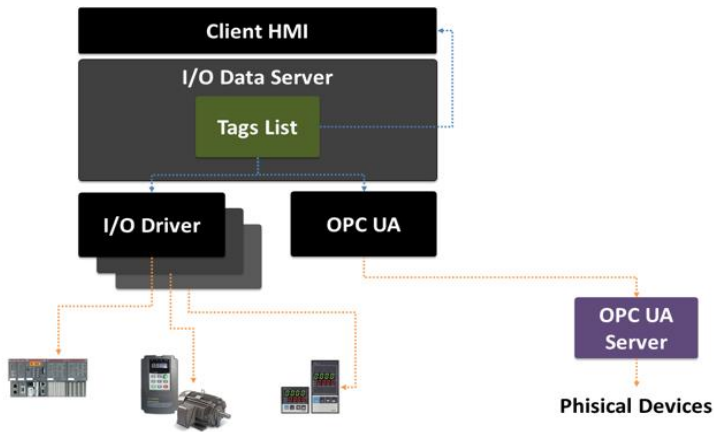
The main windows available are:



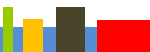
- The settings windows(DB,transport settings)
- The Address Space with the list of Tags
- The Drivers
- The prototypes = the structure data types
- The Historian/DataLogger prototypes
- The engineering units.
- The unit converter
- The Alarm prototypes.
- The redundancy settings.



Native Drivers

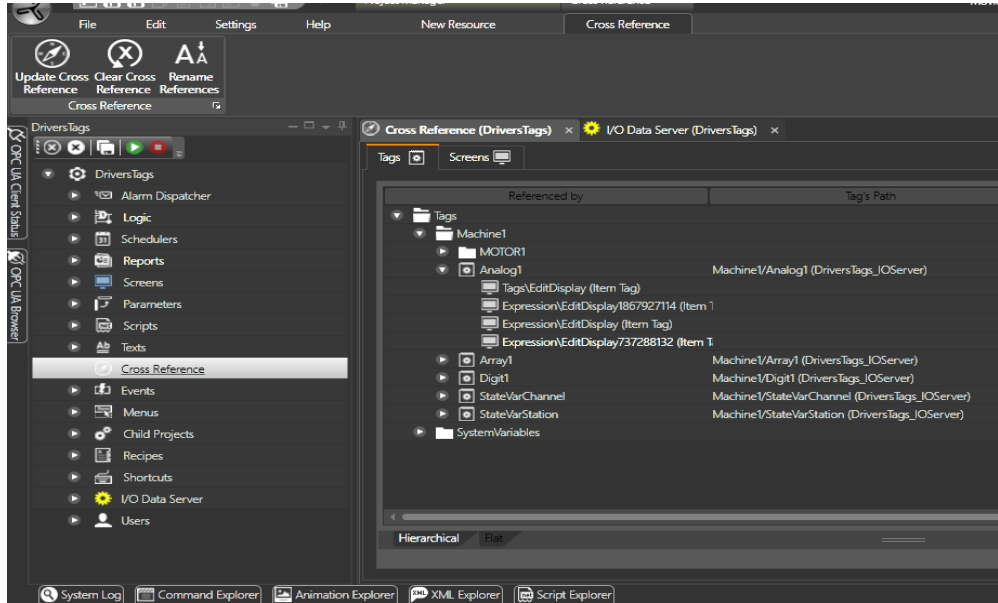


- Library of Free native drivers.
- Built-in Tag importer from PLC.
- Gateway functionality.
- TCP IP drivers offer redundant plc connections.
- Connectivity status and statistics available.
- Set of useful system variables available.
- Possibility to pilot with a bit the plc connection.
- Syntax **VariableName.bitnumber** available.
- Expression Editor.
- The OPC UA Client connector is in the Driver list folder: Progea.
- Each Tag connected to a driver is automatically visible though OPC UA Server.





Tools to assist in development/Debug



Tools Available

Editing

- Import/export for drivers, tag lists, strings
- Cross Reference List (to see where tags are employed or to rename tags).

Debugging

- Info about the client status (Shift F1)
- LOG Window (SHIFT F2)
- Cross Reference list (Shift F3)
- Watch Window (SHIFT+F5)



Import From Tia Portal

Manual Modbus Link

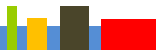
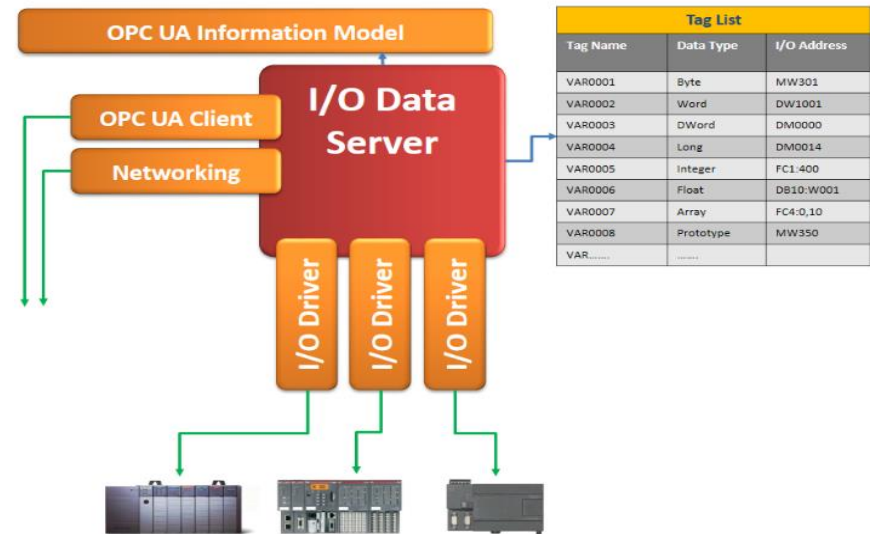
OPC UA Server





OPC UA: Benefits

- OPC UA, Technology of the future
- Information Model native, integrated
- Standard IEC 62541
- OPC UA Server & Client
- Support DA, HD, AE
- Performances & Safety
- Independent & Cross Platform
- Industry 4.0





OPC UA: Benefits

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Automation Platform.next generation



Cyber Security for Industrial Control Systems should not be underestimated

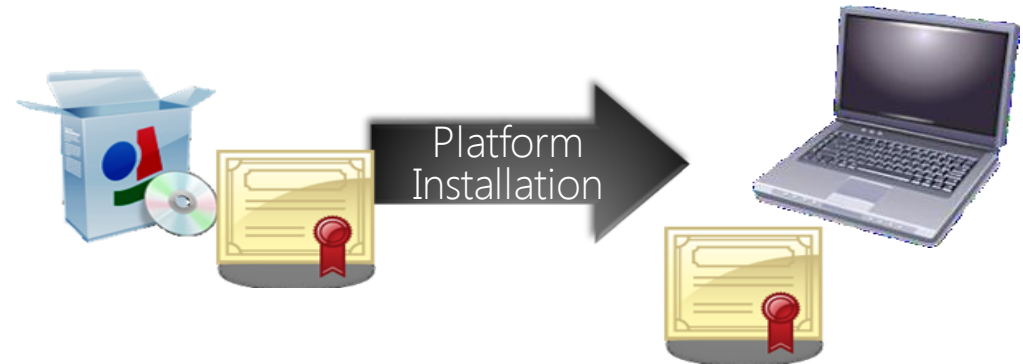
- 1) Automation Platform.NExT™ takes advantage of the high level of intrinsic security offered by the new Microsoft technologies.
- 2) For the Realtime Data Exchange between IO Server and various Modules (like graphic interface) or between client/Server, Movicon takes advantage of the security offered by OPC UA and WCF.
- 3) Built in User Management, for the security at the application level
- 4) Built up application CFR21 Part 11, Gamp5 compliant.

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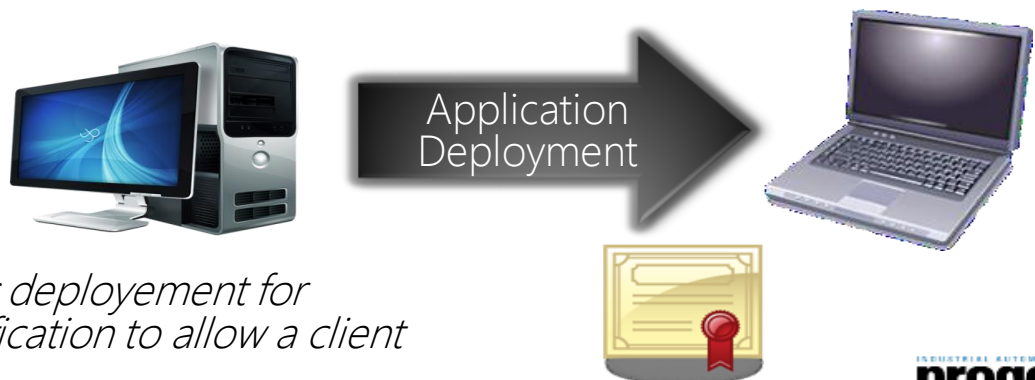


Authentication of software Software Certificates

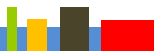


Automation Platform.NExT[™]
*installation uses the Microsoft
certificates and signatures*

Authentication of applications Application instance certificates



*Mechanism of certificates deployment for
application and Authentication to allow a client
server connection*





Protected Sources Files/Messages



- Encrypted project resources and project data.
- Integrity – Signing of Messages



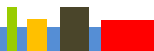
- Confidentiality – Encrypting of Messages





Application Level: Authentication of users

- Username / Password.
- Possible attachment to existing infrastructures like Active Directory
- Full Password Management: min. Length, expiration, auto logoff, password change etc
- ...





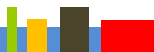
Application Level: User Authorization

 **Movicon.next**[™]
Automation Platform.next generation

- Hierarchical levels for accessing Application area's.
- Graphic Object Access levels could view or Interact with objects => Customized GUI by User.
- Tag access level to read and/ or write tags value.
- Resources access level to could access/change values exposed by resources: Alarms, Events, Methods etc
- Powerful Audit facilities for tracing security related operations



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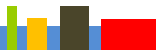
Exceptional 2D and 3D Graphics

Movicon.next™
Automation Platform.next generation

- 2D and 3D vector graphics
- Rich library of symbols and WPF objects preconfigured with top quality graphics
- Expanded support to graphical objects in XAML
- Extensive set of dynamic functions
- Support to all functions needed for manipulating objects in Runtime (zoom, drag, pinch, and more)
- Support to screen styles and layouts

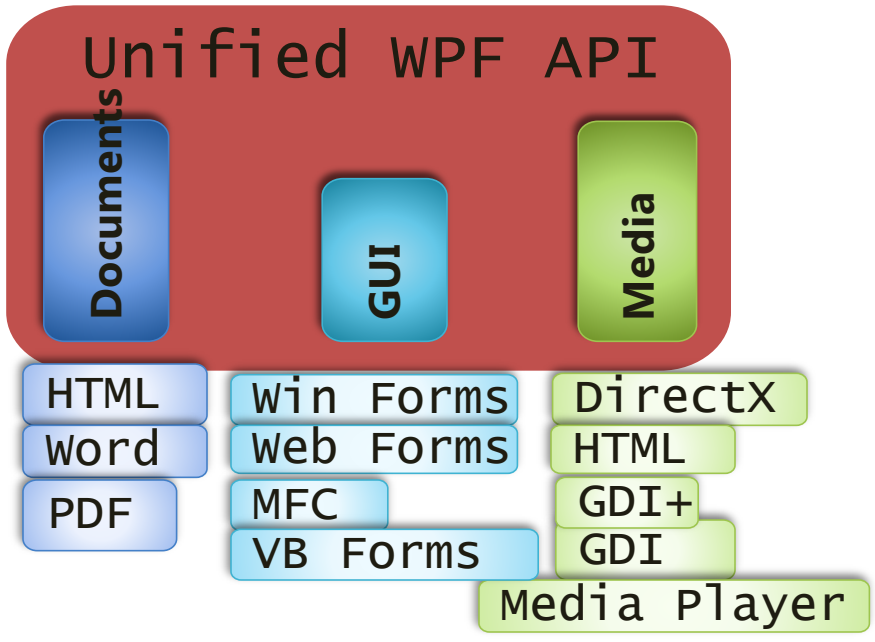


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WPF: Windows Presentation Foundation



- Unified interface for documents, User interface technologies and Media.
- Based on DirectX technologies allows the creation of 2D/3D scalable Vectorial Graphic.
- Use the hardware GPU's, freeing the CPU.
- Use XAML to describe graphic objects an their properties.



- Toolbox
- Symbol Library
- 2D, 3D Animations





New Concept of Navigation



- Tile Interface of Windows.
- Carousel
- Geolocation of projects or Screens.
- Multi Touch.
- Kinect (voice and gestures) support





Geo Scada

Movicon.next
Automation Platform.next generation

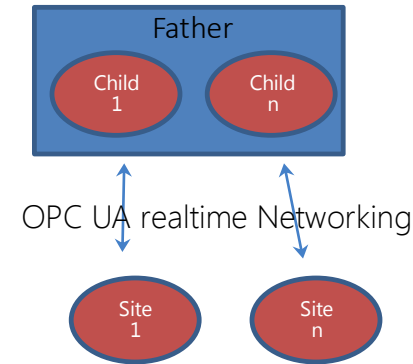
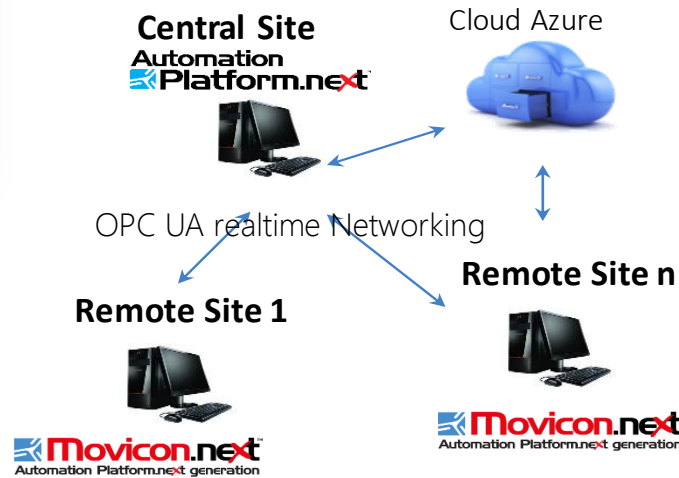




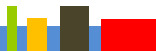
GEO SCADA



- Startup Page with the world map showing Live Plant Info.
- Plant can be geolocalized.
- A click on the map can open the screens of a remote plan (Father-Child).

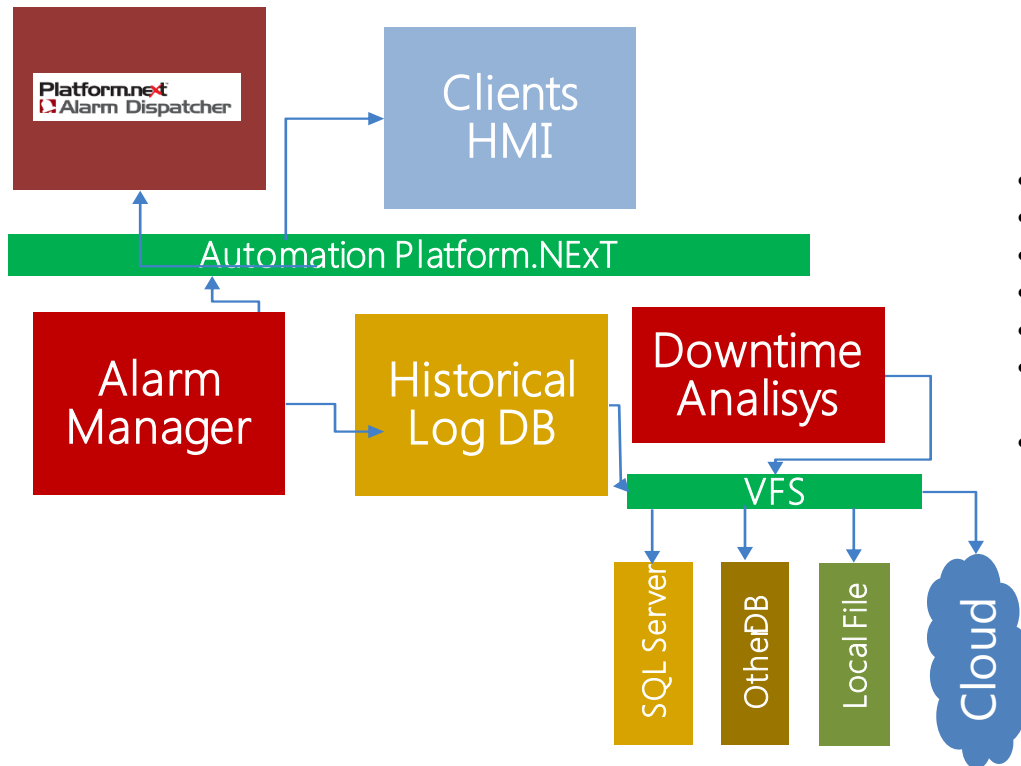


- GPS actual and past position of Vehicles can be tracked.
- Object showed are little screens with transparency



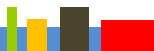


Alarm Server



Alarm Feature Set

- Alarm mng for ACK,RESET realtime alarm events.
- 1000 level of priority.
- Alarm Viewers with Filter facilities in runtime.
- Alarm Logged in local DB or cloud.
- Support of OPC UA AE (Alarm Event) client/Server.
- Alarm statistic option with Report designer on client or webclient side.
- Alarm Dispatcher to notify alarm events through SMS or Emails





Alarm Dispatcher

Movicon.next™
Automation Platform.next generation

The Alarm Dispatcher is the Platform.NExT™ module for directly notifying personnel of alarm events using SMS or e-mail. Notifications are sent to specified users or user groups and can be customized to be set at specific times, calendar dates, work shifts or on-call duty work shifts.



- Alarm Mng
- Log
- Alarm Reports
- Alarm Dispatcher



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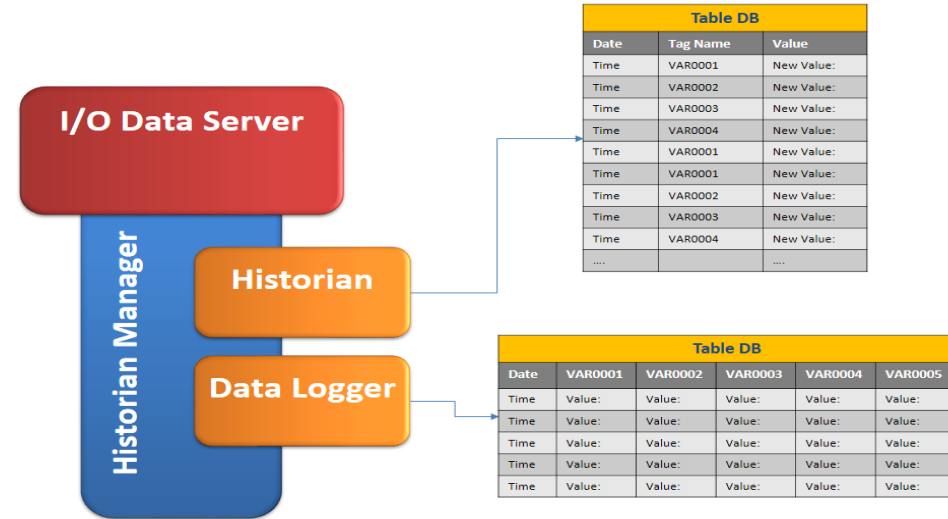




Platform.next™ Historian

Movicon.next™
Automation Platform.next generation

- Technology: VFS (Virtual File System) and ADO.NET
- Engine Historian & Data Loggers
- Support SQL Server, MYSQL, ORACLE and Azure (Cloud)
- Data compression and Archiving
- Data recording on local XML files



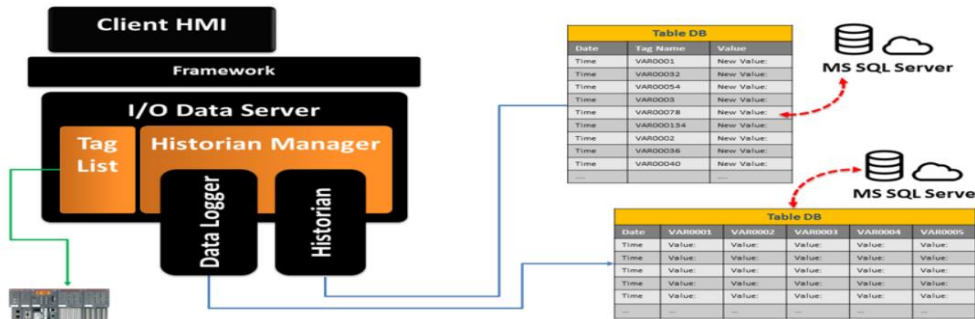
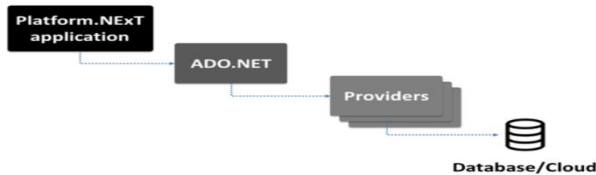


Historian General Concept

For Any Standard Resources requiring Database in Movicon.Next: Event Log, DataLogger, Historian, Recipe The Type of DataBase can be chosen by the user thank you to a library of .net provider to most of the DB(SQL,Oracle,MySQL)

Some specific features like Pro.Energy, PROlean requires expressly SQL 2012 DB or later due to the fact that most of the logics is done with store procedure in DB.
To store Realtime Data and TimeStamp in DB Movicon.Next offer two type of resource:

- Historian
- DataLogger



Historian

The Historian use few columns: a column with the tag name, columns with tag values, TimeStamp, user. This structure is very useful efficient and ideal for analysing and displaying data of a process on event in the viewer objects such as the Trends or Data Analysis.

Data Logger

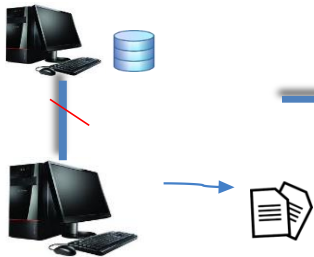
The Data Logger records contain more columns: one for each tagvalue , Timestamp, user. A new record will report the data of all the tags associated. This occupies more DB memory and therefore less efficient, but data can be organized better especially if you need to create production reports.



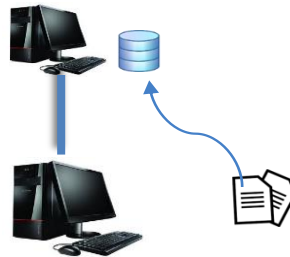


Data Recovery-Data Storage Forwarding

DB link interrupted



DB link restored



In case there an interruption of the link between Movicon.NExt and the DB, Movicon.Next will create temporary local XML files **Historical_yyyyMMddHHMM.FlushData** extension in the project Folder: UFUAServer\Historian

As soon as the DB link is restored, Movicon.NExt will transfer the data present in the temporary files into the DB completing the db with the missing Data and then delete the temporary files.





Powerful Tools for Data Analysis



- Trends & Data Analysis Objects
- Grid object with connector to DB
- Powerful Report Designer .NET/WPF
- Reports published via web

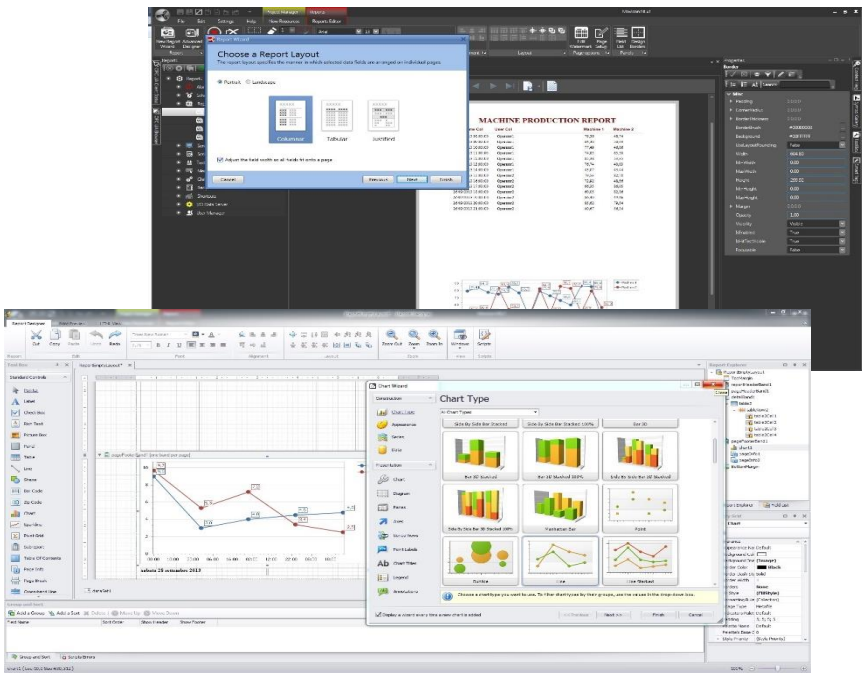




Report Manager



The Report Manager manager offers a visual object-oriented interface that can be used for creating Reports short step-by-step procedure or wizards and templates. By using the Report Manager, based on .NET technology, the user will be able to create powerful visual reports intuitively by using the tools provided in the toolbox.





Web – ready Reports

Movicon.next™
Automation Platform.next generation

The Reports can be published through the Web by using the Report Manager module functions which are supported by the Web Reports Module. When projects are published via web using the Web Server module, the report will be displayed via web using the Platform.NExT™ HTML5 Technology.



Platform.next™
Report Manager

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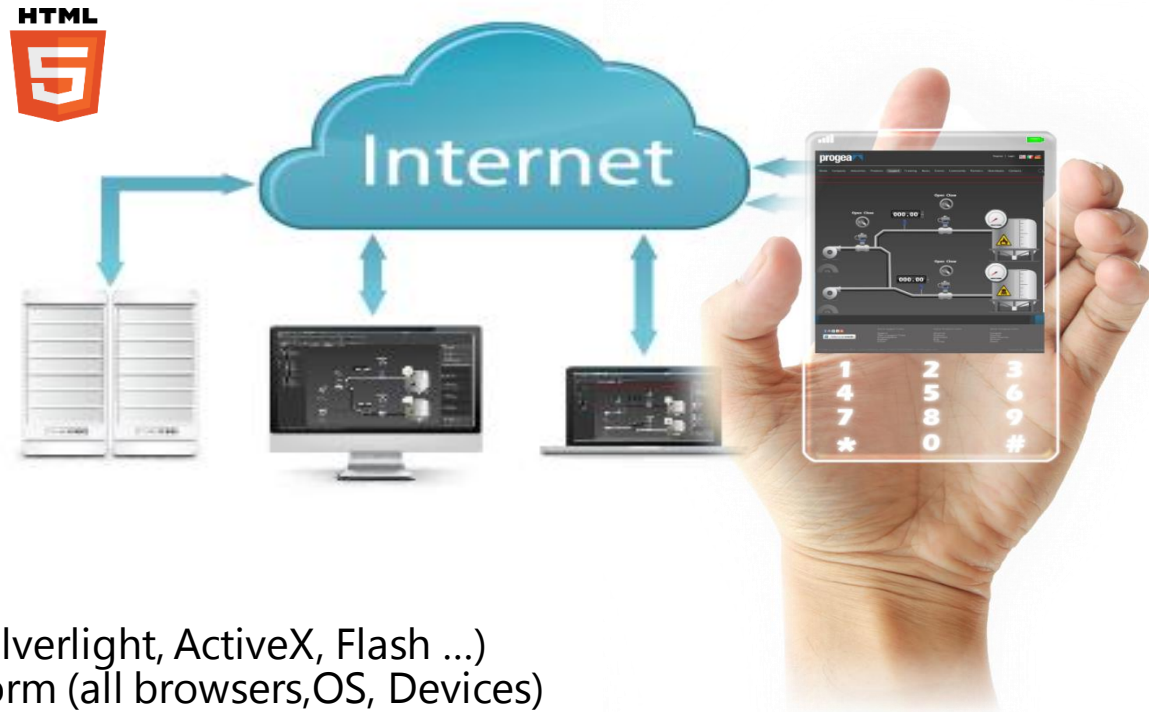


Platform.next™
Web Server

Movicon.next™
Automation Platform.next generation

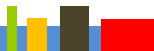
New Generation Web Technology

Secure plant system access via web using any browser, Apps (IOS,Android, Windows).



- No plug-in required (Java, Silverlight, ActiveX, Flash ...)
- Technology fully cross platform (all browsers,OS, Devices)
- Support Web socket for smart communication.

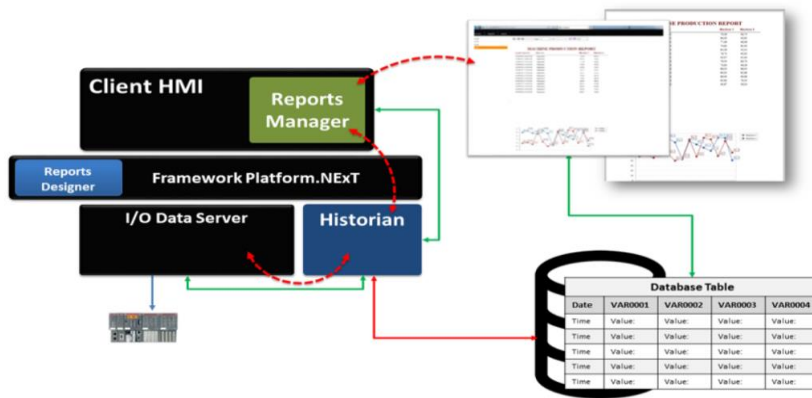
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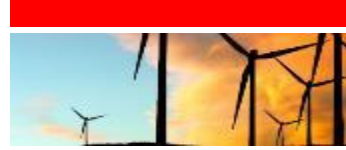
Platform.next™ Report Manager

Movicon.next™
Automation Platform.next generation

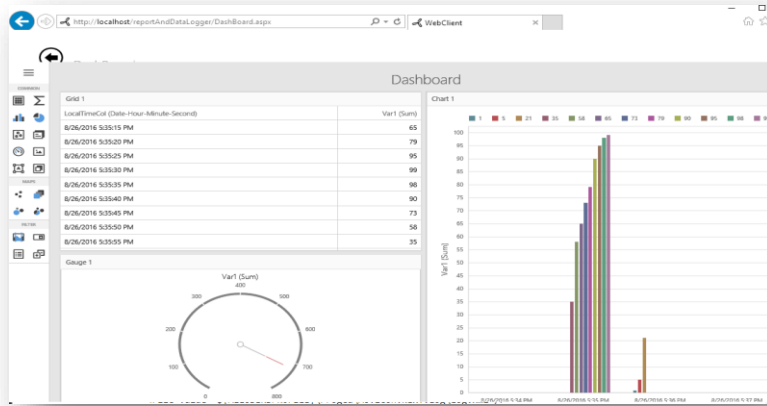


- Possibility to define query and pass complex dataset to the report.
- Possibility to pass parameter from Movicon through tag alias.
- Possibility to publish and view the report through the webclient.
- Data can be exported manually or automatically from the client as well in various format: PDF,xls etc ...





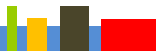
Webclient Tools for Data Analyses



- Possibility to view Grid objects and Data analyses in dedicated Pages.
- Possibility to design a custom dashboard in the webclient session with gauges, charts, pies, grids etc thanks to an online editor with Toolbar.



- Historian/DataLogger
- Trend/Data Analyses
- Reports
- Web report





The power of integrated VB.NET language

Movicon.next™
Automation Platform.next generation

Platform.NExT™ integrates a powerful VB.NET engine, capable of executing code compatible with the VB.NET standard (Visual Basic for .NET™), with a vast and powerful set of APIs.

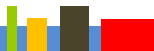
Expression Generator

Platform.NExT™ also offers a VB.NET expression generator to use for editing expressions directly within objects as an alternative to using Tags.

SDK to embed 3rd party Controls



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Movicon Pro.Energy[®]

This is a module for Movicon.NExT dedicated to the Energy efficiency and monitoring consumptions.

- New version based on Movicon.NExT
- Wizard integrated.
- Deploy Database SQL Server and included calculations
- Reports ready-to-use
- Web based Reports
- Open for a fully customization





Movicon 
Pro.Energy®

=

**The Solution for
Consumption/Costs Analyses**

Pro.Energy is a powerful Tool that helps to Measure, analyse and display the So called Energy performance indicators in particular or in general allows to Measure and analyse the consumptions of the so called WAGES:

Electrical and **piped utilities**:

W	[Water] = m ³
A	[Air] = m ³
G	[Gas] = sm ³
E	[Electricity] = kWh o kVar
S	[Steam] = sm ³

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Movicon Pro.Energy[®]

ProEnergy is based on **two** Components:

Meter



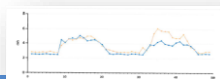
Movicon project



DB



Reports



a) Movicon used as IO server and graphic engine responsible for the Data acquisition, Data Storage, showing realtime Data,reports, pivot table.

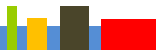
b) The ProEnergy Tool/Wizard that create the Movicon project, the database responsible for the calculation and deploy the reports.

**Pro.Energy
Wizard**

Create

Create

Deploy

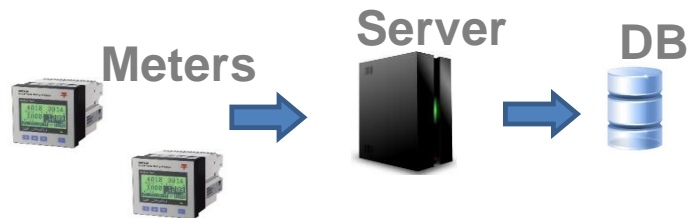




Movicon Pro.Energy[®]

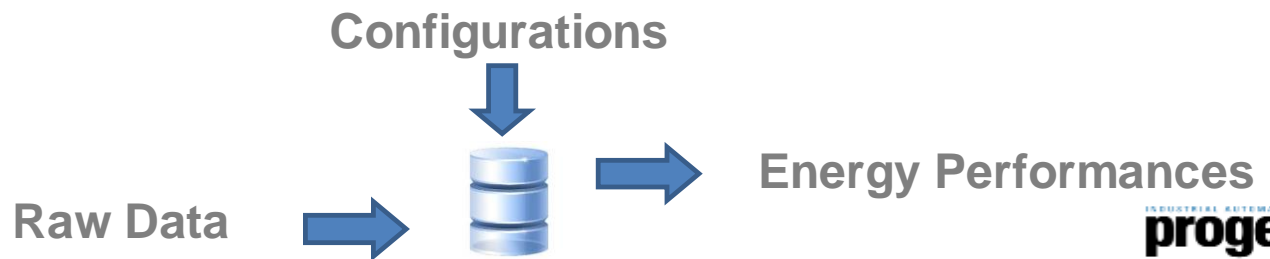
Data Acquisition:

Collect Data coming from the Energy Meter and Record them into databases (SQL2012)



Calculations:

Energy consumptions are calculated and data aggregated per 15 Minutes, hour, day, month, year.

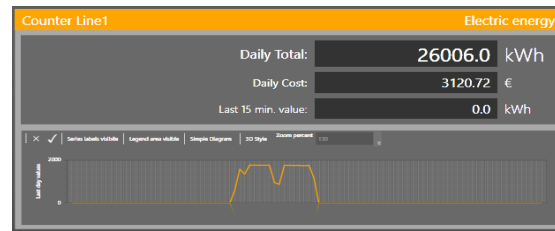




Movicon Pro.Energy®

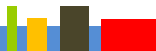
Dash Board:

Main Screens showing Meters information (absolute realtime value, consumption for last 15 minutes,, Trend with day consumption.



Calculation of Costs:

Energy or utilities Supplier Contracts with Energy cost can be inserted to produce reports with costs.

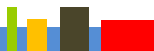
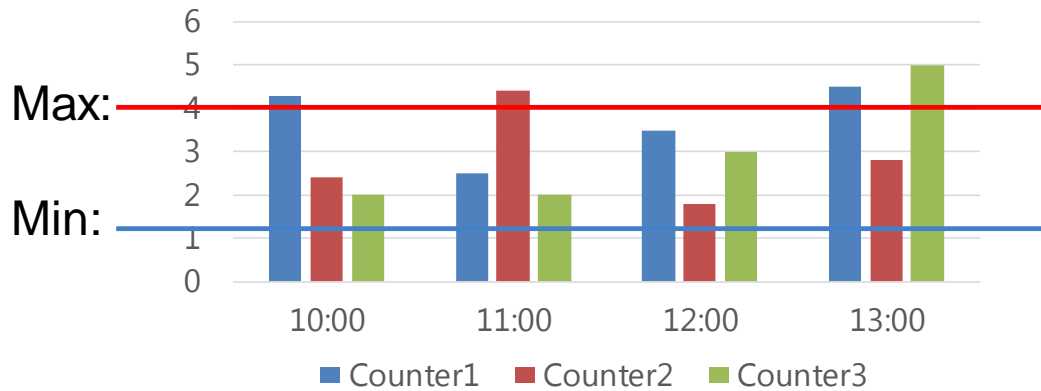




Movicon Pro.Energy[®]

Monitoring:

Thresholds can be defined in order to monitor specific situations, using the alarm management of the scada engine.





Movicon Pro.Energy®

Analyses-Reports:

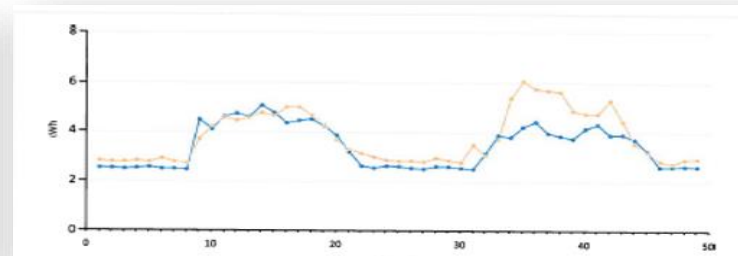
Consumption: report for selected meter and period of time with average, min, max consumptions value.

Cost: report reporting costs and consumption for energy point.

Load Profiles: report showing daily Average, Min, Max value during selected period.

Time period Comparison: report comparing the same energy point during different period of time.

Groups: Possibility to make sum, global consumption calculation by geographic Area.

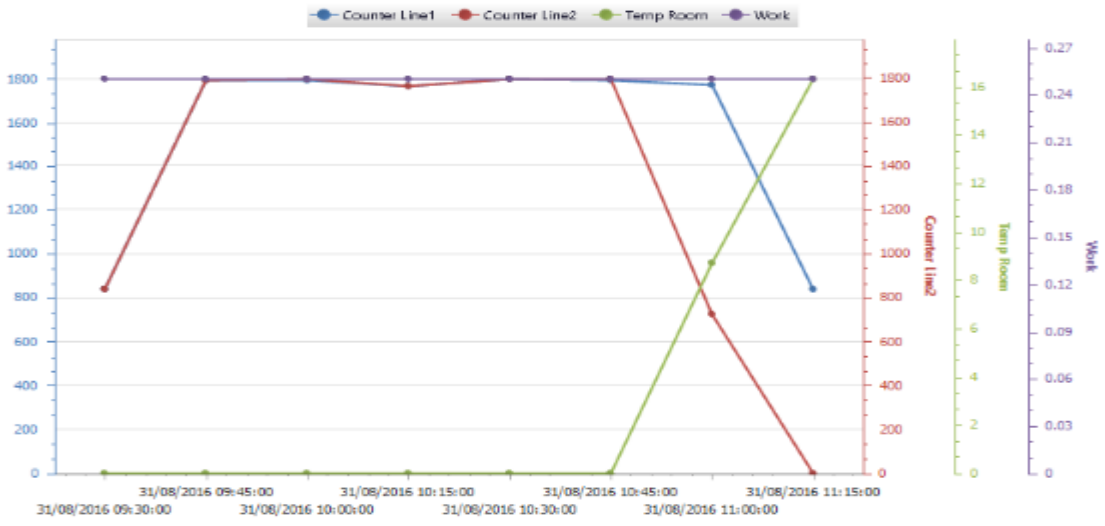




Movicon Pro.Energy®

Environment measurements:

Consumptions Values can be compared to environment measurements:
 Heating system consumptions <> to Room Temperature.
 Lighting consumptions <> to day light intensity
 Pump consumption <> to flow meter

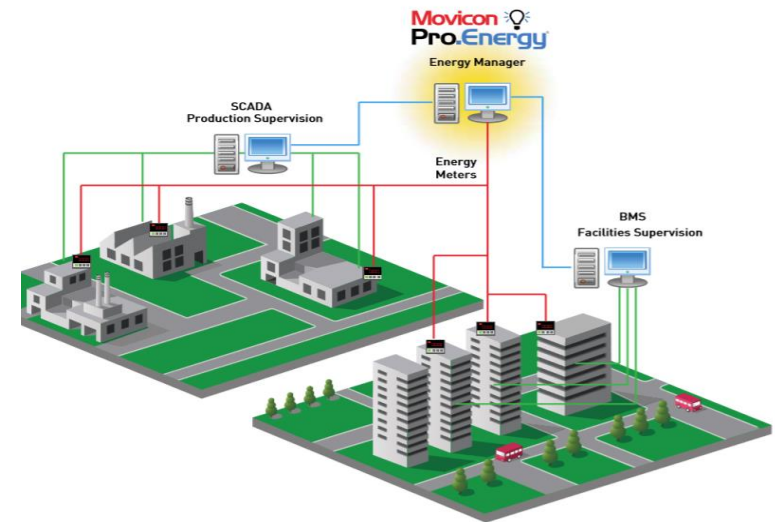




Movicon Pro.Energy[®]

Architecture

- **Easy to setup**, thanks to the **Wizard**.
- **Open** based on movicon can be integrated into existing projects or into other scada via webclient.
- **Scalable**, from interface on hmi till web.
- **Customizable**, movicon project open source, report open source.
- **Report Web** native + export and printout.





Movicon Pro.Energy[®]

Config.Step 1 : Prerequisites, software Requirements

Operating System:



Windows 8/10, windows server 2012 or later

Database Server:



-SQL 2012 (Express or Pro, 32 or 64).

Web:



-Free Webserver from Microsoft IIS (Internet Information Service) is required





Movicon Pro.Energy®

Config Step 2 : Install ProEnergy Add On

The ProEnergy Solution is based on **two** main parts:

Meter



a) Movicon used as IO server and graphic engine responsible for the Data acquisition, Data Storage, showing realtime Data,reports, Webclient.

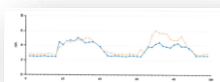
Movicon. Next project



DB



Reports



b) The ProEnergy Tool/Wizard that create the Movicon project, the database responsible for the calculation and deploy the reports.

Pro.Energy
Wizard

Create →

Create →

Deploy →



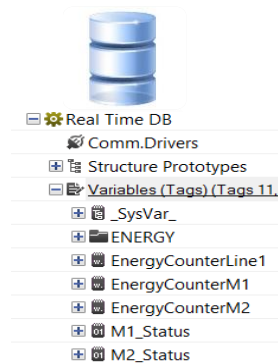
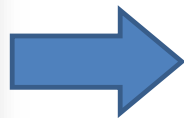
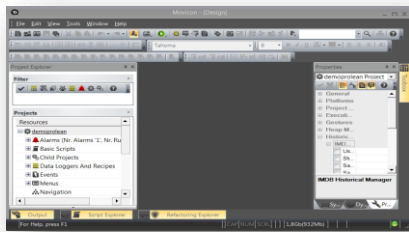


Movicon Pro.Energy[®]

Config. Step 3 : Movicon IO Server configuration

Movicon is used as IO Server for data acquisition, it is necessary to create an empty Movicon Project with a Tag for each energy point responsible for the consumption.

Create an Empty Movicon.Next Project Define the next Movicon Project Settings



-SET the default DB connector of your project

-Define a Tag for each EnergyPoint



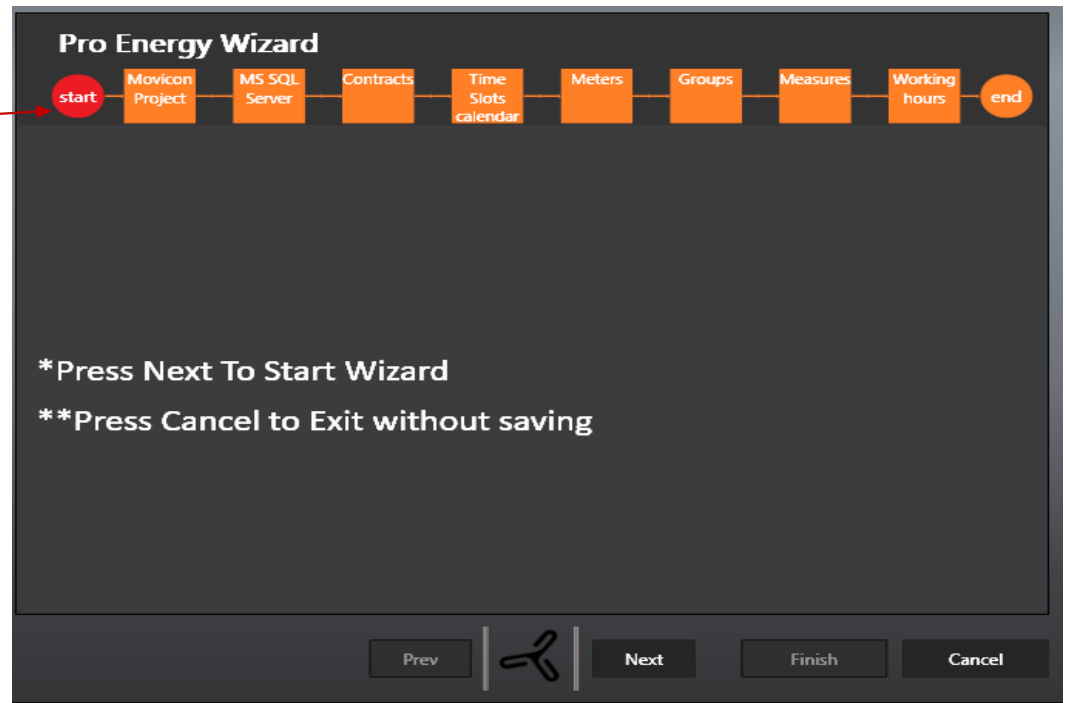
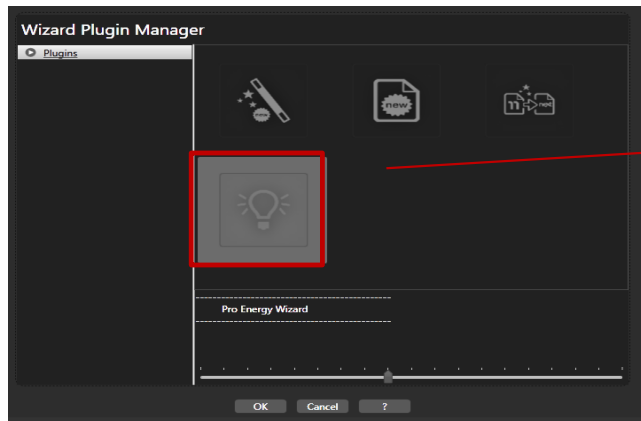
-Connect the tag to the METER.





Movicon Pro.Energy[®]

Config. Step 3 : Run the Pro.Energy Wizard





Movicon Pro.Energy[®]

Live Demo

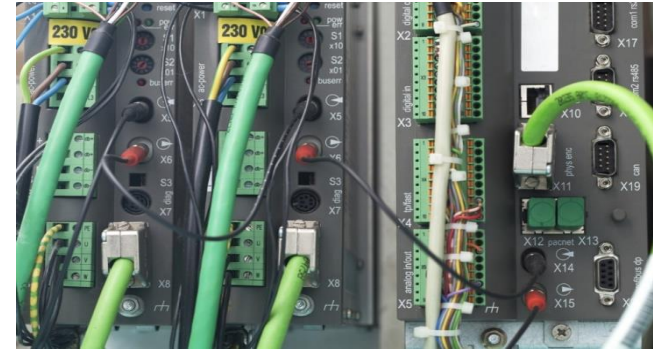




Connex[®]

OPC UA Server & Historian

OPC UA Server suite, based on the components of Platform.NEX.T. The OPC Suite offer a wide range of industrial protocols, IIoT protocols, Fieldbus and others to offer a global connectivity.



- OPC UA Server certified
- Several automation protocols included (PLCs, fieldbus, RTU...)
- IIoT Protocols
- Gateway feature
- Historian/Dataloggers option
- Redundancy
- Alarms&Conditions





Licensing Schemes

Movicon[®] **11**
MONITORING VISION AND CONTROL

Movicon.next[™]
Automation Platform.next generation





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 **Automation
Combine**

Thank you, How can we help you?

MoviconDAY

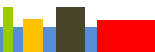




Movicon Pro.Lean[®]

This is a module for Movicon.NExT dedicated to the Plant Intelligence for manufacturing, included OEE, KPI and Downtime.

- New version based on Movicon.NExT
- Wizard integrated.
- Deploy Database SQL Server and included calculations
- Reports ready-to-use
- Web based Reports
- Open for a fully customization





Movicon Pro.Lean[®]

Increase Your profits



Any production manager of a company producing goods will look at optimizing the use of its ASSETS: increasing the efficiency of his machines or of his production process to be as much as possible close To the maximum production speed of the weakest element of the complete production chain.

**Increase the
Efficiency**



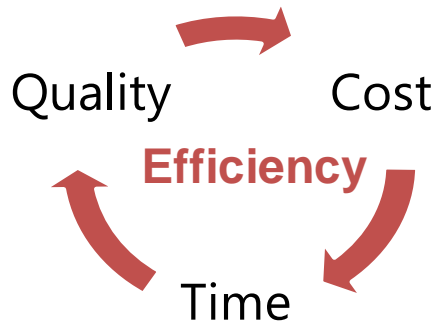
Increase profits

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progea 





Movicon Pro.Lean[®]



Optimize Time

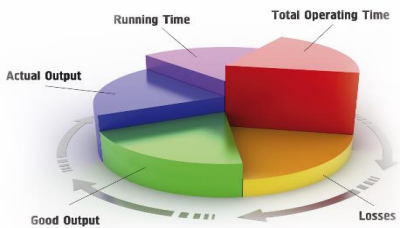
- Optimize Asset utilization
- Optimize machineries Production Speed
- Decrease Manutention Time

Optimize Quality

- Setup in proper way machineries to decrease waste

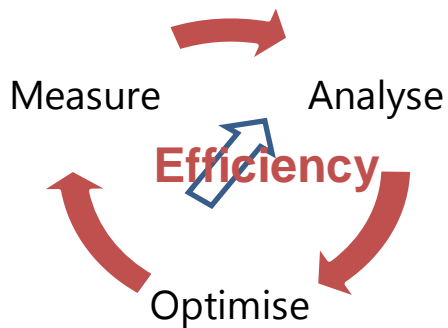
Optimize Costs

- Reduce Energy consumption
- Reduce operating cost
- Reduce Manutention cost

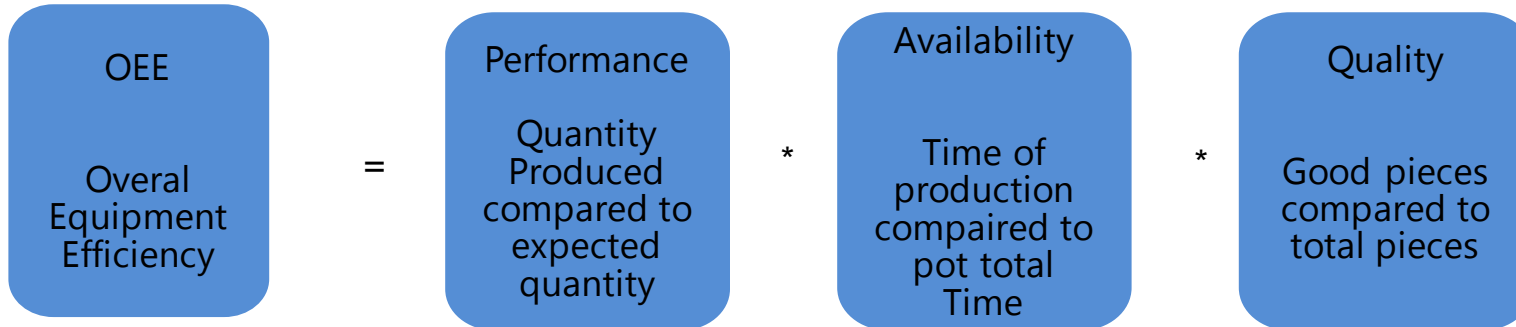




Increase Your Efficiency



- OEE is the standard index used to measure Efficiency
- OEE is composed of 3 main indexes: Performances, Quality, Availability.





What do you get with Pro.lean

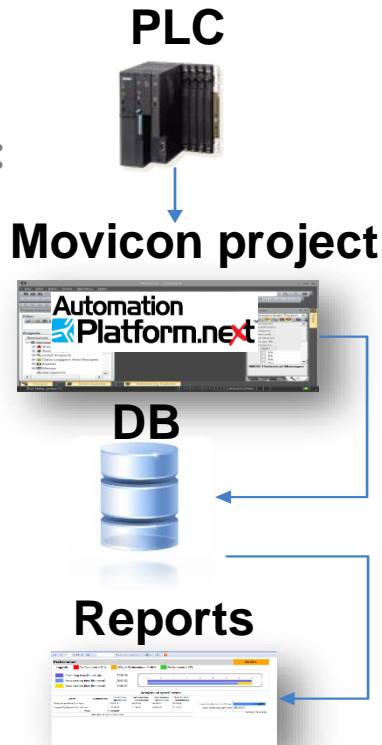
- Needed I/O Drivers or OPC server to connect the production info to the Field and PLC's.
- Data-Loggers resources to save your production Data to SQL Database. (SQL Express or SQL server required).
- The Logics to periodically calculate the KPI, to extract the data from DB and base result on Tags.
- Fancy Dash-board to display in realtime the KPI on screen locally or via Web.
- Reports by machine, shift and Time Frame with OEE, KPI calculations and production counters.
- Reports by machine, shift and Time Frame for Downtime Analyses.
- A Wizard to automatically create and configure the items above.





Movicon Pro.Lean®

The ProLean is based on **two** Components:



a) Movicon used as IO server and graphic engine responsible for the Data acquisition, Data Storage and realtime Graphic.

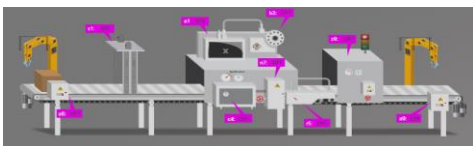
b) The ProLean Tool/Wizard that create the Movicon project, the database responsible for the calculation and deploy the reports.



Movicon Pro.Lean®

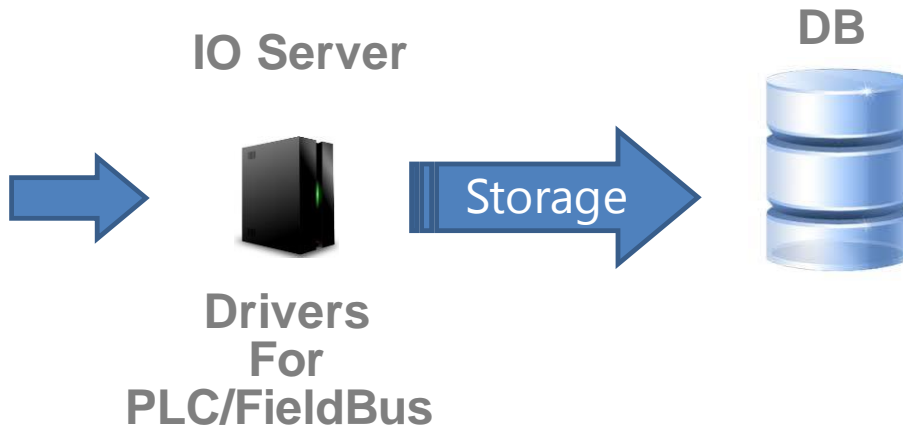
Data Acquisition:

Collect the Metrics coming from the Machines with a wide range of native drivers for PLC's & fieldbus available on the market and use the Historian function to Record them into a database (SQL2012)



METRICS

- Counters
- Machine Status
- Alarms
- Active Batch





Calculations:

The instantaneous OEE, KPI downtime information are calculated inside the DataBase depending on production batch and shift.

Raw Realtime Data

GOOD/BAD/TOT.
Pieces

JOB (RECIPE)

Running Status

Available Status

DownTime Reason





Movicon Pro.Lean

Dash Board:

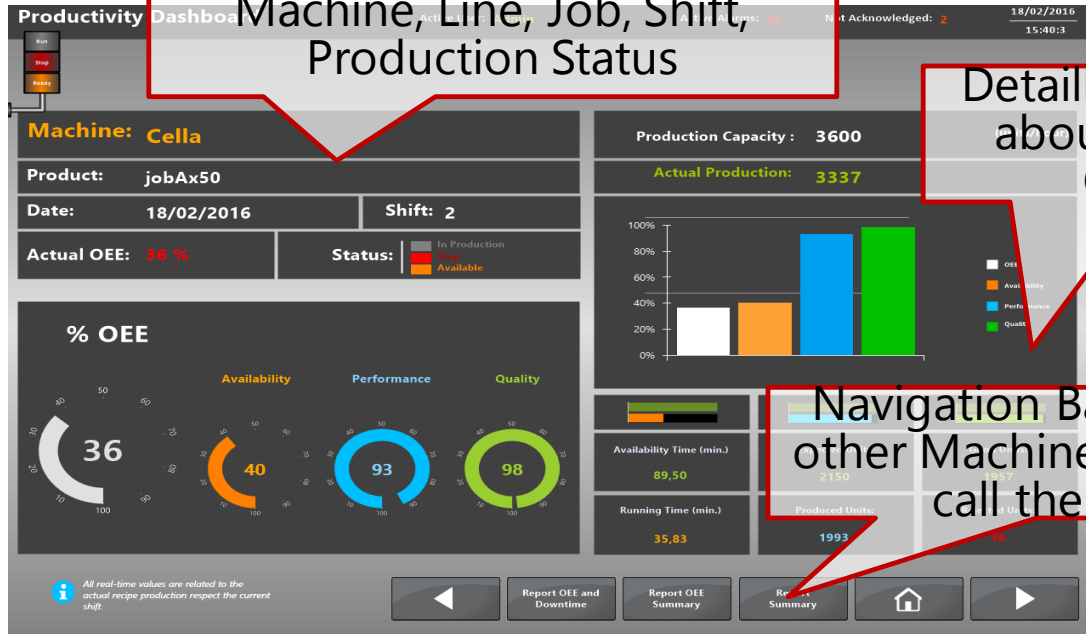
Main Screens, one per machine/Line showing the information of the production, KPI, OEE, Counters, result of the calculations *read from the DP's*

General Information about the Machine, Line, Job, Shift, Production Status

Detailed Information about the KPI and Counters.

Global OEE and KPI

Navigation Bar to Move to other Machine Screens or to call the reports

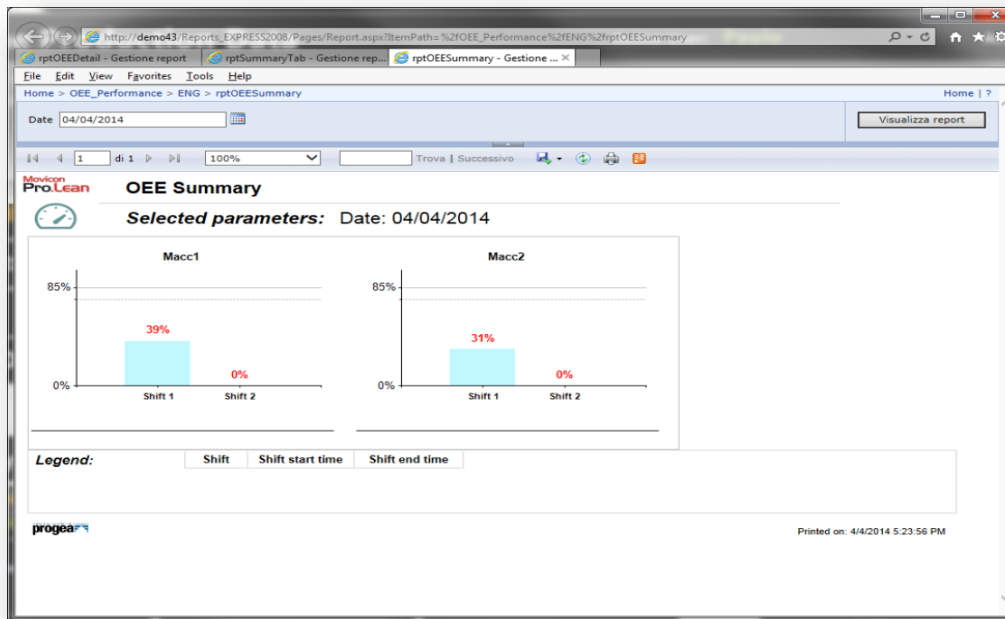




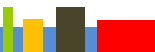
Movicon Pro.Lean®

Reports:

Suite of Reports visible locally from the server or over the web including export function, customizable.



Global OEE Index per Day per Machine/Line and shift.





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Availability

94.07%

Legend: ■ Availability < 80 % ■ 80% <= Availability <= 90 % ■ Availability > 90 %

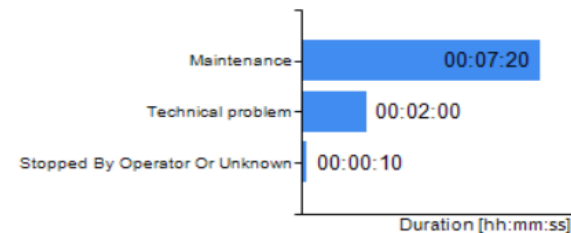
■ Available time [hh:mm:ss]: 02:40:20
■ Producing time [hh:mm:ss]: 02:30:50
■ Downtime [hh:mm:ss]: 00:09:30



Downtime analysis

Alarm	Occurrences	Tot duration [hh:mm:ss]	AVG duration [hh:mm:ss]	Min duration [hh:mm:ss]	Max duration [hh:mm:ss]
Maintenance	2	00:07:20	00:03:40	00:00:30	00:06:50
Stopped By Operator Or Unknown	1	00:00:10	00:00:10	00:00:10	00:00:10
Technical problem	1	00:02:00	00:02:00	00:02:00	00:02:00
Total:	4	00:09:30			

NB: Alarms can be concurrent.





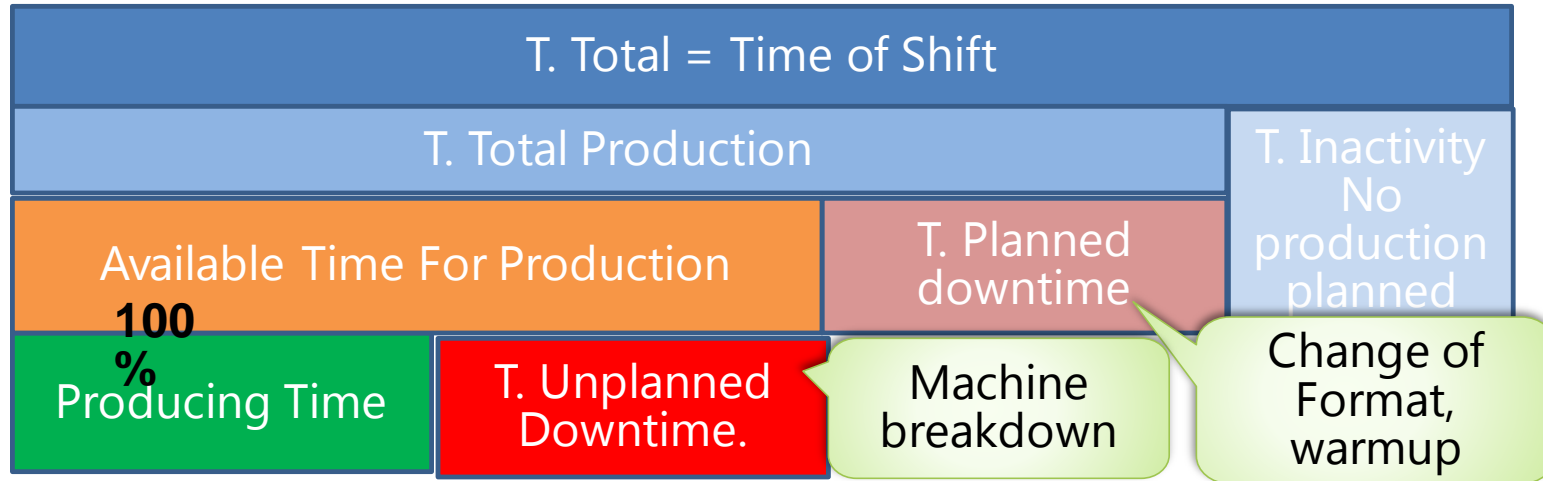
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Reports:

3 Reports for KPI, 1 for each KPI with time line, Downtime statistics, pareto graph.

Availability:

$$\frac{\text{Producing Time}}{\text{Available Time For Production}} \times 100\%$$





Performance:

$$\frac{\text{Pieces produced during T. production}}{\text{Ideal QT. Pieces prod. During T. production}} \times 100\%$$

Performance

Legend: ■ Performance < 85 % ■ 85%

■ Producing time [hh:mm:ss]: 00:00:00

■ Net operating time [hh:mm:ss]: 00:10:29

■ Running slow time [hh:mm:ss]: 00:00:30

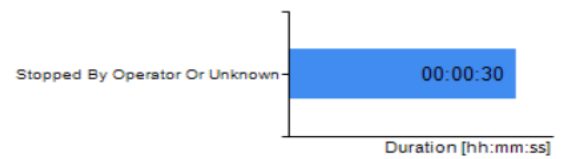
The lack of performance (slow production) could be due to:

- Bottle neck on the production line.
- Production jam.
- Little interruptions. (other systems Not Pro.LEan)

Analysis of speed losses

Alarm	Occurrences	Tot duration [hh:mm:ss]	AVG duration [hh:mm:ss]	Min duration [hh:mm:ss]	Max duration [hh:mm:ss]
Stopped By Operator Or Unknown	1	00:00:30	00:00:30	00:00:30	00:00:30
Total:	1	00:00:30			

NB: Alarms can be concurrent.





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Reports:

Summary report, productions batches with related counters, downtime, KPI.

http://demo43/Reports_EXPRESS2008/Pages/Report.aspx?ItemPath=%2FOEE_Performance%2FENG%2FrptSummaryTab

rptSummaryTab - Gestione report rptSummaryTab - Gestione ...

File Edit View Favorites Tools Help

Home > OEE_Performance > ENG > rptSummaryTab

From 01/04/2014 To 04/04/2014 Visualizza report

100% Trova | Successivo

OEE Summary Table

Selected parameters: Date from: 01/04/2014 to : 04/04/2014

Date	Resource	Shift	Job description	Production data [Pz]			Time Analysis [HH:MM]			OEE analysis			
				Total parts count	Good parts count	Scrap parts count	Running	Unavailable	Downtime	Availability	Performance	Quality	OEE
04/04/2014				1.212	1.106	106	00:34	00:00	00:00	50 %	19,18 %	45,5 %	17,5 %
10001	1	1	Ricetta1	636	610	26	00:17	00:00	00:00	100 %	40,25 %	95,91 %	39 %
10002	1	1	Ricetta1	576	496	80	00:17	00:00	00:00	100 %	36,46 %	86,11 %	31 %
10001	2	2	Ricetta1	0	0	0	00:00	00:00	00:00	0 %	0 %	0 %	0 %
10002	2	2	Ricetta1	0	0	0	00:00	00:00	00:00	0 %	0 %	0 %	0 %
04/04/2014				1.212	1.106	106	00:34	00:00	00:00	50 %	19,18 %	45,5 %	17,5 %
10001	1	1	Ricetta1	636	610	26	00:17	00:00	00:00	100 %	40,25 %	95,91 %	39 %
10002	1	1	Ricetta1	576	496	80	00:17	00:00	00:00	100 %	36,46 %	86,11 %	31 %
10001	2	2	Ricetta1	0	0	0	00:00	00:00	00:00	0 %	0 %	0 %	0 %
10002	2	2	Ricetta1	0	0	0	00:00	00:00	00:00	0 %	0 %	0 %	0 %
04/04/2014				1.212	1.106	106	00:34	00:00	00:00	50 %	19,18 %	45,5 %	17,5 %
10001	1	1	Ricetta1	636	610	26	00:17	00:00	00:00	100 %	40,25 %	95,91 %	39 %
10002	1	1	Ricetta1	576	496	80	00:17	00:00	00:00	100 %	36,46 %	86,11 %	31 %
10001	2	2	Ricetta1	0	0	0	00:00	00:00	00:00	0 %	0 %	0 %	0 %
10002	2	2	Ricetta1	0	0	0	00:00	00:00	00:00	0 %	0 %	0 %	0 %

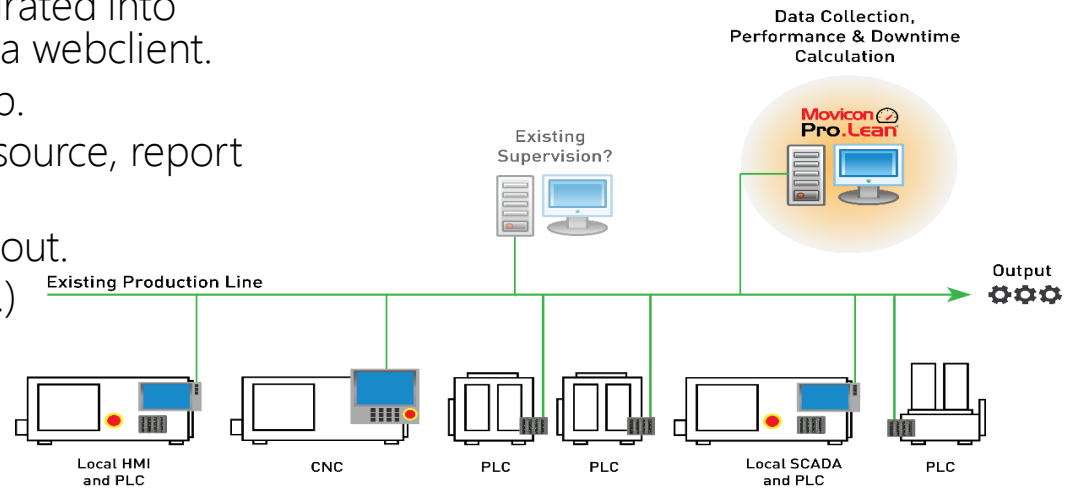




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Architecture

- Easy to setup, thanks to the **Wizard**.
- **Open** based on movicon can be integrated into existing projects or into other scada via webclient.
- **Scalable**, from interface on hmi till web.
- **Customizable**, movicon project open source, report open source.
- **Report Web** native + esport and printout.
- **Link to ProEnergy** (W/piece produced.)





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Live Demo





Products statement.





On going Release 3.1

An intense work has been done to release in June a new version 3.0 of Movicon.NExT based on the feedback obtained by the users that have participated to our Beta test program.

The efforts have been principally concentrated to bring improvements in:

- Performances
- Stability
- Usability

The implementation continue intensively in order to respect our Roadmap and release in November 2016 a new version 3.1 that offers additional advanced Features.





Movicon.nextTM Internet of Things



This is a runtime application for Windows 10 IoT. The concept is that you can design an HMI application using Movicon.NExT, and deploy your project into any device Win10 IoT Ready

- Runtime for low-end HMI or Core systems based on Win10 IoT
- Screens and Logic supported
- OPC UA compatible (as client)
- Drivers for GPIO or Modbus or others
- Drivers for IIoT such as PubNub, OPC UA Azure, ongoing MQTT or others.
- Connections IIoT even on Platform.NExT modules





NextAR Augmented Reality

This is a runtime application for SmartGlasses (Android-based) or HoloLens (Win10 HL). Connected to a Movicon.NExT server application, allow to display and interact HMI through Augmented Reality wearable devices.

- Runtime for low-end AR Devices
- Screens HMI and fully interactivity
- Holographic 3D upcoming
- Voice Recognition
- Eventual barcode reading and so on..





Automation Ecosystem:

Design once, deploy everywhere

