

II Jornadas sobre Tecnologías y soluciones para la
Automatización Industrial

ANEXO

**COMUNICACIONES INDUSTRIALES PARA LA
INTEGRACIÓN DE DISPOSITIVOS Y SISTEMAS
ABIERTOS.**





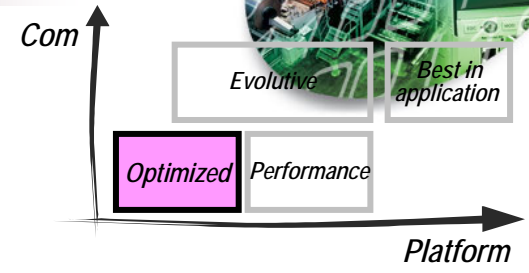
■ Preferred implementations

- ❑ In order to facilitate the selection and the building of the best solution for the customer, taking into account his values and the level of expected performances, we have defined for each class one or two preferred implementations.
- ❑ The objective of an preferred implementation is to be used as a base for building the solution of our customer with a minimum of risks by changing just some products in order to address the needs and expectations of the customers.
- ❑ Each preferred implementation is characteristic of a class and it allows to illustrate the capabilities of our offer in term of solution. For each one, we give :
 - ✍ A layout and the list of products families used.
 - ✍ The type of machines accessible with some real examples of machines build with the preferred implementation
 - ✍ A summarize of the PICCS and a complete SMD.



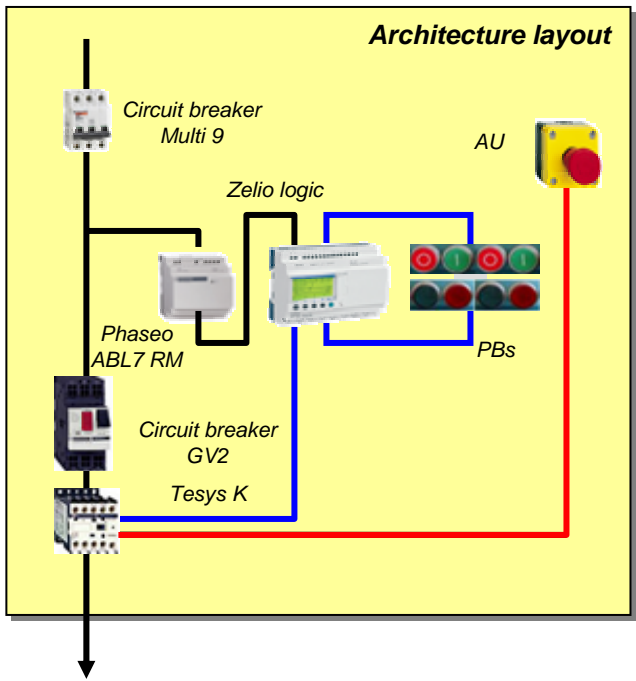
Preferred implementation

AIOP - Optimized 1



UVP

Just what you need for the best price !



Automation functions

- Controller **Zelio**
- HMI **PBs/PLs + Zelio display**
- I/Os *In rack Zelio integrated*
- Motor Control **DOL / soft starter / Drive**
- Safety **HW , Preventa**
- Protection & Power **Multi 9 + Phaseo**
- Cabling **Hardwired, PCB**
- Enclosure **Cabinet / Body machines**
- Softwares *Zelio Soft (option)*



Preferred implementation

AIOP - Optimized 1

UVP

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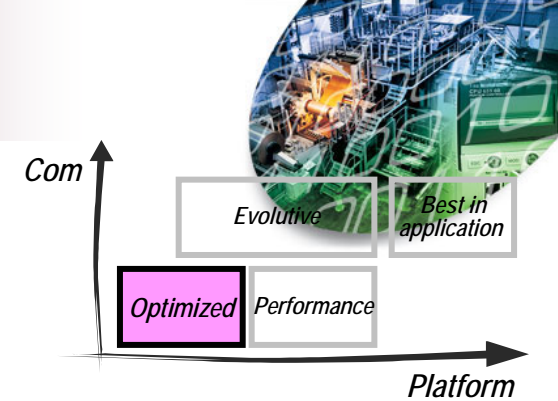
Typical applications :

Typical applications or sub-applications are in the following market sectors :

- **Industry**
 - small machinery automation systems
- **Building / services**
 - Lighting management
 - Access, control and surveillance management
 - Heating and air conditioning management

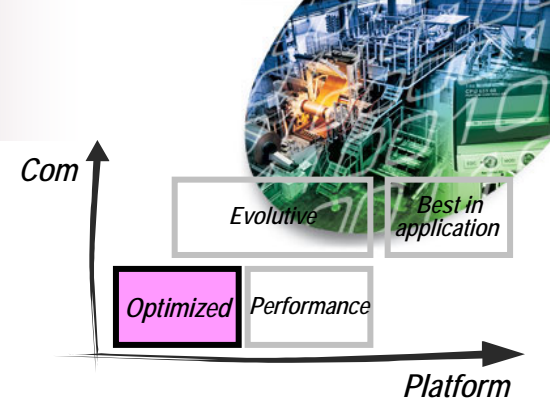
PICCS :

- **Performance**
 - 10 - 20 I/O
- **Installation**
 - No special tools to be used
 - No special training
 - Easy to use - less programming and more parameterization
- **Constraint**
 - Time to market, product available on shelves
- **Cost**
 - Hard-wired vs PCB
 - Easy and simple engineering
 - Easy to maintain - no PC required
- **Size**
 - Cabinet size as small as possible



Preferred implementation

AIOP - Optimized 1



**Petrol station
Distribution of LPG**



**Building
Automatic industrial door**



**Water distribution
Oil filtering cabinet**

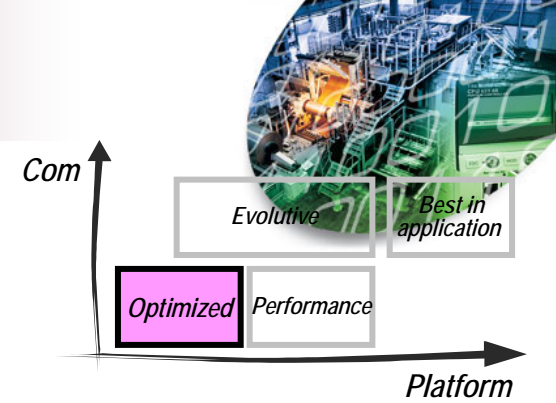


Escalator / lift - Kalea



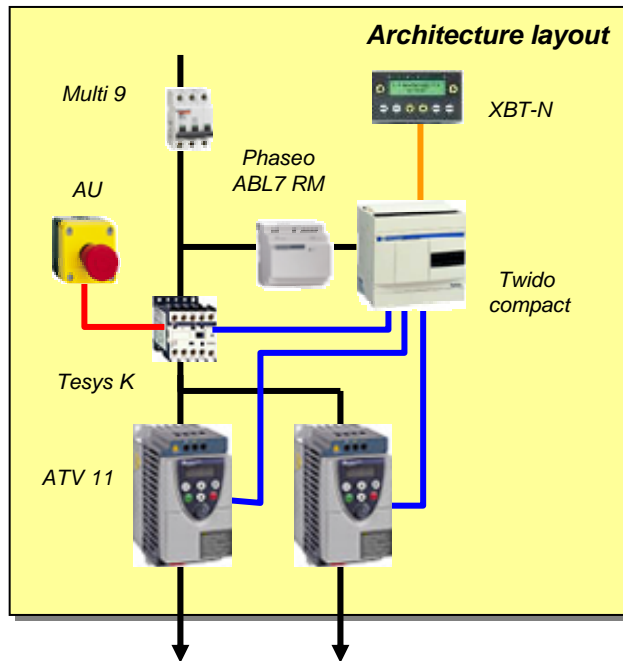
Preferred implementation

AIOP - Optimized 2



UVP

Just what you need for the best price !



Automation functions

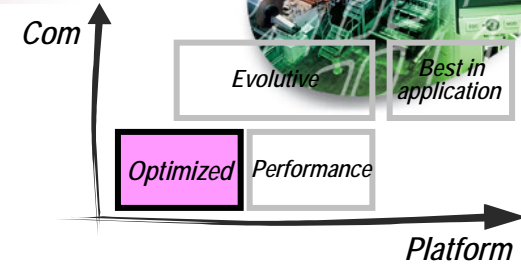
- Controller **Twido Compact / modular**
- HMI **PBs/PLs + Text**
- I/Os **In rack Twido integrated**
- Motor Control **DOL / soft starter / Drive**
- Safety **HW, modul Preventa**
- Protection & Power **Multi 9 + Phaseo**
- Cabling **Hardwired**
- Enclosure **Cabinet / Body machines**
- Softwares **Twido Soft, XBT L 1001 lite
Power Suite (option)**





Preferred implementation

AIOP - Optimized 2



UVP

Just what you need for the best price !

Typical applications

• Industry

- Refuse Collection Vehicule
- Packaging (blister, dosing, ...)
- HVAC (....)
- Wind power (....)
- Water pumping

- Building

- Swimming pool
- Access control
- Building security
- Lighting control
- Slaughtering and logistic system

PICCS :

• Performance

- 20 - 40 I/O
- Reaction time : 100 ms

• Installation

- Easy machine installation by memory application duplication (EEPROM) - no special tools to be used
- Easy programming, no special skill required

• Constraint

- Time to market, product available on shelves

• Cost

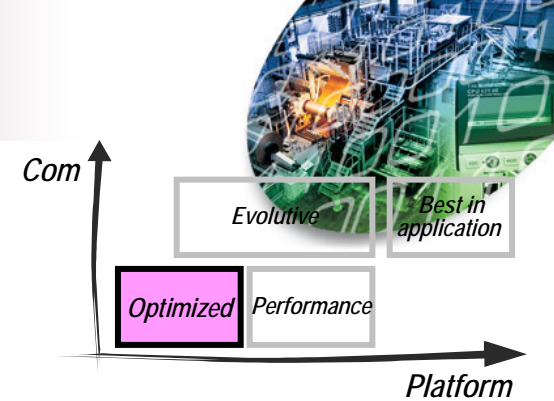
- Hard-wired vs PCB
- Easy and simple engineering
- Easy to maintain - no PC required

• Size

- Cabinet size as small as possible

All in One panel

AIOP - Optimized 2



Cutting stone machine

- controller : Twido compact :
- I/O : 24 I/O + 8 I+16 O
- Motor control : 2 x ATV28
- HMI XBT 5"
- Preventa module



Examples

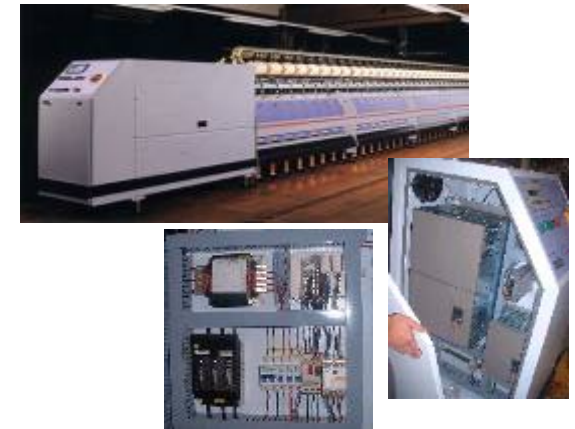
Green House

- controller : Twido compact :
- I/O : 12 I/O + 8 I+4 O
- Motor control : 1 x ATV11
- HMI XBT N 200



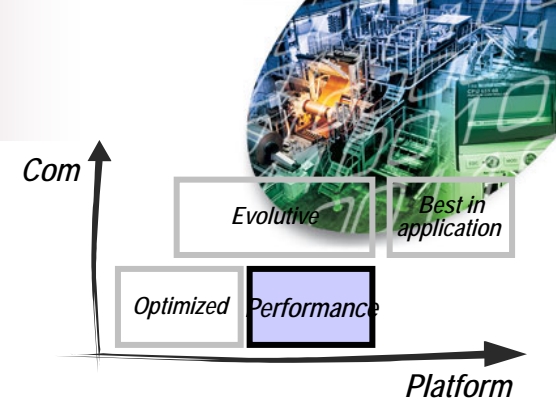
Textile Weaving Machine

- Controller : Twido compact
- 24 I/Os, with PID
- 2 ATV58F Drives,
- Neza HMI, 4 Line Text Display Unit
- Enclosure : body of the machine



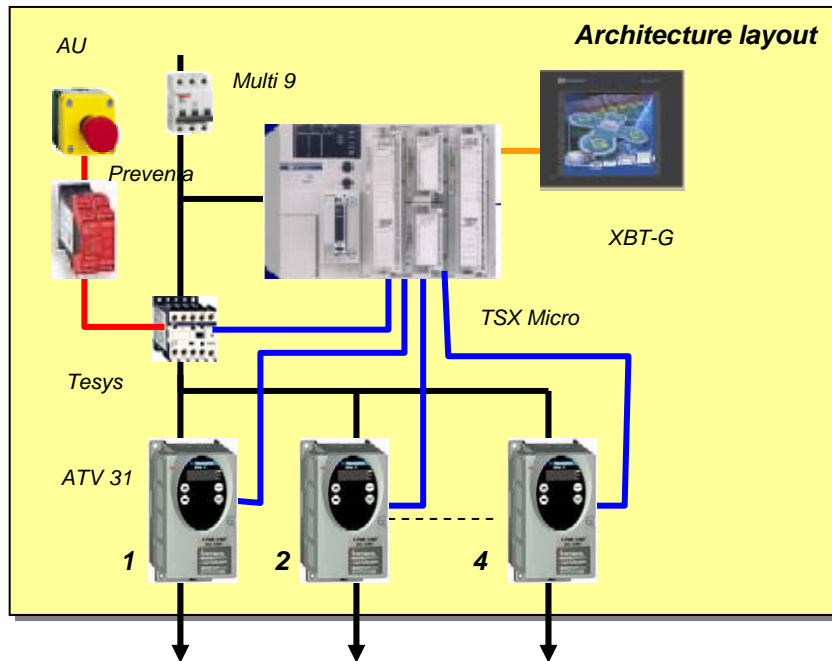
Preferred implementation

AIOP - Performance 1



UVP

The guarantee of the right performances for your best productivity !



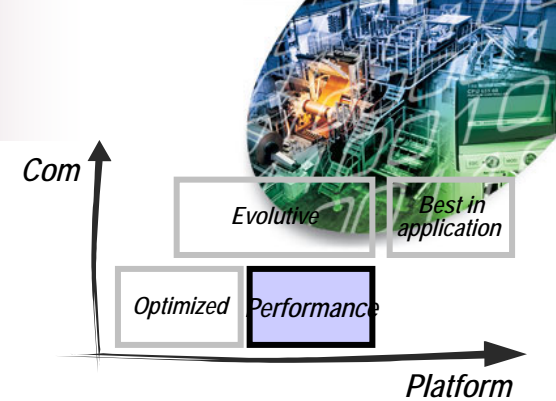
Automation functions

- Controller **TSX Micro, TSX Premium**
- HMI **PBs/PLs + Text + Graphic**
- I/Os **In rack**
- Motor Control **DOL / soft starter / Drive**
- Safety **HW, Preventa module**
- Protection & Power **Multi 9 + Phaseo**
- Cabling **Hardwired**
- Enclosure **Cabinet / Body machines**
- Softwares **PL7, Vijeo designer Power Suite**



Preferred implementation

AIOP - Performance 1



UVP

The guarantee of the right performances for your best productivity !

Typical applications

• Industry

- Assembling machines (turning table,...)
- Packaging (boxing, blister,...)
- Textile (...)
- Material Handling (conveying, vertical carousel,...)
- Water & waste treatment (...)

- Building

- HVAC
- Industrial & technical building (GTC)

PICCS :

• Performance

- 40 - 100 I/O
- Typical reaction time : 50 ms
- 4 inverters
- Connection with upper level through Ethernet TCPIP modbus (option)

• Installation - implementation

- Easy machine installation by memory application duplication (EEPROM)
- Customer engineering tools for the application (libraries, function blocks, ...)
- Cabling without expertise

• Constraint

- Easy and flexible commissioning

• Cost

- Minimize the programming and commissioning cost

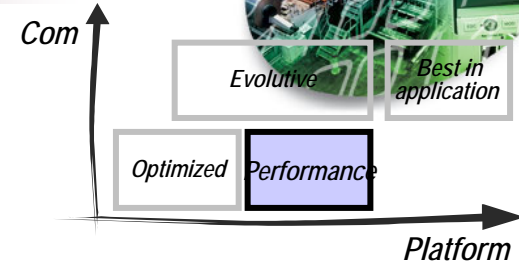
• Size

- Cabinet size as small as possible



All in One panel

AIOP - Performance 1



Examples

Packaging : Boxing machine

- Controller : TSX Micro,
- #100 I/O
- 1 Graphic HMI touch screen 5,7
- 3 Inverters
- Enclosure : cabinet



- Production : 120 p/mn

Textile : Inspecting machine

- Controller : TSX Micro,
- 50 digital I/O - 50 analog I/O
- 1 text graphic HMI + PBs
- 12 motors : 7 ATV 31 / 5 DOL
- Enclosure : body of the machine



- Max roll diam : 50 cm
- Working speed : 0 to 50 Mt/1 '

Assembling machine : Turning table

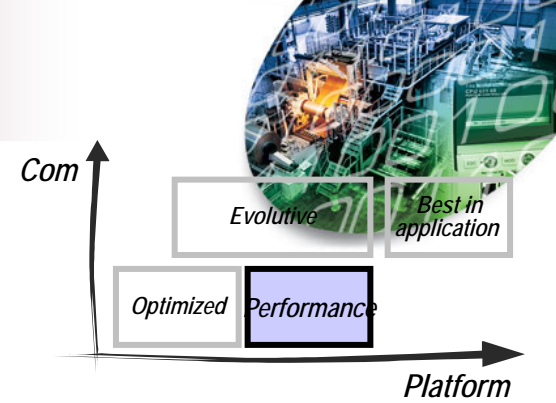
- Controller : TSX Micro,
- # 60 I/O
- 1 text HMI
- 1 Inverter ATV 31
- Enclosure : cabinet



- Production : 60 p/mn

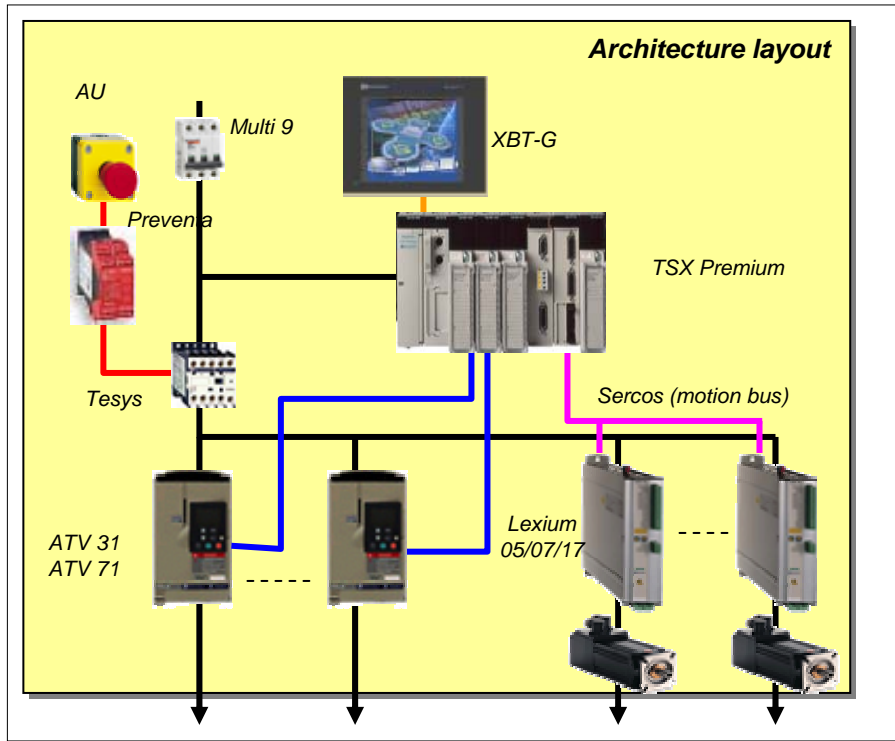
Preferred implementation

AIOP - Performance 2



UVP

The guarantee of the right performances for your best productivity !



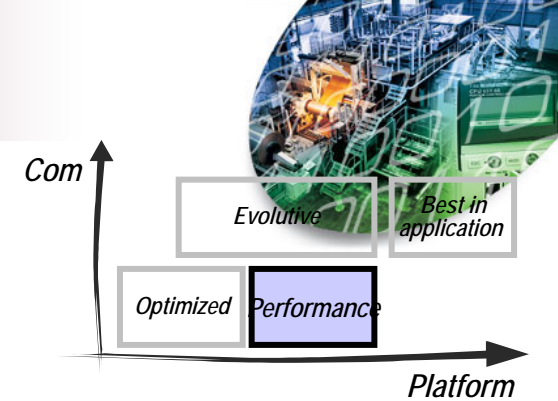
Automation functions

- Controller **Premium, Quantum**
- HMI **PBs/PLs + Text + Graphic**
- I/Os **In rack**
- Motor Control **DOL / soft starter / Drive / Motion (option)**
- Safety **HW, Preventa module**
- Protection & Power **Multi 9 / Compact NS**
- Cabling **Hardwired**
- Enclosure **Cabinet / Body machines**
- Softwares **PL7, Vijeo designer Power Suite,**



Preferred implementation

AIOP - Performance 2



UVP

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Typical applications

• Industry

- Assembling machines
- Automotive
- Packaging (bagging, boxing, filling,...)
- Plastic (...)
- Printing machines (...)
- Textile (...)
- Wood (edgebanding, panel sizing,...)

- Building

- NA

PICCS :

• Performance

- I/O : 50 - 200
- Typical reaction time : 50 ms
- Connection with upper level through Ethernet TCP/IP modbus (option)
- Axis : 3 - 8
 - Precision : 0.2 mm
 - Motion cycle time : 2 ms

• Installation - implementation

- Easy machine installation by memory application duplication (EEPROM)
- Customer engineering tools for the application (libraries, function blocks, ...)

• Constraint

- Easy and flexible commissioning

• Cost

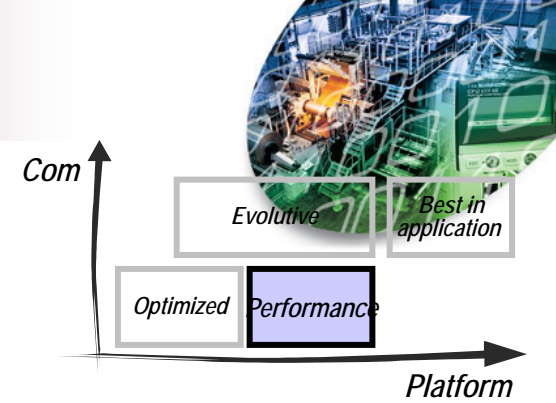
- Minimize the programming and commissioning cost

• Size

- Cabinet size : medium to large

All in One panel

AIOP - Performance 2



Packaging

Horizontal bagging machine

- Controller : TSX Premium
- #120 Digital I/O - 6 Analog I/O
- 4 axis (1motion - 3 drives)
- Graphic HMI 10"
- Panel : cabinet



- Production : up to 1000 p/mn
- Film positioning : 1 mm

Examples

Automotive

Body shop - Machines

- Controller : TSX Premium
- #160 Digital I/O
- 3 axis

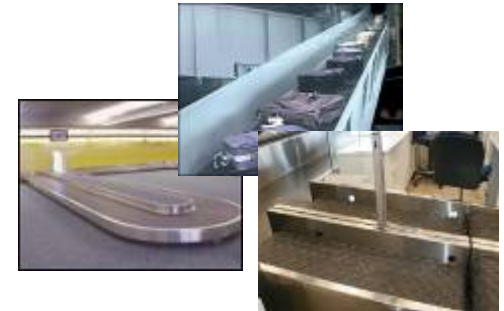


Production: up to 2 p/mn

Airport

baggage handling system - Machines

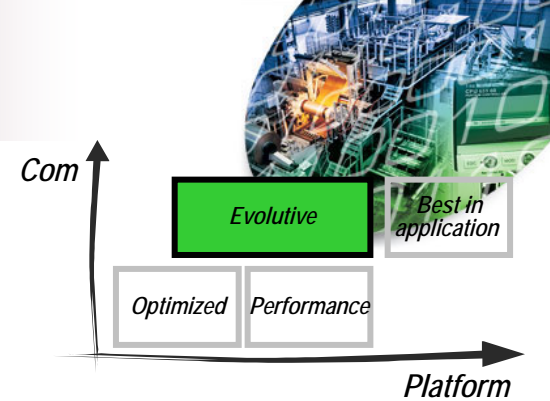
- Controller : TSX Premium
- #300 Digital I 90 Diogital O
- 3 axis



• Performance: 35 to 80 m/min

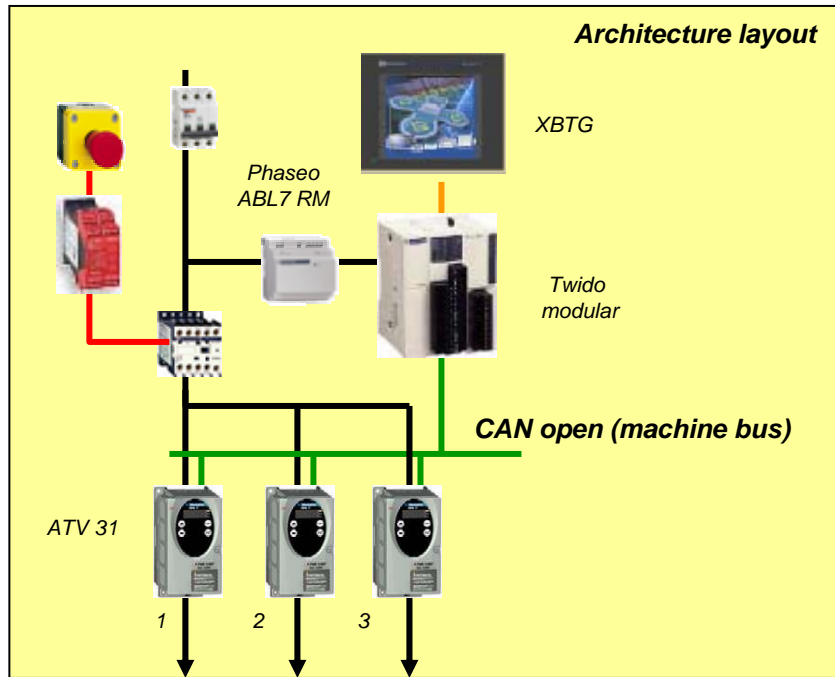
Preferred implementation

AIOP - Evolutive 1



UVP

The guarantee of interoperability within a large catalog !



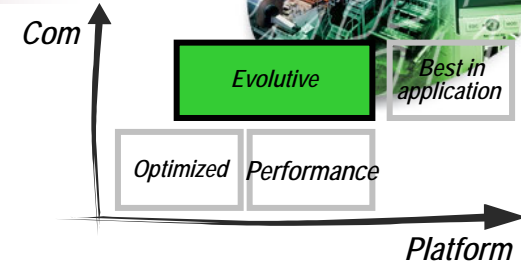
Automation functions

- Controller *Twido Compact / Twido modular*
- HMI *PBs/PLs + Text / Graphic (XBTG)*
- I/Os *In rack*
- Motor Control *DOL / soft starter / Drive*
- Safety *HW, Preventa module*
- Protection & Power *Multi 9 + Phaseo*
- Cabling *CANopen*
- Enclosure *Cabinet / Body machines*
- Softwares *Twido soft / Vijeo Designer Power suite*



Preferred implementation

AIOP - Evolutive 1



UVP

*The guarantee of interoperability
within a large catalog !*

Typical applications

- **Industry (compact machines)**
 - Assembling (labeling, blister, filling, dosing,...)
 - Material handling (stocker, ...)
 - Packaging (labeling, blister, filling, dosing, ...)
 - Pumping
 - Refuse collection vehicle
 - Textile
 - Water treatment (closed system)
- **Building**

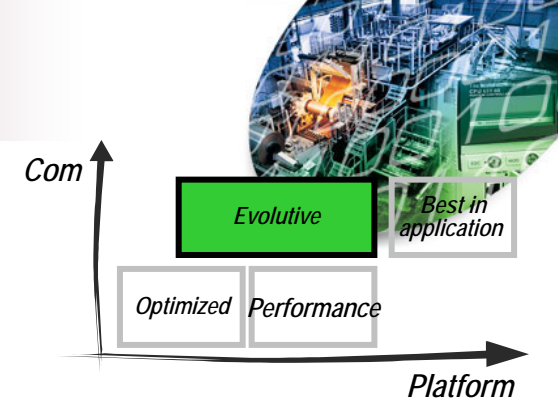
PICCS :

- **Performance**
 - 40 - 60 I/O
 - Reaction time : 100 ms
 - Drives (ATV31) : < 4
- **Implementation**
 - Twido CANopen configurator easy to use (integrated in programming tool)
 - CAN open cabling system IP67
- **Constraint**
 - Limitation of the number drives (4)
 - CAN Open configuration simplified but limited
 - HMI connected on dedicated link
- **Cost**
 - Reduction of the cabling cost
- **Size**
 - Cabinet : medium size to large
 - Body machine

All in One panel

AIOP - Evolutive 1

Examples



Palletizer

- Controller : Twido modular
- 20 - 40 I/O
- 2 -4 VVDs
- Enclosure : body of the machine



Refuse Collection Vehicule

- Controller : Twido modular
- 40 - 50 I/O
- HMI : PBs+ Graphic
- Enclosure : body of the machine + cabinet



- Compatibility with CAN J1939
- Cabling easiness
- Temperature & CEM compatibility

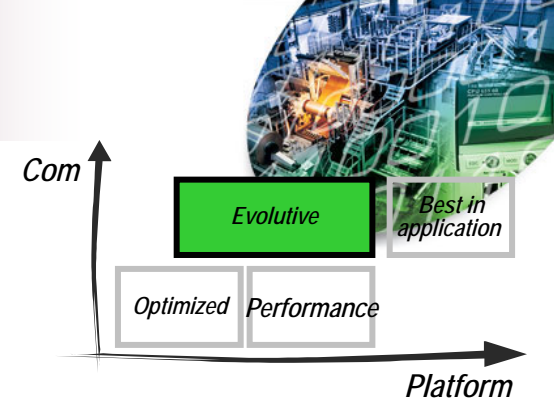
Textile Winding & Unwinding

- Controller : Twido modular
- HMI : PBs
- 2 AT31 Drivers on CAN open
- Enclosure : body of the machine



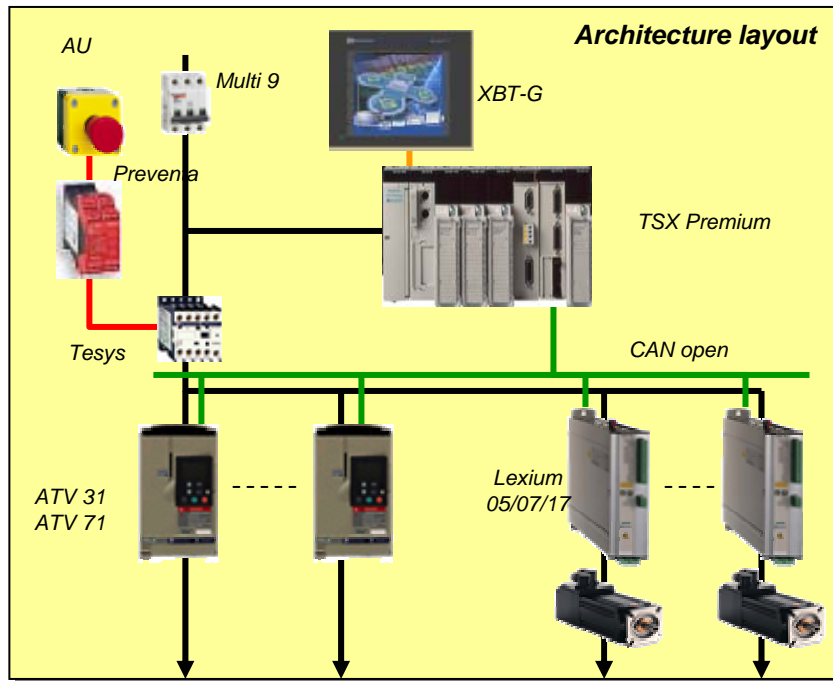
Preferred implementation

AIOP - Evolutive 2



UVP

The guarantee of interoperability within a large catalog !



Automation functions

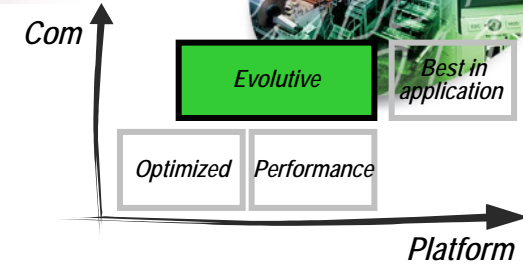
- Controller *Micro, Premium, Quantum*
- HMI *PBs/PLs + Text + Graphic*
- I/Os *In rack,*
- Motor Control *DOL / soft starter / Drive / MOTION*
- Safety *HW, Preventa module*
- Protection & Power *Multi 9 + TSX supply module*
- Cabling *CANopen*
- Enclosure *Cabinet / Body machines*
- External com *Ethernet TCP/IPModbus (option)*
- Softwares *PL7, Vijeo designer, Motion SW power suite*

Preferred implementation

AIOP - Evolutive 2

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within a large catalog !*



Typical applications

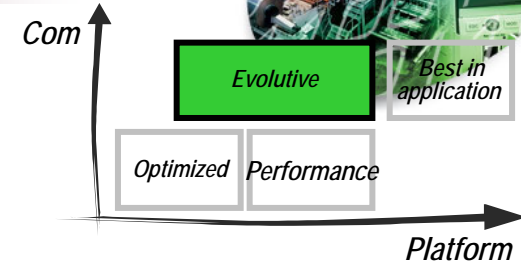
- **Industry (compact machines)**
 - Assembling (testing machines,...)
 - Automotive
 - Packaging
 - Printing
 - Wood machine
 - Water treatment

PICCS :

- **Performance**
 - 80 - 150 I/O
 - Typical reaction time : less than 10 ms
 - Connection with upper level through Ethernet TCP IP Modbus (option)
- **Implementation**
 - Easy machine installation by memory application duplication (EEPROM)
 - Customer engineering tools for the application (libraries, function blocks, ...)
 - Easy evolution and adaptation (machine bus)
- **Constraint**
 - A single CAN Open by Premium
 - A dedicated link for HMI
- **Cost**
 - Cabling optimization
 - Application software libraries
- **Size**
 - From medium to large cabinet
 - Body of the machine

All in One panel

AIOP - Evolutive 2



Examples

Bread machine

- 60-80 Digital I/O
- 4-9 VVDs
- Graphic Terminal



- Performance: 6-24 p/mn

Packaging - Bagging machine

- 1 Premium + CAN open
- 80 Digital I/O - 10 Analog I/O
- 4 inverters
- Graphic Terminal (XBTF)



- 100 p/ mn
- Film positioning : < 4-5 mm

Assembly line

- 1 Premium
- 120 Digital I/O
- 4 VVDs
- Text and Graphic Terminal



- Performance: 20s/skid