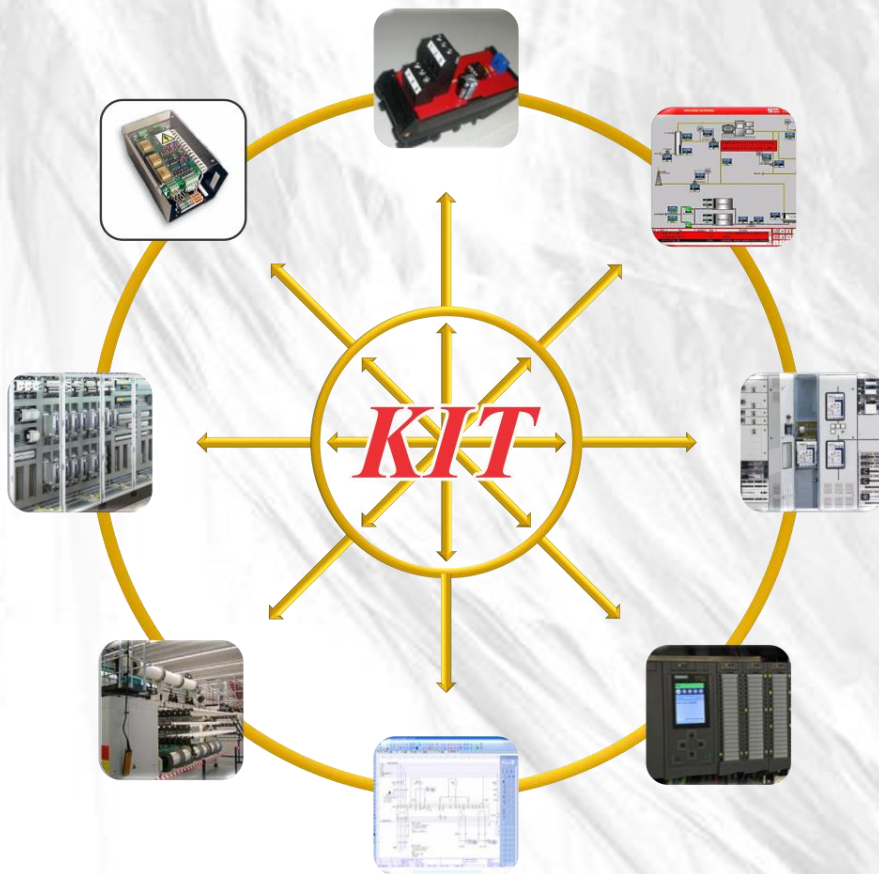




Datum

June 2018

# PLC systems



SIEMENS S5 / S7

ALLEN BRADLEY

BOSCH REXROTH

MODICON

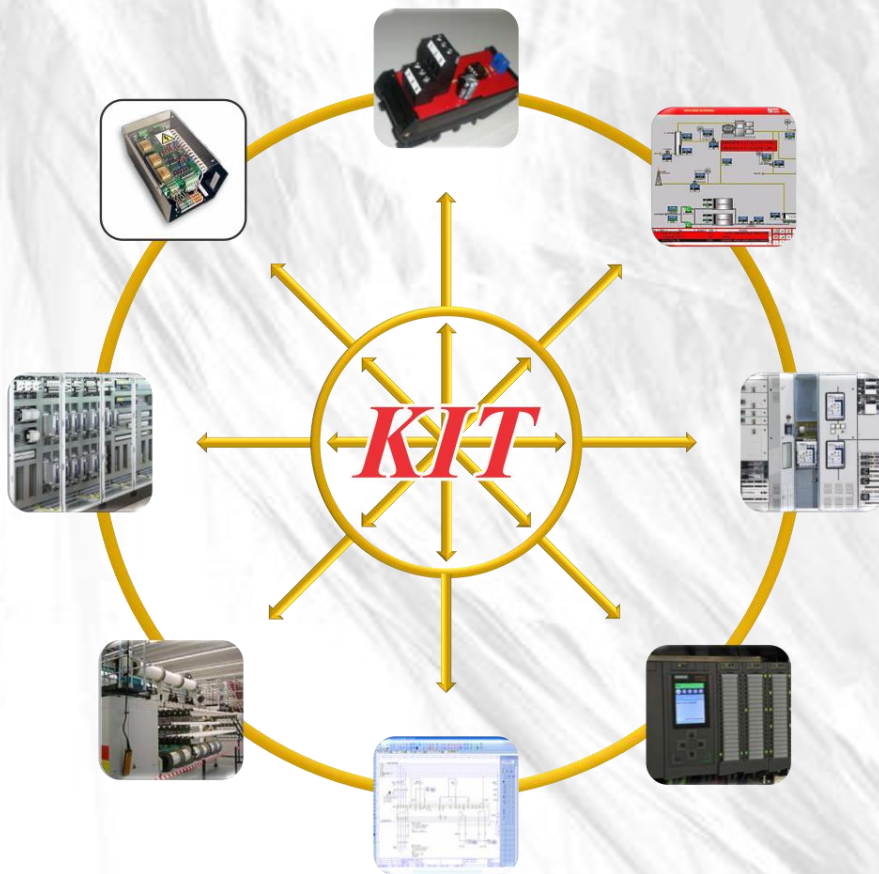
MÖLLER - FUZZY

ABB

... their visualizations.

... and other PLC systems

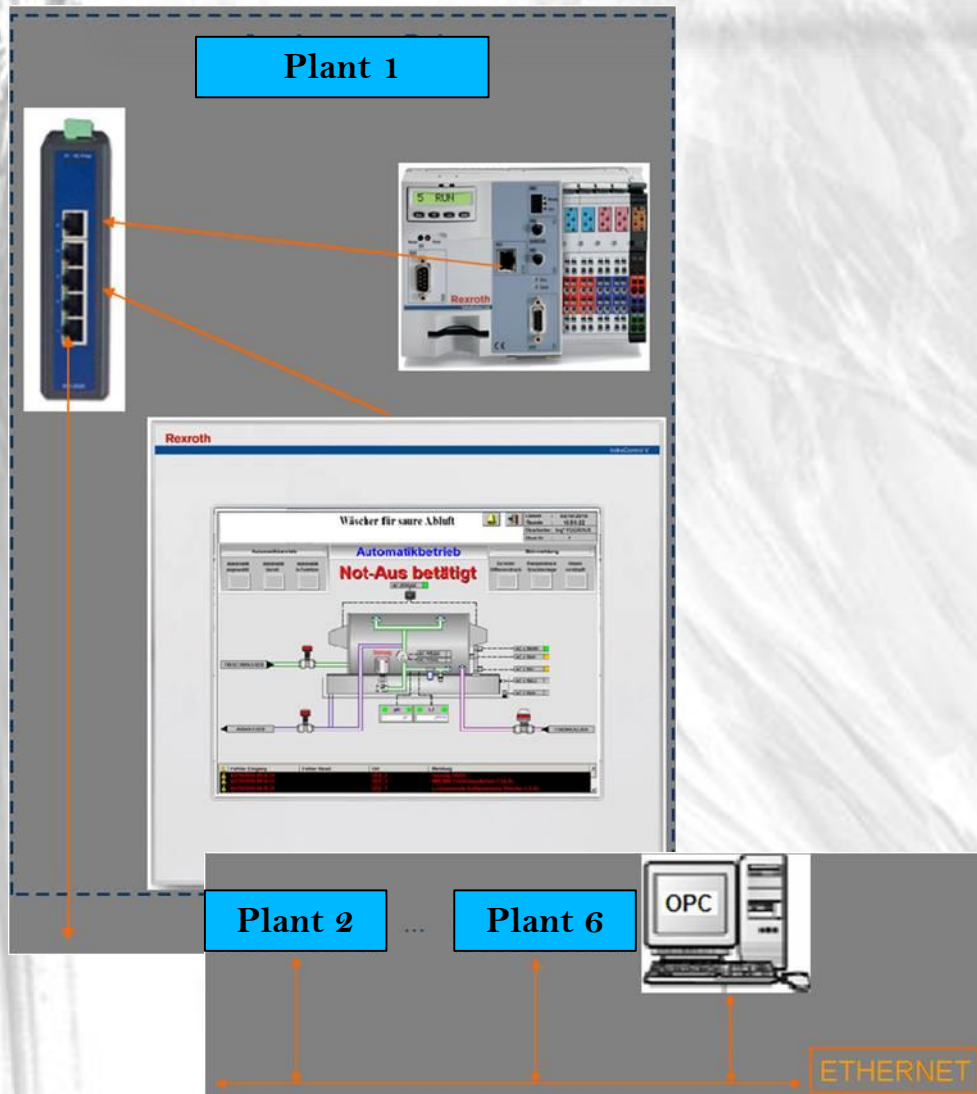
## System architectures



### System architectures

Due to the various individual Requirements through complex processes associated with various solutions of control and monitoring, it needs to implement basic knowledge of the use of the basic structures and systems of systems to be used.

## System architectures 1

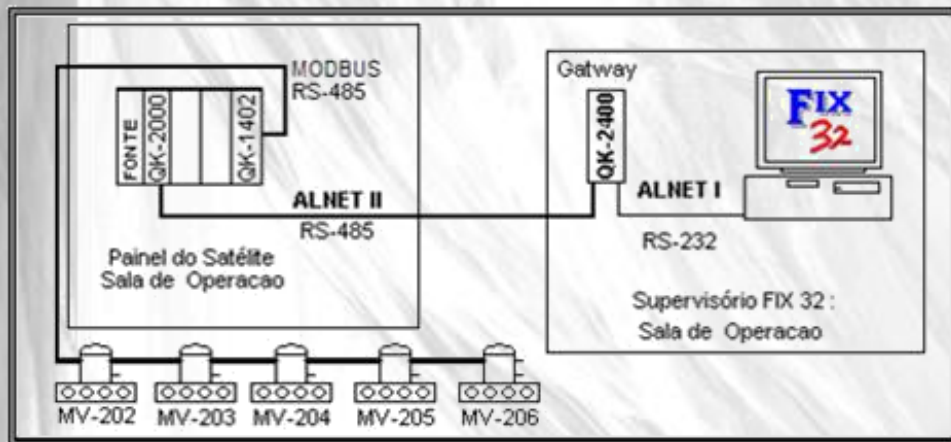


### Plant Application with 6 subsystems

- Application system with subsystems
- Subsystems operate autonomously
- Parent process level via OPC with automatic modus



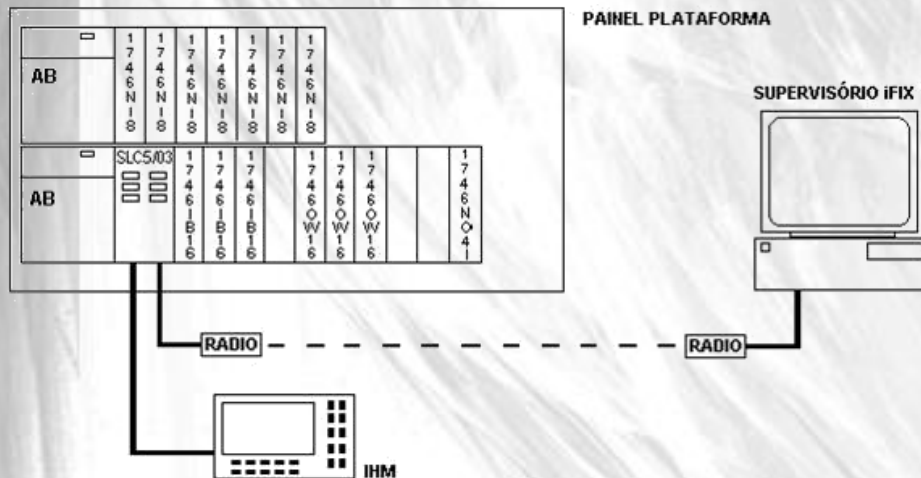
## System architectures 2



### Systems application ALTUS and Fix32

- Implementation of a PLC from Altus
- Master control center of the Fix32 – system
- Integration of a large number of valves via Modbus

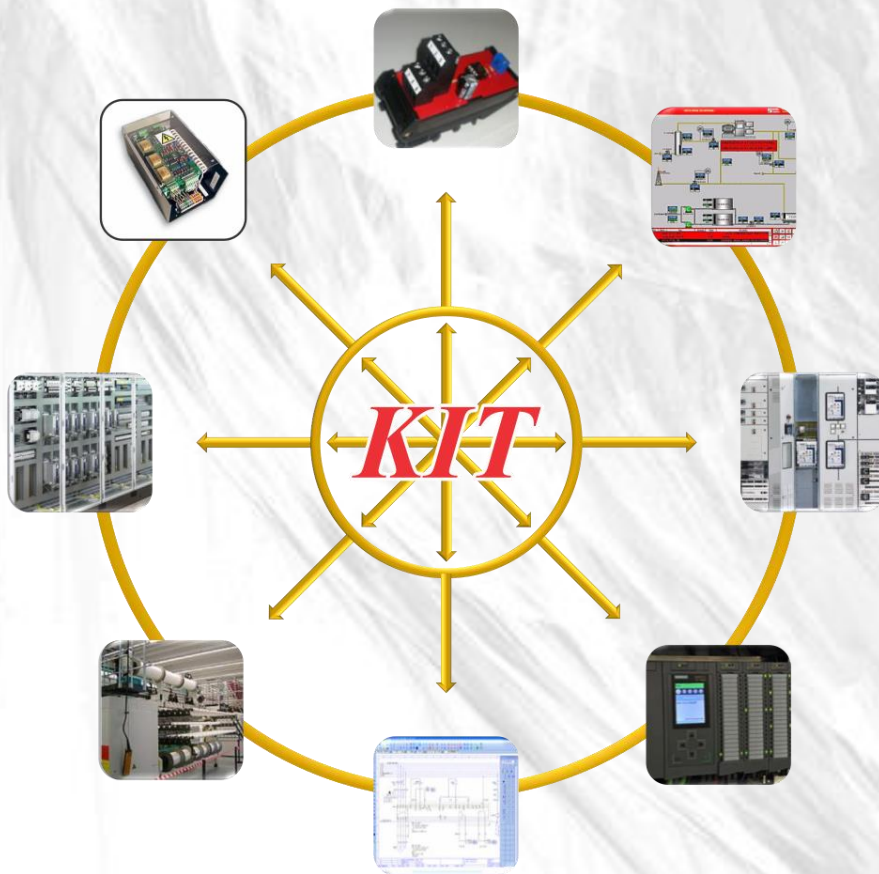
## System architectures 3



## Application with ALLEN BRADLEY

- Example of the characteristic of a PLC and visualization control by a master control center
- Feature a large distance between the PLC and the control center
- Realizing the data transmission between the control center and the SPS and Visualization system with wireless technology

## Detail example at machine level

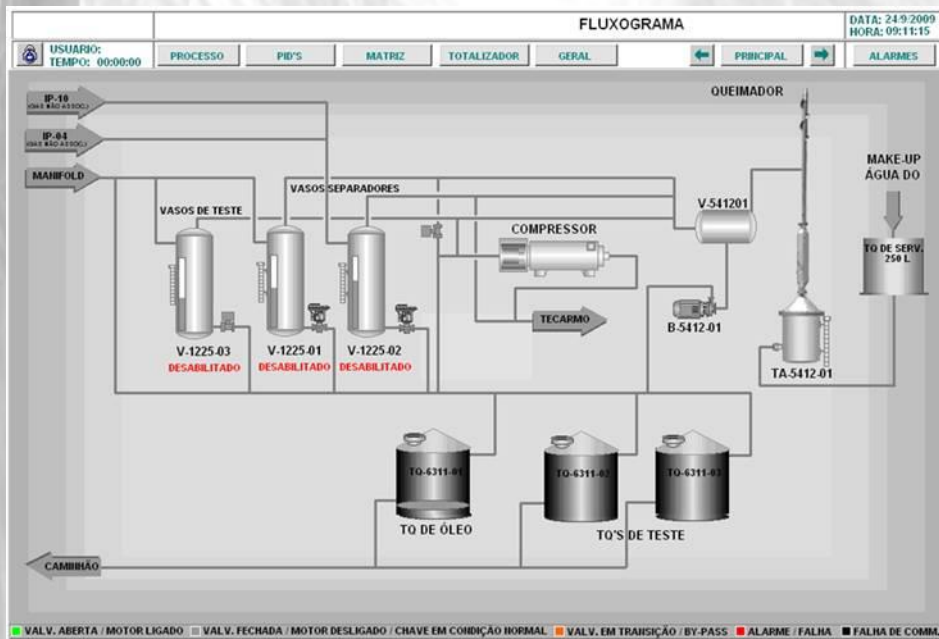


### Detail Example

Differ the most diverse solutions in particular through the implementation of individual schemes.

Important are clarity, ease of use combined with a sensible selection of information and its clear association with the individual process area.

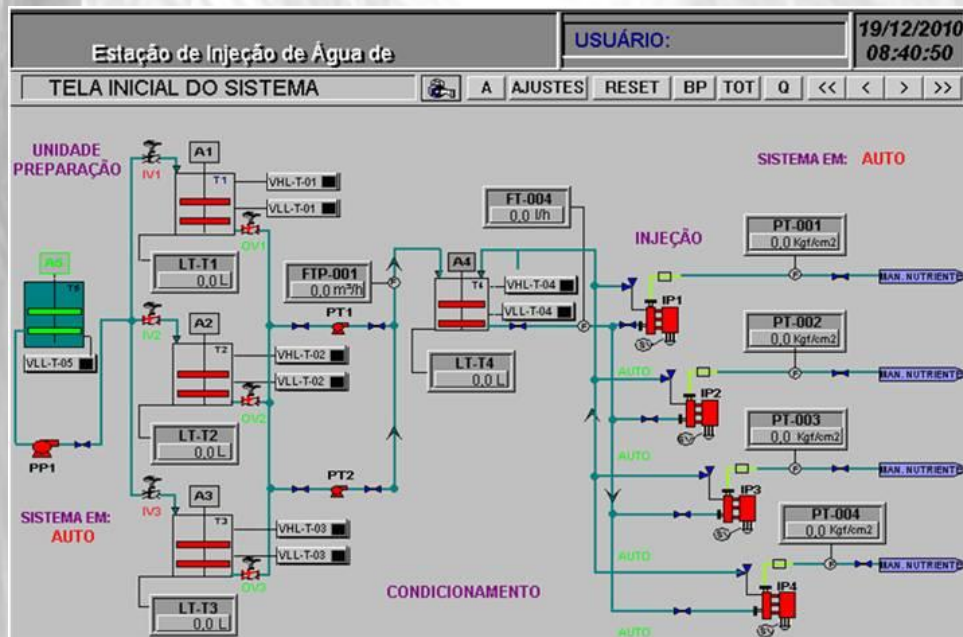
## Detail example 1



### Mixing plant

- Modern visualization by adjusting the graphic to reality
- Stored functions, however, are as easy as possible can be served

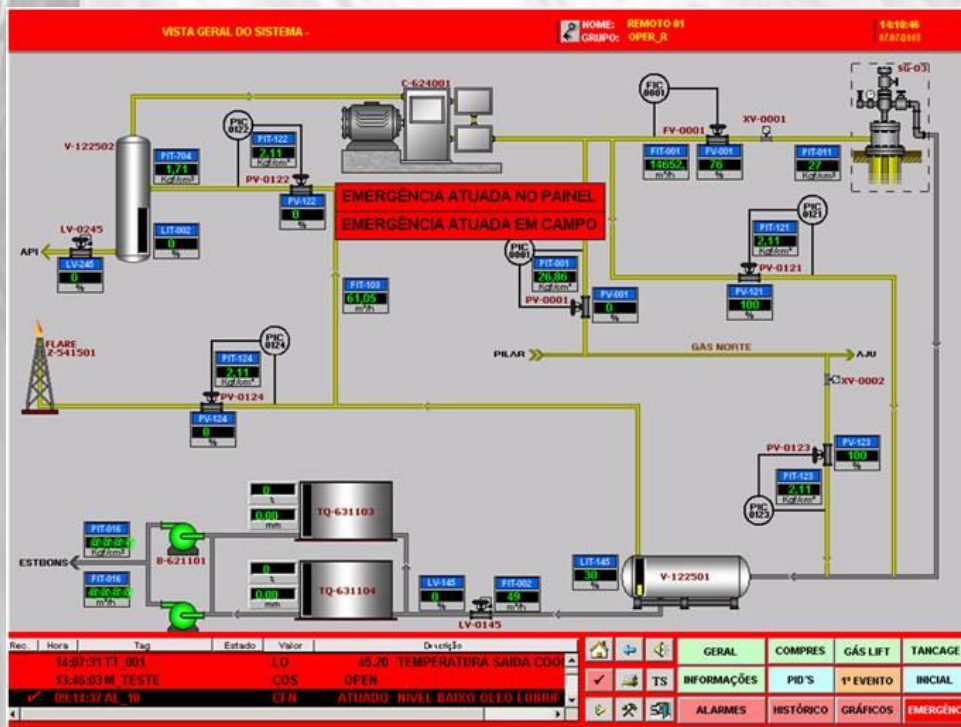
## Detail example 2



### Dosing and mixing system

- Analog value displayed within a display screen
- Exact place names in the graphical user interface
- Easy to navigate and locate of resources

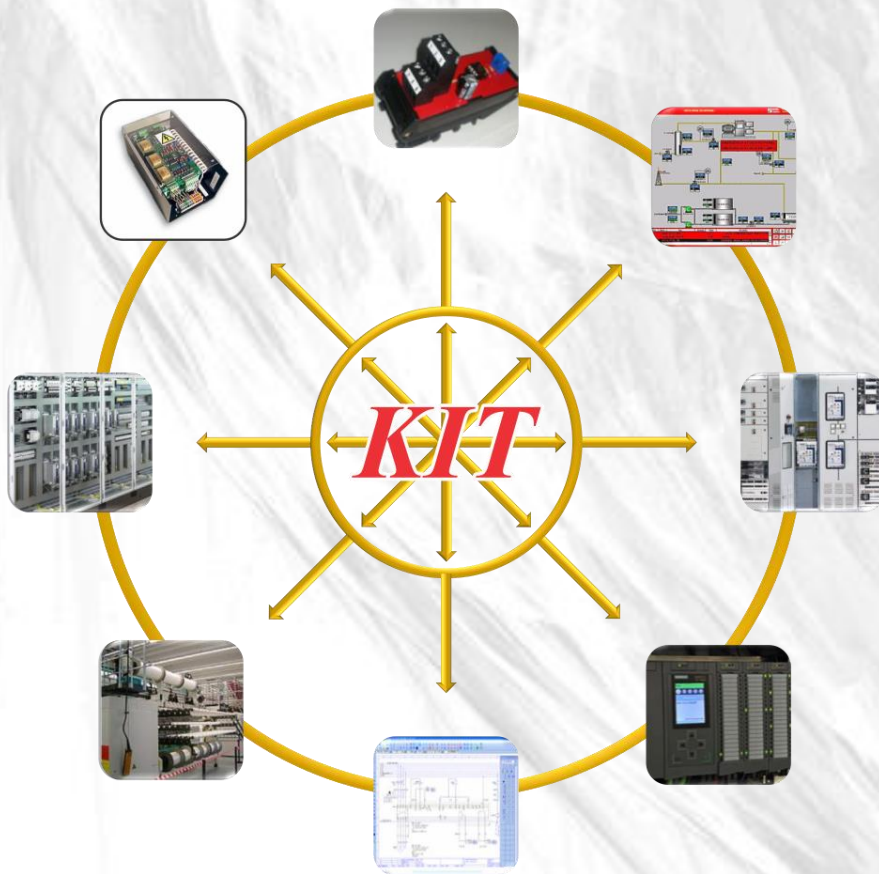
## Detail example 3



### Operating and fault messages

- To identify and locate restated in accordance with and are therefore arbitrary
- Representation of the highest technical achievable levels of a service panel.
- Implementation carried out with systems of Altus and Allen Bradley Control system Ifix

## Example at the processing level



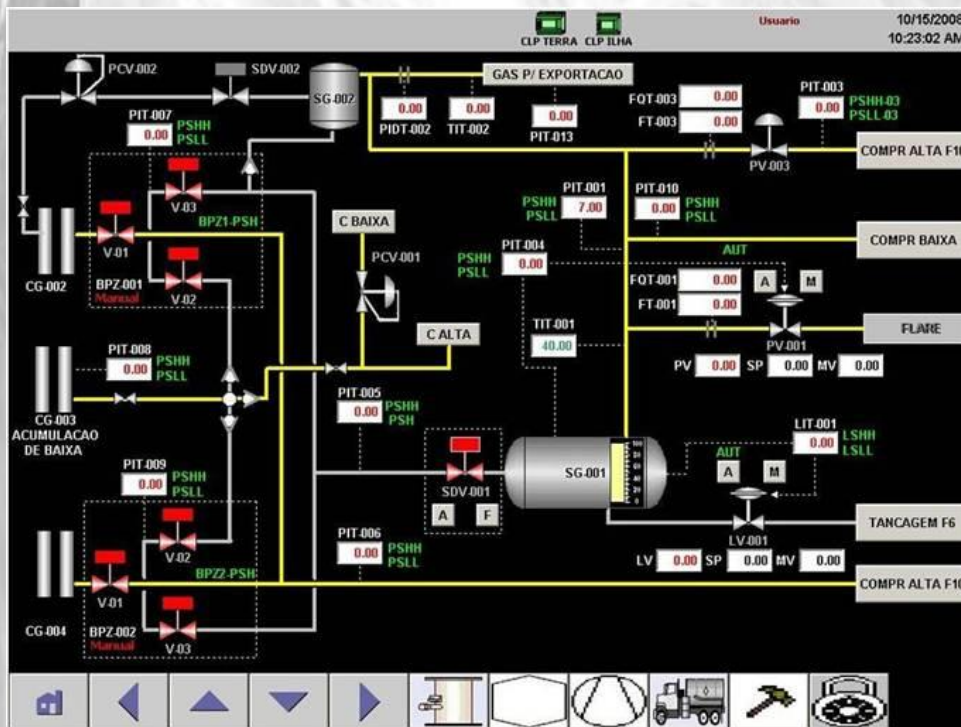
### Process Representation

The possibility of showing graphical display is partially limited by the given hardware. They are not all required by some manufacturers graphical display options offered

Of particular note are the navigation options, since very often the soft keys have been set by the device manufacturer on the side or top and bottom.



## Prozess example 1

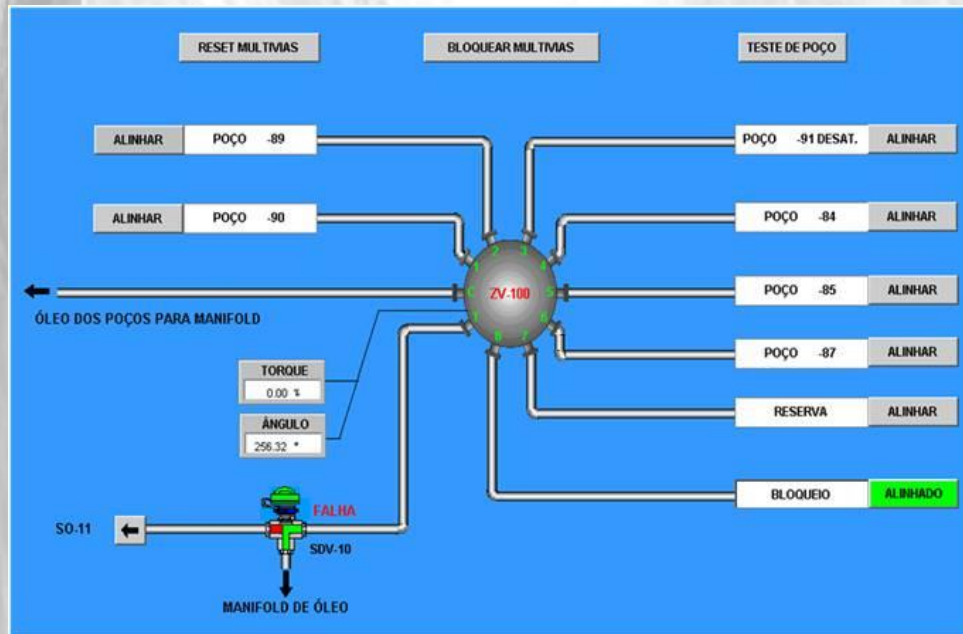


### Low Graphics power of hardware

- Simple symbology, especially valves
- Illustration of resources often only by symbols
- Performed with WinCC LT and SIEMENS S7-200



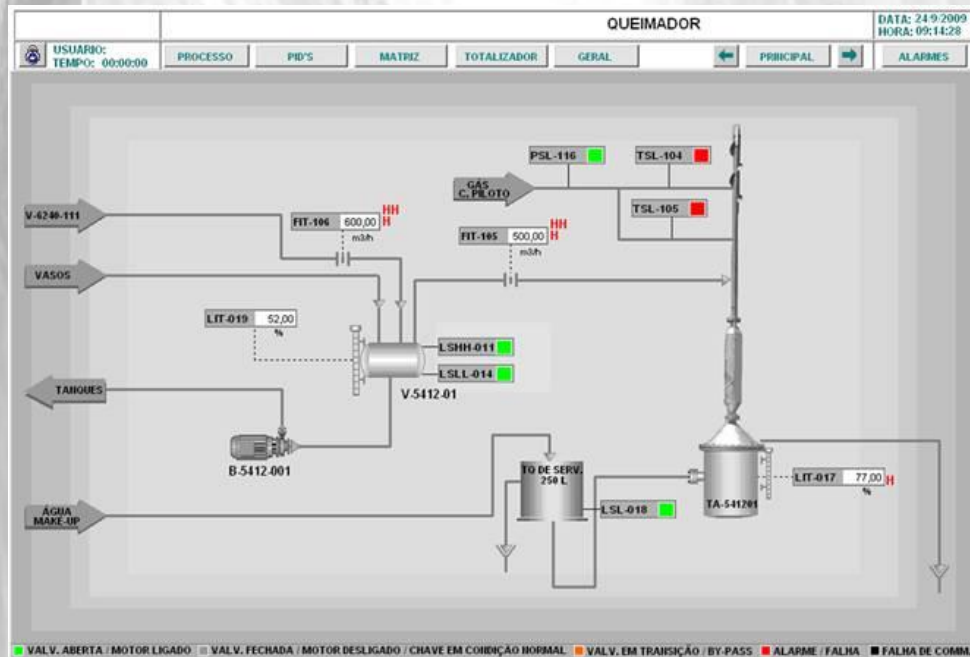
## Prozess example 2



### Complex processes and higher requirements

- Example of a process image for a mixer tap
- Application, with unavoidable higher visualization requirements
- Performed with Allen Bardley connection to the control system IFix

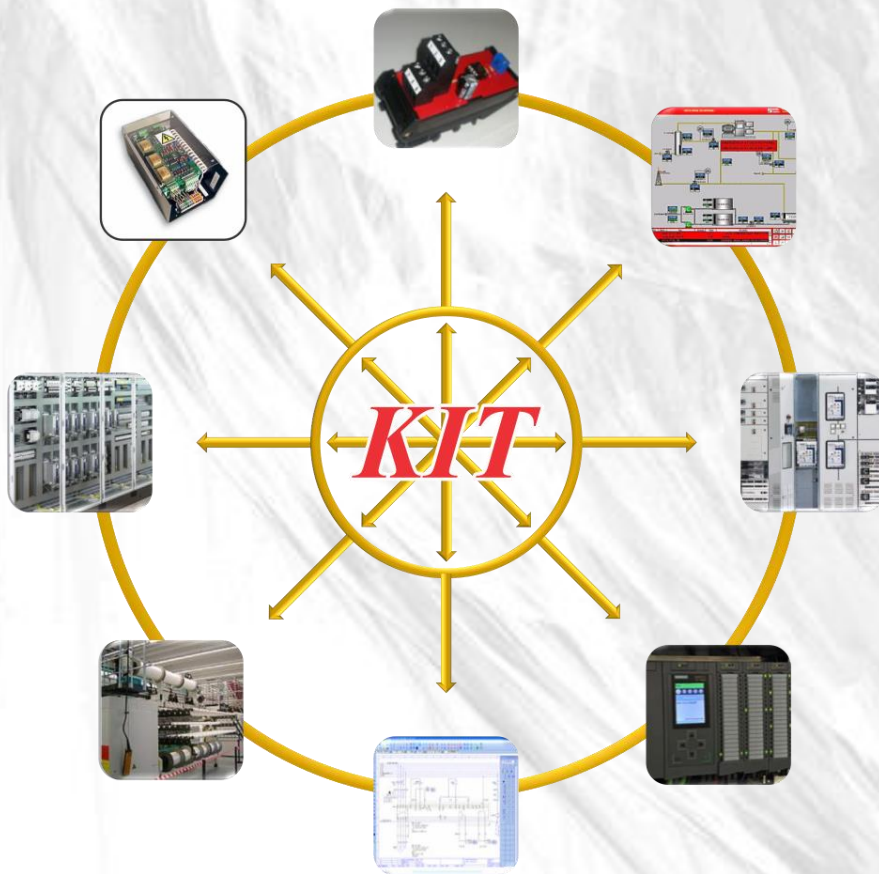
## Prozess example 3



### Sensors with setpoints and actual values

- Example material container to mix and store color essences
- Sensors give appropriate analog values to the PLC to visualize this
- Setpoints are created via the visualization

## Maintenance and monitoring



### Maintenance and monitoring

To accelerate maintenance and effective monitoring processes today are the signal stand the PLC and the sensors, visualized in a high quality.

The requirements for the selection of messages, the quality of information and clarity of presentation increase with the increasing complexity of processes.



## Maintenance example 1

RELÓGIO DO CLP

HH:MM:SS DATA: DIA DA SEMANA: AJUSTA RELÓGIO RESET GERAL

9 15 14 25 1 6 QUARTA-FEIRA D S T Q Q S S

**NODE:**

**Database:** Nome ETOSZ2 Nro Serial 224281880

**Sistema:** Hora H 14:22:15 Data D 26-01-06

Itens em vermelho são modificáveis, pressionando-se a tecla correspondente.

**BY-PASS**

DESAT. ATIVO

PIT-6311-002

**AJUSTES DE ALARMES**

	LL	L	H	HH		LL	L	H	HH
PT-002 0 psi	31	35	55	61	AI-202 0 A	24	60	330	338
FT-201 0 m3/d	10	20	290	295	SI-201 0 RPM	505	605	3,550	3,600
FT-202 0 m3/d	840	1000	1,400	1,800	SI-202 0 RPM	505	605	3,550	3,600
AI-201 0 A	25	60	330	338					

**MISSION CONTROL**

**DATABASE BUILDER**

**PMON**

**DRAW**

**ELECTRONIC BOOK**

**SCU**

### Maintenance image with adjustment options

- Example of a maintenance image with link to higher-level control system
- Possibility of access for adjustments of processes
- Performed with Altus
- Connection to the control system Fix32

## Maintenance example 2



### Status visualization of PLC hardware

- Example of a maintenance screen displaying all available digital inputs and outputs a connected PLC
- Performed with Altus
- Connection to the control system Fix32



## Maintenance example 3

MATRIZ CAUSA E EFEITO									
CLP CENTRAL DA ESTAÇÃO									
(YC-01)									
RESET TRIP									
NÍVEL MUITO ALTO NO V-1225-03 (LT-3247-004)	BYP	LSHH-3247-004							DESLIGADO
NÍVEL MUITO BAIXO NO V-1225-03 (LT-3247-004)	BYP	LSLL-3247-004							
NÍVEL ALTO NO SEPARADOR V-1225-01	BYP	LSH-3247-020							
NÍVEL ALTO NO VASO TA-5412-01 (LT-017)	BYP	LAH-3247-017							
NÍVEL BAIXO NO VASO TA-5412-01 (LT-017)	BYP	LAL-3247-017							
NÍVEL ALTO NO V-541201 (LT-019)	BYP	LAH-3247-019							
NÍVEL BAIXO NO V-541201 (LT-019)	BYP	LAL-3247-019							

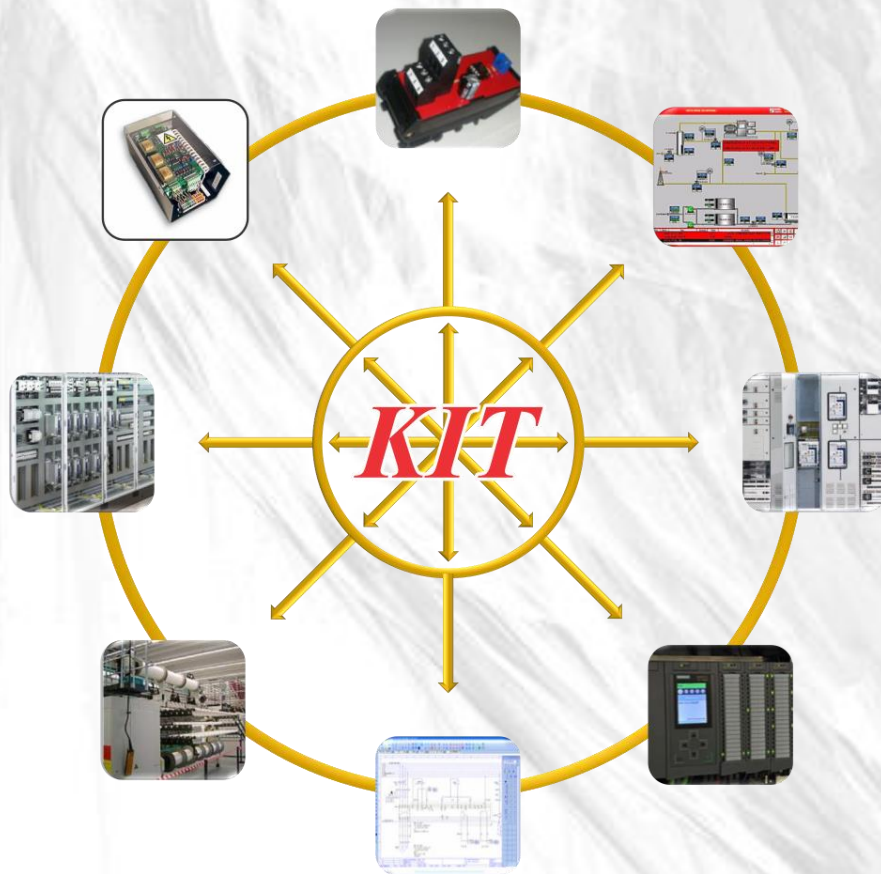
  

MATRIZ DE INTERTRAVAMENTO									
VARIÁVEIS DO									
RESET TRIP									
		OLEODUTO	FECHADA	FECHADA	FECHADA	FECHADA	FECHADA	FECHADA	FECHADA
		SDV-101	ZV-100-0	SDV-100	SDV-102	SDV-103	SDV-104	SDV-105	XV-101
		OVA	OVA	OVA	OVA	OVA	OVA	OVA	OVA
		OVF	OVF	OVF	OVF	OVF	OVF	OVF	OVF
NÍVEL MUITO BAIXO NO SO-110	BYP	LSLL-100							
NÍVEL MUITO ALTO NO SO-110	BYP	LSHH-100							
PRESSÃO MUITO BAIXA NO SO-110	BYP	PSLL-100							
PRESSÃO MUITO ALTA NO SO-110	BYP	PSHH-100							
PRESSÃO MUITO BAIXA NO SO-110	BYP	PSLL-101							
PRESSÃO MUITO ALTA NO SO-110	BYP	PSHH-101							
PRESSÃO BAIXA OLEODUTO PCM-10	BYP	PSL-100							
PRESSÃO ALTA OLEODUTO PCM-10	BYP	PSH-100							
PRES. BAIXA OLEODUTO P/ PCM-05	BYP	PSL-102							
PRES. ALTA OLEODUTO P/ PCM-05	BYP	PSH-102							
PRES. BAIXA GASODUTO P/ PCM-00	BYP	PSL-110							
PRES. ALTA GASODUTO P/ PCM-00	BYP	PSH-110							
PRES. BAIXA GASODUTO DA PCM-01	BYP	PSL-111							
PRES. ALTA GASODUTO DA PCM-01	BYP	PSH-111							
PRES. BAIXA GASODUTO P/ PCM-10	BYP	PSL-109							
PRES. ALTA GASODUTO P/ PCM-10	BYP	PSH-109							

Uses of matrices

- Example of a maintenance image of a matrix
- Effectively to assess the causes and effects of a process
- Intervention in the production process or during the maintenance mode are very simplified

## *Scope of Business*



- + Programming
- + Visualization
- + Drive technology
- + Endless material regulations
- + System retrofit
- + Commissionings
- + Expert opinions & Diagnostics
- + Tunneling machines
- + Machinery and Plant
- + Steel construction
- + Mining equipment
- + Agricultural special planes

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