

NEXTO



RELIABILITY IN FUNCTIONAL SAFETY



MARKETS

VERSATILE AND WITH HIGH PERFORMANCE, NEXTO OFFERS INNOVATIVE FEATURES FOR AUTOMATION AND INDUSTRIAL MULTIPLE CONTROL PROCESSES SUCH AS OIL & GAS SYSTEMS | INFRASTRUCTURE | AUTOMOTIVE MACHINES AND LARGE INDUSTRIES

PROGRAMMING ENVIRONMENT

MASTERTOOL IEC XE



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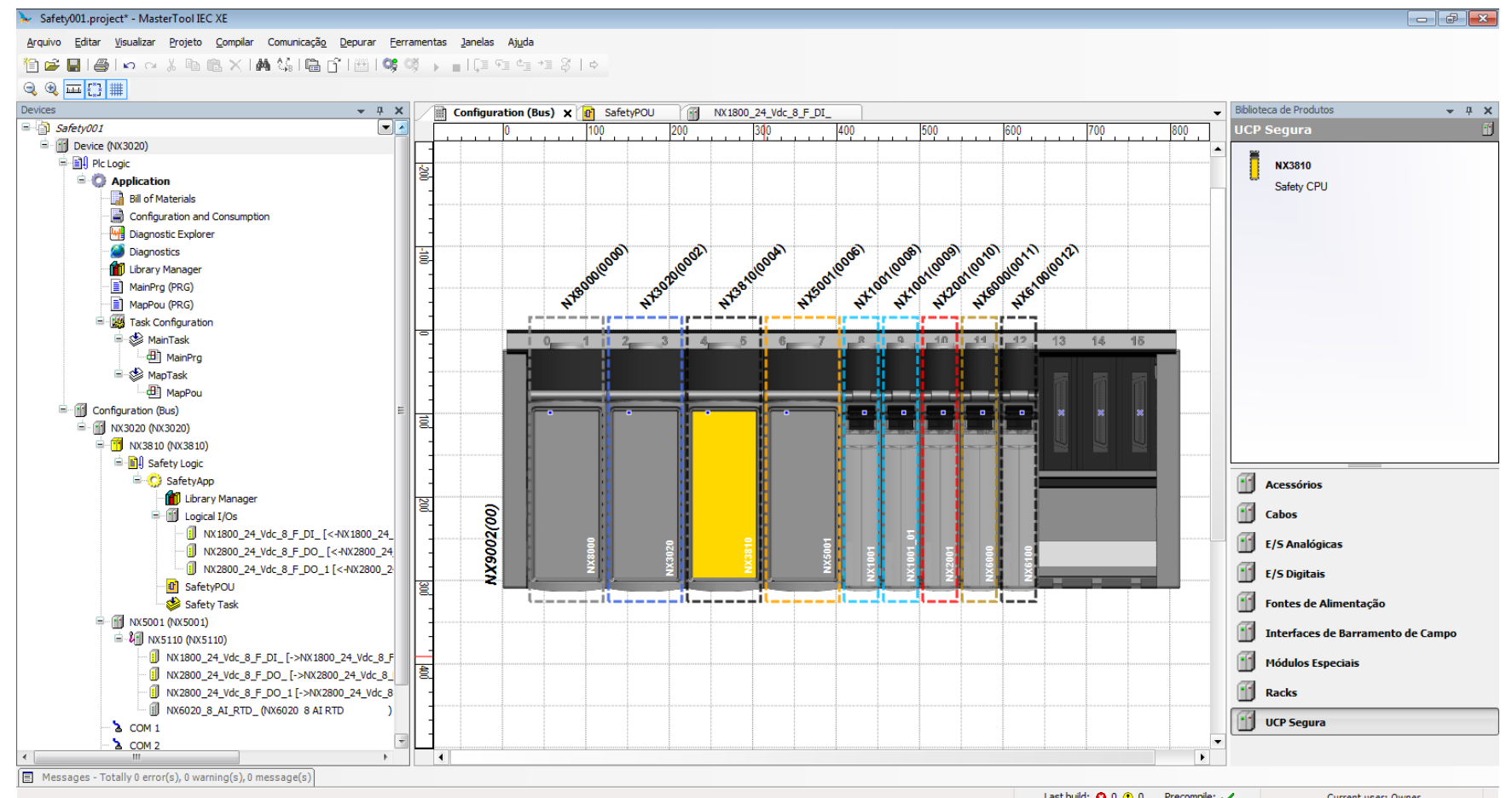
- An easy-to-use environment for all your automation needs
- Friendly user interface
- Control platform with modern programming environment
- 6 programming languages in accordance to IEC 61131-3
- Integration with safety logics



MASTERTOOL IEC XE

Enables fast and smart configuration of the system:

- Advanced edition resources, integrating communication protocols and fieldbus configuration within the same environment
- Graphic configuration interface (including remote backplanes)
- “Auto Complete” resources and integrated quick help files



MASTERTOOL IEC XE

- Offline application simulation
- Online application debugging
- Monitoring of:
 - I/O variables
 - Symbolic Variables
 - System diagnostics
 - Modules diagnostics
- Step-by-step execution and breakpoint use
- SCADA and HMI communication simulation using OPC DA

The screenshot displays the MasterTool IEC XE interface for a safety logic program. The main window shows a variable declaration table and a ladder logic diagram.

Line	Scope	Name	Type	Initial va...	Comment
1	VAR	SF_CTUD_01	SF_CTUD		
2	VAR	PV01	SAFEINT	0	
3	VAR	QU_ALARM_01	SAFEBOOL	FALSE	
4	VAR	QD_ALARM_01	SAFEBOOL	FALSE	
5	VAR	MANUAL01	BOOL	FALSE	
6	VAR	NOT_MANUAL01	BOOL	FALSE	
7	VAR	SENSOR_U01	BOOL	FALSE	
8	VAR	SENSOR_D01	BOOL	FALSE	
9	VAR	M_SENSOR_U01	BOOL	FALSE	
10	VAR	RESET_01	BOOL	FALSE	
11	VAR	LOAD_01	BOOL	FALSE	
12	VAR	SENSOR_D01	BOOL	FALSE	
13	VAR	M_SENSOR_D01	BOOL	FALSE	
14	VAR	CV_01	SAFEINT	0	

The ladder logic diagram shows a safety function block (SF_CTUD_01) with inputs: CU, CD, QU, QD, CV, and PV. The logic involves AND and OR gates connecting various sensor and manual inputs to the SF_CTUD_01 block. The output is QU_ALARM_01.

The right sidebar contains a toolbox with categories: General, Boolean Operators, Math Operators, Other Function blocks, and Safety Function blocks. The Safety Function blocks include SF_Antivalent, SF_EDM, SF_EmergencyStop, SF_EnableSwitch, SF_Equivalent, SF_ESPE, SF_GuardLocking, SF_GuardMonitoring, SF_ModeSelector, SF_MutingPar, SF_MutingPar_2Sensor, SF_MutingSeq, SF_OutControl, SF_SafetyRequest, SF_TestableSafetySensor, SF_TwoHandControlTypeII, and SF_TwoHandControlTypeIII. The Safety Standard FBs include SF_CTD, SF_CTUD, SF_CTU, SF_TOF, SF_TON, and SF_TP.

NEXTO SERIES

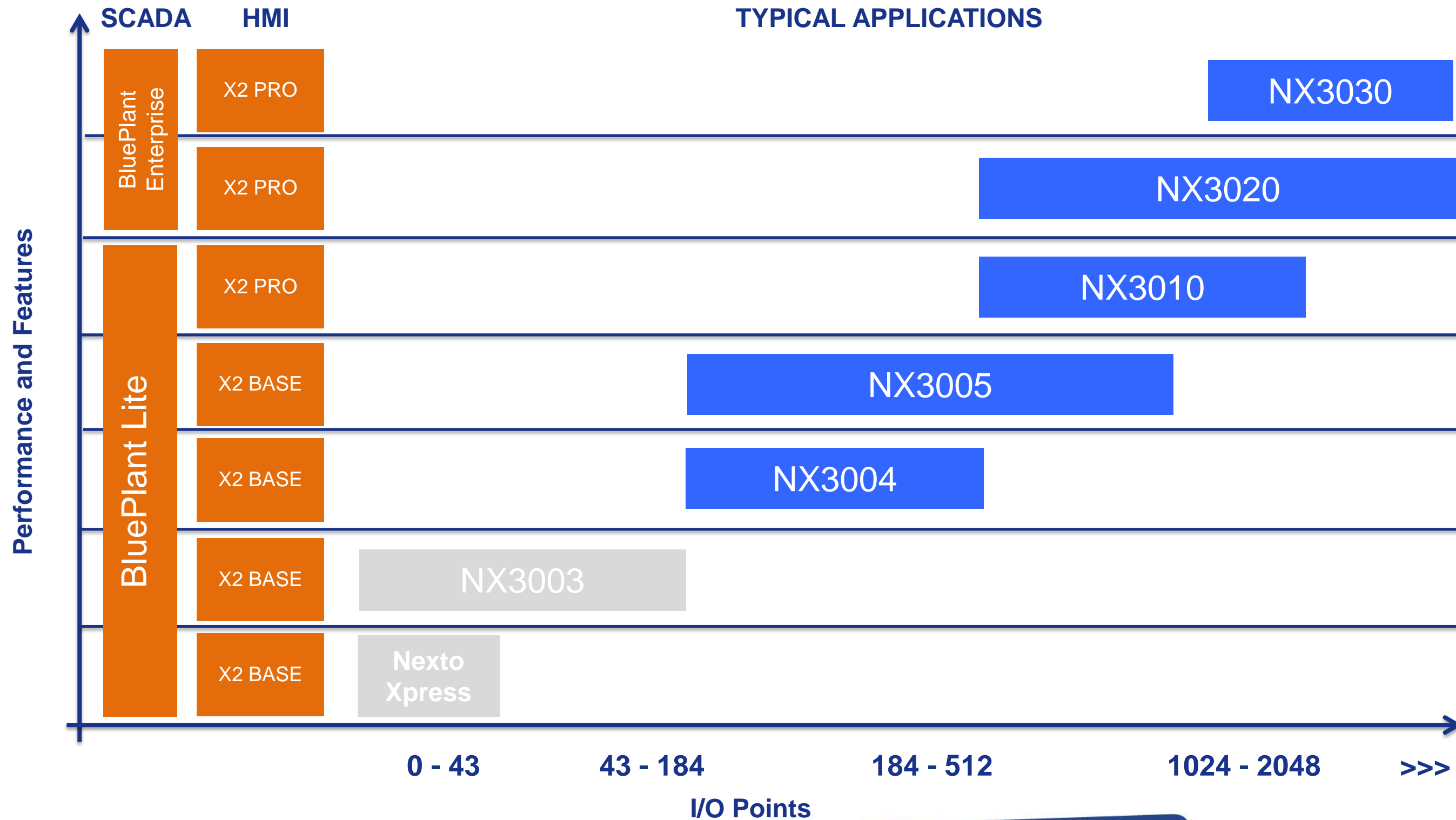
PROGRAMMABLE CONTROLLERS

***FLEXIBILITY,
RELIABILITY,
SMARTNESS,
AND EFFICIENCY***

- **Flexible:** from small to large systems,
● redundant or distributed;
- **Reliable:** high reliability for safety
● instrumented systems;
- **Smart:** Precise diagnostics and
● compact design;
- **Efficient:** Superior performance
● and easy to use.

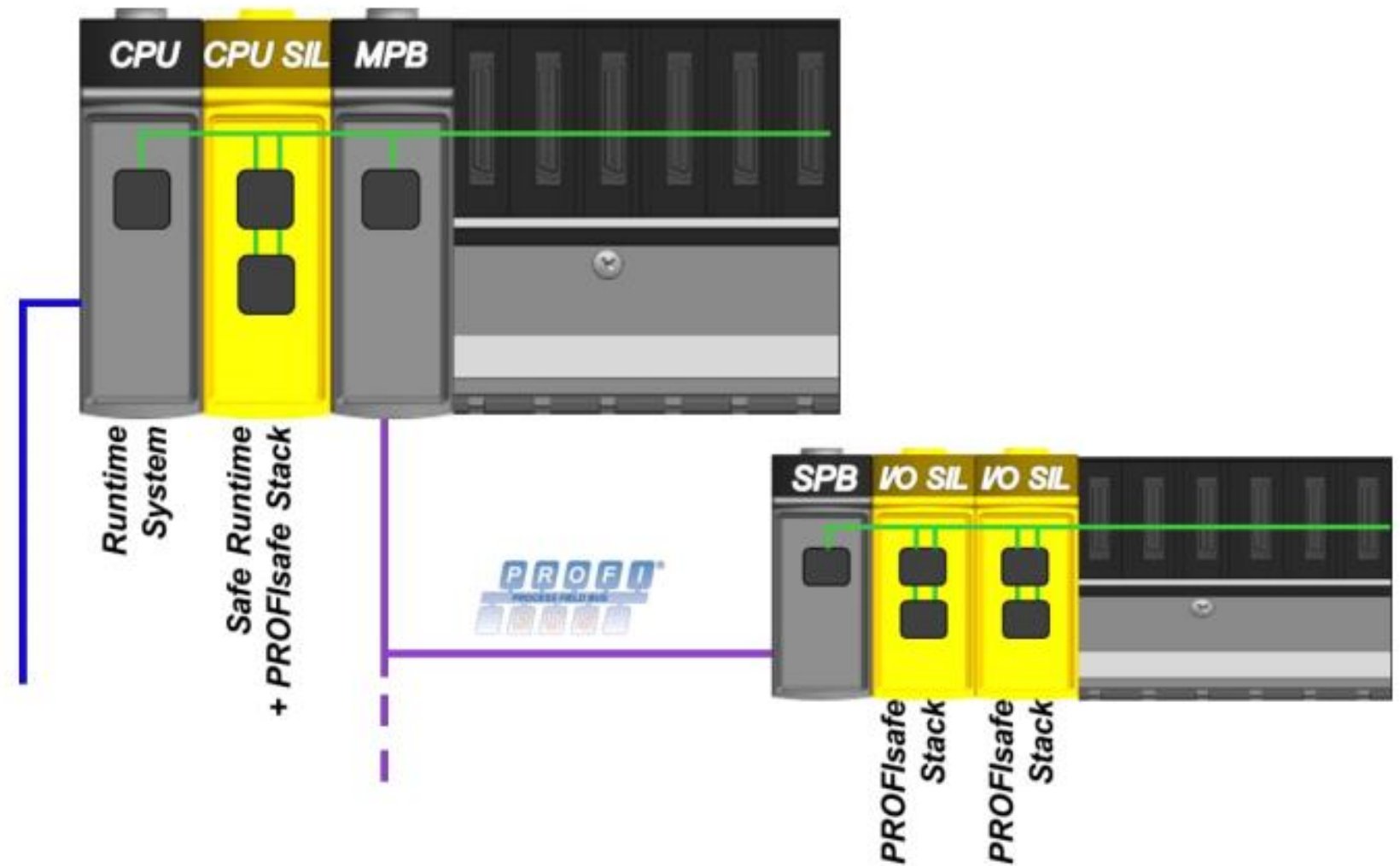


NEXTO SERIES



NEXTO SAFETY

- Created to minimize the probability of dangerous failures in the development of projects and products manufacturing
- ISO 13849-1 (Cat. 4 PLe.)
- IEC 61508 and IEC 62061 (up to SIL 3 level)



NEXTO SAFETY

- Altus functional safety solution is formed by:
- Safety CPU: NX3810 (compatible with NX3004 CPU or superior)
- 8 safe digital inputs module: NX1800
- 4 safe digital outputs module: NX2800
- Safe protocol: PROFIsafe





ENGINEERING SOLUTIONS

- As a player in the automation market for more than three decades, Altus offers complete solutions for the demands of Oil & Gas, Power, OEM Machines and general industry

The image shows an industrial facility with a large, light-colored warehouse on the left and a tall, complex structure of orange pipes and metal scaffolding in the center. The sky is overcast. The right side of the image is overlaid with a purple gradient containing text.

INDUSTRY

BIANCHINI

- End customer developed projects:
 - Modernization of Extraction, Milling, Tripper's Driving, Warehouses #2 and #3, Laminators #1 and #2, Sieve. Preparation, Flow Scale, Dryer and Pier Towers procedures
 - The implementation of the redundant system has improved the production in about 30%

INDUSTRY

ICAVI

- Machine manufacturer:
 - Boiler industry
 - Small to large equipment for the boilermaking segment and accessories
 - More than 150 projects, in which 7 are boilers for thermoelectric power plants



PROBLEM

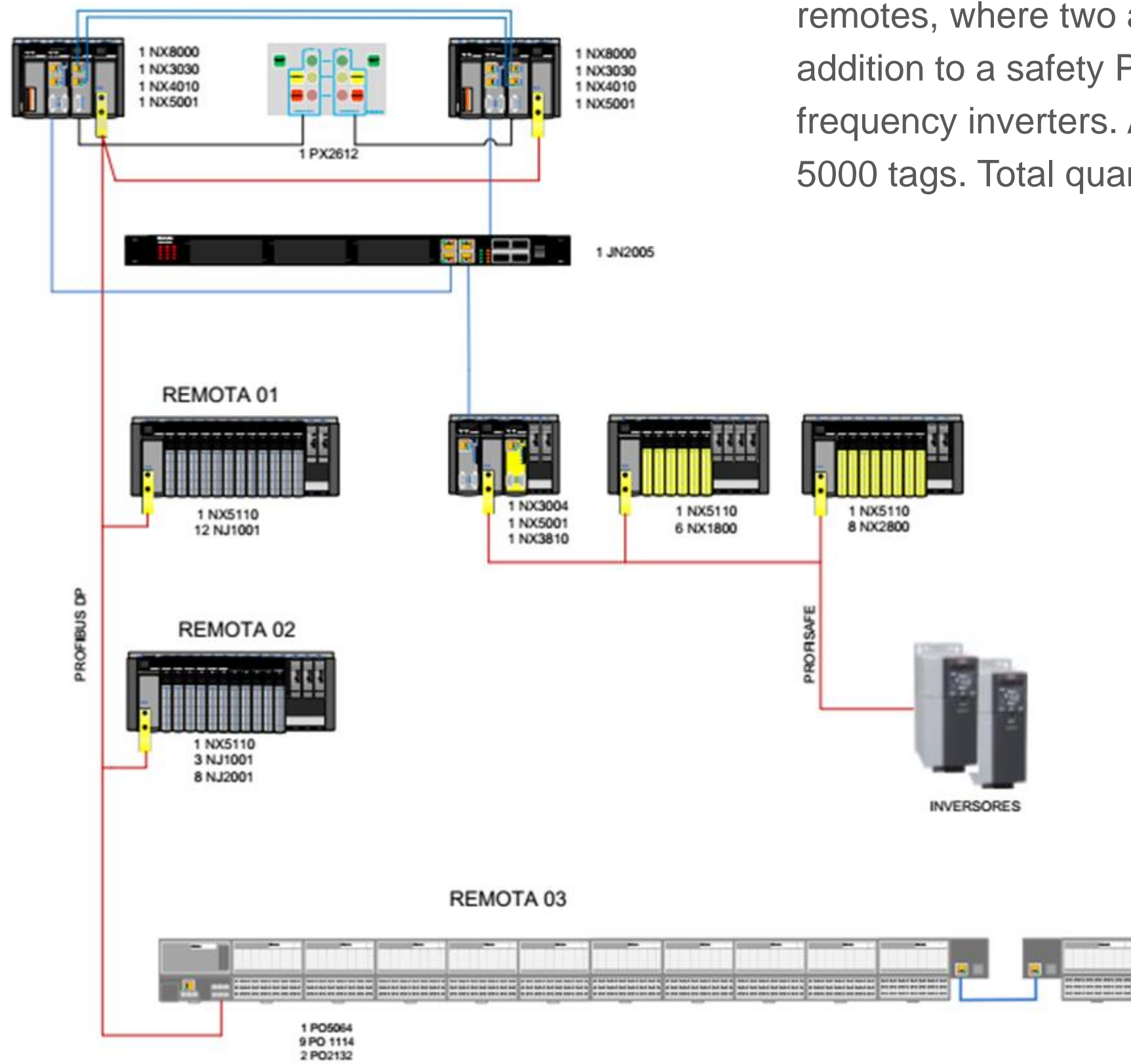
- Control System for Bianchini's new processing plant boiler control system
- ICAVI – Vale do Itajaí's Boiler industry
- Main process of the plant: cannot fail
- Meticulous pressure control: tank fully under pressure
- Integration with other automation systems found in the industrial plant



SOLUTION

The solution counts on a redundant CPU controlling 3 PROFIBUS remotes, where two are Nexto and one is Ponto with HART I/Os, in addition to a safety PLC with two PROFIsafe remote and 25 frequency inverters. All supervised via BluePlant SCADA/HMI with 5000 tags. Total quantity of points: 528

- 240 digital inputs
- 48 safe digital inputs
- 128 digital outputs
- 32 safe digital outputs
- 72 analog HART inputs
- 8 analog outputs



RESULTS

- Project development done together with the boiler's manufacturer and the end customer = results beyond expectations
- Training about Functional Safety: How to develop safety logics
- Rugged control, minimized dangerous failures probability and high availability with redundant Nexto system and Nexto Safety PLC



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