

**FOR ENDLESS  
RELIABILITY  
PROCESSES**

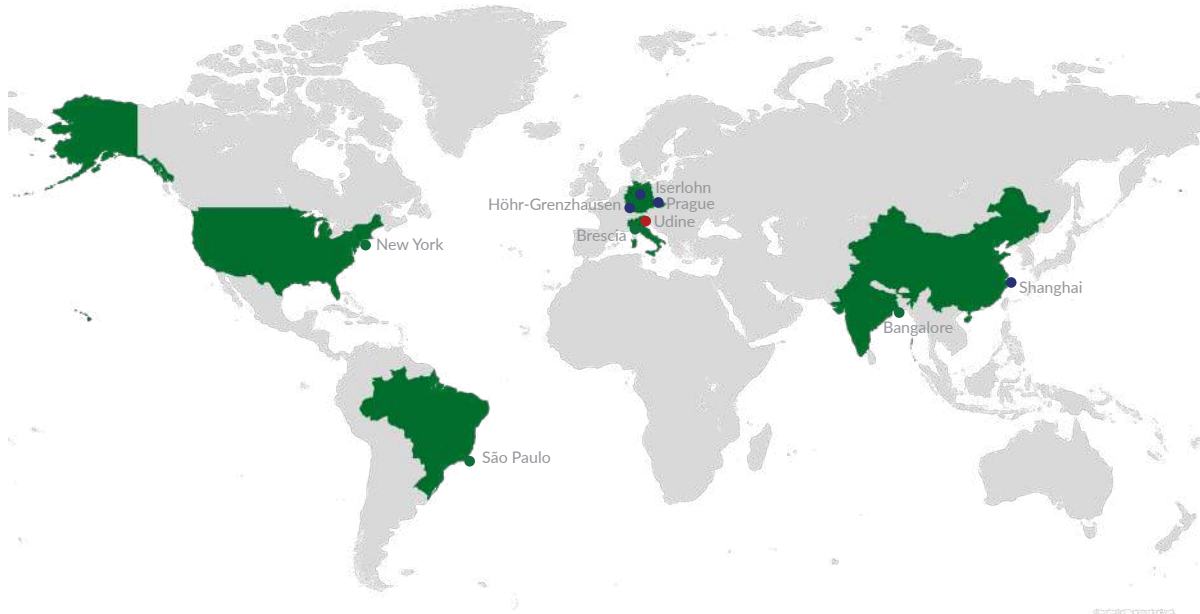
[www.aicnet.it](http://www.aicnet.it)



WHERE WE ARE

# WE ACT GLOBALLY

We are a spanning-global group with **10 technical centers** – including E&A, Mechatronics, Service and R&D divisions – with the presence of representative agents in every continent. ATS Mechatronics joined the Group in 2019, while KIA in 2021.



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WHO WE ARE

# TAILORED & ADVANCED SOLUTIONS



## COMBINING DECADES OF EXPERIENCE IN STEEL AND METALS FIELDS

AIC is a family-run company founded by Mr Dino Capitanio and his wife Giuseppina in **1975** in Odolo, a small village in the Valle Sabbia valley of the Brescia province in Northern Italy. Today, the company is still run by the Capitanio family: Mr Dino as president and his son Marco as CEO of a global team in the steel and metals industry.

## OUR MISSION

The well-being of our stakeholders is the priority, and the care of our teammates is on top of it. Driven by in-depth **innovation**, our success is built on the success of our customers.

Motivated by lasting entrenched expertise, driven by our core values, we always work to put the most technological solutions into our customers' hands, to actually let them achieve the highest level of performance, flexibility, and quality in every aspect.

“ **The industry can be a fully circular economy and AIC is actively working in this direction.** ”

## OUR APPROACH

We are committed to learning and satisfying the customer's needs through constant closeness and listening to him when he tells us about himself and his production process.

We handle in detail all stages of the process cycle management, supporting countless partners with the most compelling relationship.

## CORE VALUES



QUALITY &  
TRUSTABILITY



PASSION



INNOVATION &  
OPENNESS



QUICKNESS

## OUR ASSETS

*Our secret is the people on whom we rely and with whom we strive for continuous and inclusive growth*



### In-house workshops, tests and assembly

Our workshops are used to assemble and test the components, allowing insourcing activities while ensuring that the advanced know-how is preserved. All procedures adhere to strict guidelines and uniform models at each stage of the manufacturing process, plus certified according to the CE/ETL & the main international rules.

Workshops are approved by cETLus and quality proven by ISO 9001:2015.



ISNetworld member



UL Listed equipment



ISO 9001:2015



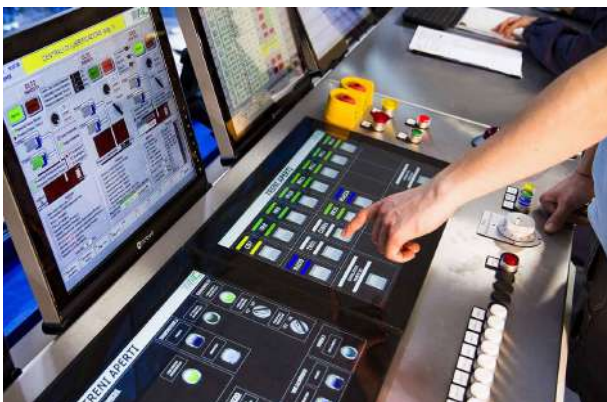
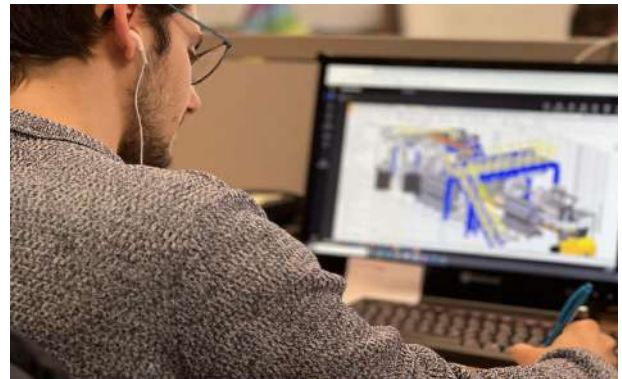
DIN EN ISO 45001:2018



ISO 9001:2015

### Engineering Design Process

Internally, we have a number of specialists in various areas of the process, qualified technicians and engineers in electrical, automation, hardware, mechanical and hydraulic components, CAD & 3D design, plant engineering, and machine board. This allows us to assemble teams for each project that are always unique while guaranteeing internal competencies.



### Turnkey automation plants

We are able to offer turnkey packages, responsive systems that are completely functional, and solutions that let you gain the following undeniable benefits:

- Cost-effective resource optimization
- Matching each unique process restriction
- Not restricted to a single platform
- Using current hardware as much as possible
- Low cost and quick payback

## CORE COMPETENCIES

# GREENFIELD AND REVAMPING FOR **LONG AND FLAT PRODUCTS**

As a technological partner with extensive experience and deep know-how, AIC is a global power control supplier and system integrator that designs, manufactures, and implements automation systems, process control, and mechatronic solutions for both **greenfield** and **revamping** projects.



### POWER CONTROL

- MV & LV distribution panels
- MCC panels
- AC & DC drive panels



### AUTOMATION

- PLC & Automation panels
- HMI systems
- Level 2&3 systems
- Main and local control desks



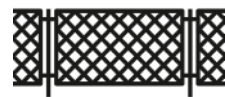
### MECHATRONICS

- Robotics
- Stand-alone applications
- Vision systems
- AI & Machine Learning



### SPECIAL MACHINES

- Tying & strapping machines
- Automatic trimming & sampling stations
- Tailored made machines



### SAFETY SYSTEMS

- Safety systems including fences & protection devices
- Consultancy & CE marking

PROCESSES

# IN-DEPTH PORTFOLIO FOR THE **STEEL-PRODUCTION CHAIN**

AIC Automazioni Industriali Capitanio can boast unique expertise in melt shops, continuous casting machines, long products rolling and downstream processes.

## Some CCM references

SIMEC CARIACICA (Brazil, CCM #5)  
CCM Greenfield

ACCIAIERIE DI SICILIA (Italy, CCM #4)  
CCM revamping and upgrade

FERALPI LONATO (Italy, CCM #6)  
CCM Complete revamping and safety system

DUFERDOFIN-NUCOR (Italy, CCM #4)  
CC1 safety system

SN SEIXAL (Portugal, CCM #6)  
Fully automatic crane



## STEELMAKING

Electrical Arc Furnaces (EAF)  
and Ladle Furnaces (LF)

process control, material  
handling and traceability.

## CONTINUOUS CASTING

CCM machines for billets,  
blooms and slabs

level control oscillators,  
straighteners, lines  
management and tagging.

## HOT ROLLING

Hot Rolling for  
Long & Flat products

a complete portfolio of hot  
rolling long solutions (billets,  
wire rod, bar/rebar, sections,  
SBQ) and flat products.

## PROCESSES

The Group (by KERN Industrie Automation units) covers all areas of instrumentation and control technology from hot and cold flat production phases, in secondary metallurgy and process engineering.

The technicians and engineers have a deep understanding of requirements for the new plant, whether planning chemical/physical or biological processes within production process.

### Some Strip Processing Lines references

CD WÄLZ HOLZ  
(Germany, Medium and Broad strip pickling line)  
Modernisation of the entire electrical equipment in connection with replacement of the pickling and rinsing section

THYSSENKRUPP RASSELSTEIN GmbH  
(Germany, Strip pickling line)  
Modernisation of the entire electrical equipment plus integration of a Motor Control Center with 70 drives and 20 infeeds into the existing VA11 process control system

THYSSENKRUPP STEEL EUROPE AG (Heavy plate pickling line)  
Modernization of the entire electrical engineering  
Replacement of all AEG controls by S7

THYSSENKRUPP STEEL EUROPE AG (Strip coating line)  
Modernization of the entire electrical engineering, new S7 controls, modernization of the conveyor belt, new security technology

BAOSTEEL Group (China, Wire coil pickling line)  
Planning, production and delivery of the complete electrical engineering, Manipulator software "K-I-A Coil Control" and Level 1 automation (PLC / Visu)



### COLD ROLLING

Through pickling, cold rolling and heat treatment

includes the following stages:

- cold rolling in a tandem rolling mill
- annealing
- temper rolling

### STRIP PROCESSING LINES

Right up to metal processing by galvanizing or tinning

- galvanizing lines
- pickling lines
- coating lines
- slitting lines
- cut-to-length lines
- finishing lines

### ANCILLARY PLANTS

Complete systems for Water Treatment, Dedusting of plants and Logistics

for both melt shop and rolling mill, with integrated automation, power control equipment and motors, overhead cranes with autonomous control, traceability.

## REHEATING FURNACE

A seamless integrated global control system for different products range (such as billets, blooms & slabs).

Our approach in reheat furnaces automation - either new and/or existing ones - passes through different levels to optimize efficiency and performance for control loops, handling and regulation in each stage:

- Level 0: Instrumentation integration
- Level 1: Combustion & Temperature control
- Level 2/2+: Mathematical models

### Some RHF references

GERDAU GROUP (Canada/USA, Cambridge/Jackson)  
Revamping of combustion & handling automation/Level 2  
Pusher type 5 zones, 80t/h  
Pusher type 5 zones, 110t/h

ACCIAIERIE VENETE (Italy, Mura/Dolcè)  
Revamping of combustion & handling automation/Level 2

CMC COMMERCIAL METALS (USA, Jacksonville)  
Revamping combustion automation / Level 2  
Pusher type 2 zones, 110t/h

## ROLLING MILL

AIC designs cutting-edge solutions for the control of each different type of Mill (such as blooming, bar & wire rods, merchant bars, rails & sections). AIC's control platform includes rolling mill control (power control, automation & supervision solutions and energy management systems), cooling area and high-performance supplies.

### Some RM references

FERRIERA VALSABBIA (Italy, Odolo)  
180 t/h bar mill

FERALPI SIDERURGICA (Italy, Lonato)  
RM1/RM2 bar mill and wire rod mills up to 130 m/s

SANDVIK (Sweden, Sandviken)  
Blooming mill for superalloys

TATA STEEL (India, Jamshedpur)  
RSB Kocks block

CORUS (United Kingdom, Scunthorpe)  
Rail mill

GERDAU (Canada, Manitoba)  
Reversible + Continuous mill for special sections







## DOWNSTREAM LINES

AIC designed automation solutions for all types of downstream processing lines, the supply includes power control, automation, safety systems and CE marking.

### Some DOWNSTREAM LINES references

ACCIAIERIE VALBRUNA (Italy, Vicenza)  
- Upgrade of the peeling machine control system  
- Automatic loading with manipulator  
- Revamping of the 2B15 drawing line  
- Automatic packing of degreasing line hexagons  
- Modification and upgrade of the dimensional control machine (ESATON 2)  
- Safety and certification of drawing lines

ACCIAIERIE VALBRUNA (Italy, Bolzano)  
- Automatic loading with drawing machine robot  
- Revamping of the drawing machine 2B60  
- New evacuation for drawing bars

COGNE ACCIAI SPECIALI (Italy, Aosta)  
Electrical revamping and supervision of the peeling machine Landgraf

## CRANES & HANDLING

**Cranes** (magnet crane, charge crane, gantry crane) are fully integrated into the operations of a steel mill with autonomous control.

**Handling** for:

- Bundle forming
- Stacker
- Bars counter
- Automatic Marking & Tagging
- Binding and Strapping systems

### Some References

ARVEDI (Italy, Cremona)  
Scrap yard bridge crane

PITTINI (Italy, Verona)  
Kiln charging bridge crane

MEGASA (Portugal, Setúbal)  
Autonomous billet crane

# HARDWARE & SOFTWARE, PLUS **ROLLING KNOWLEDGE**

Solutions cover complete electrical and automation control components in melting, casting, reheating furnaces, long & flat products rolling mills and downstream finishing lines.



## POWER CONTROLS

Manufacturing and supplying AC&DC drive panels to improve power controls using all market drives, such as **Rockwell Automation, ABB, Siemens, Nidec**, based on customer needs/requirements.

AC & DC DRIVES

RENOVATING SOLUTIONS

CABINETS ASSEMBLY

POWER CONTROL CENTER (PCC) AND MOTOR CONTROL CENTER (MCC)

### Some References – DC drives upgrade

- GERDAU (Brazil, Bar Mill)
- ARCELOR MITTAL ACINDAR (Argentina, Bar Mill)
- SIDERURGICA SEVILLANA (Spain, Bar Mill)
- OVAKO (Sweden, Bar Mill)
- FERALPI SIDERURGICA (Italy, Bar & Wire Rod Mill)
- ALPA (France, Bar Mill)
- GERDAU (Canada, Manitoba Steel Mill)

## ELECTRICAL & AUTOMATION

We develop automated & tailored solutions with major PLC platforms - such as **Siemens**, **Rockwell Automation** and **ABB** - for different applications. With SCADA-HMI Level 1, we ensure supervision through integrated architecture software such as **Ignition**, **FactoryTalk**, **Wonderware** and **WinCC**.

## FINISHING AREA

Our extensive selection of automation solutions can enhance your finishing area flow and ensure that crucial phases are reliable: High-speed discharging system, Apron system, Finishing and calibration blocks with individual drives, Laying head, Bar in coil, Quenching systems.



## HIGH PERFORMANCES & AUTOMATION SUPPLIES

The integration of automation, process technology, and mechanical equipment is central to AIC's solutions for long and flat-product rolling mills for guaranteeing reliability and yield optimization, through:

TENSION & LOOP CONTROL

FRONT AND TAIL-END POSITIONING CONTROL

SHEAR CONTROL & CUT OPTIMIZATION

MASTER SPEED REFERENCE

COILER / DECOILER

### Some RACS References

SURYADEV ALLOYS AND POWER LTD (India, Rebar mill)  
Quenching & Tempering systems,  
discharge with high-speed twin channel systems

METALLURGIA MARCORA (Italy, Special steel Bar & Bar-in-coil mill)  
Sliding reversible roughing stands,  
Continuous mill, Cut line and cooling bed,  
Bar-in-coil line, Finishing end area

CMC COMMERCIAL METALS & CO. (USA, Bar & Wire rod mill)  
Reheating furnace, Continuous mill, Wire Rod line up to conveyors,  
Slow & High speed cutting line, Cooling bed up to cold shear and  
finishing area

SIDENOR (Spain, SBQ mill)  
Kocks reducing & sizing block

PROMETAL (Cameroon, Bar/section & Wire rod mill)  
Continuous mill (20 stands), Low speed cut line,  
cooling bed and finishing area,

# PLANT DIGITALIZATION



## MANAGEMENT & SCHEDULING

Real-time data uploads via cloud options, as well as real-time visibility updates of quantity, location, and inventory of material produced, while taking into account plant capacity and materials, line configuration, or the machines present.



## TRACKING SYSTEMS

Furnace, Rolling Mill and Coil Handling tracking guarantees synergy between plant and production management. AIC has developed its own Tracking and Level 2 system, allowing enhanced features such as supervision, data exchange, production reporting & analysis, management of delays and Level 3 systems.

The **4.0 / 5.0 transition** is centered on digital transformation: analyzing and working on daily data in real-time is critical to making production processes more fluid and agile, ensuring quality by freeing up valuable time to devote to other strategic activities, and promoting predictive and effective maintenance through plant equipment connectivity.

## CONTROL AND DATA ACQUISITION

The **supervisory control and data acquisition** is driven by maximizing equipment management, the availability of real-time data, and the design of specialized HMI interfaces. SCADA systems are used in continuous flow production control within the steel industry production environment, turning clients' types of machinery and plants into an under-control instrument.

## NETWORK AND VIRTUALIZATION

**Virtual local area networks** have become crucial for organizations with complex networking systems: to scale their networks, segment them to increase security measures, and decrease network latency.

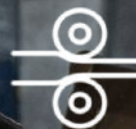
**System virtualization** fits the needs of the process, which remains consistent over time thanks to a physical server that runs and manages multiple virtual servers.



## ALARMS AND EVENTS

When a relevant aspect of the operation is shown it is immediately stored as an alarm or event. All the information like the behaviour of variables monitored by the system as real-time or stored information.

All multilevel alarms and events are stored on the HMI server and can be viewed by operators at the HMI stations by filtering only the information required.



## RECIPES & ROLL SHOP

A SQL-based recipe system is integrated into the HMI. It is a web-based application that can be included on the HMI or can be opened from any computer connected to the same network.

An active roll shop management system saves resources and supports delivery and quality by coordinating internal workshop activities as well as external suppliers and automating data collection from PLCs.

# ROBOTICS & STAND-ALONE EQUIPMENTS

FAST & EASY-TO-USE



ACCESSIBLE & FLEXIBLE



FULL INTEGRATION



## Leading with innovation

AIC Robotics department concepts automatic & versatile tailor-made solutions to ensure an advanced process in the finishing area of the processing line, improving repetitive and often-harsh conditions customers operate in. Robotic applications designed by AIC are able to tag, mark, label and trace semi-finished or finished metal long and flat products.

In response to customers' increasing integration of their plants, AIC has also specialized in solutions **downstream of rolling mills**. These solutions automate many manual activities in the process, with the option of integrating robotic applications into the site.



## PLANT IMPROVEMENTS

- Safety and productivity of the plant and processes
- Reproducible quality with production process based on AI
- Simplifier routine operation and greater working conditions
- Full access to process control, automating complex activities
- Fully materials tracking and readability
- Greater plant availability and productivity
- Long-term cost savings and a high return on investment

30 +

robotic stations installed

- Bar/Rebar/Coil tagging
- Hot & Cold labelling (bundles, beams, angle steels...)
- Sheet metal labelling
- Continuous casting billet marking
- Destrapping robots
- Wire drawing guide robots

1.2

sec scanning time

8

sec full tagging cycle time

## DIGITIZING THE STEEL PLANT

A progression towards today's industry



SMART SENSORS



DIGITAL TWINS



AUTOMATIC FUNCTIONS



AI & MACHINE LEARNING



PREDICTIVE MAINTENANCE

# SPECIAL MACHINES

Openness with innovation

AIC designs, engineers and manufactures **special turn-key machines**, implementing the best mechanical and electronic cutting-edge technologies. We ensure a long experience in the production and assembly of tying & strapping machines for bundles, packs and coils, automatic trimming & sampling machines for wire rod lines, and tailored-made machines.

## TRIMBOT

A one-of-a-kind all-encompassing **patented** station able to perform automatic trimming and sampling of finished coiled products' head and tail ends, with no human intervention. Designed to be installed in any existing mill floor, without excavation or pouring of new foundations.

TrimBot's all-electrical station combines both proprietary mechatronics technology and industrial robotics, including



mechanical components



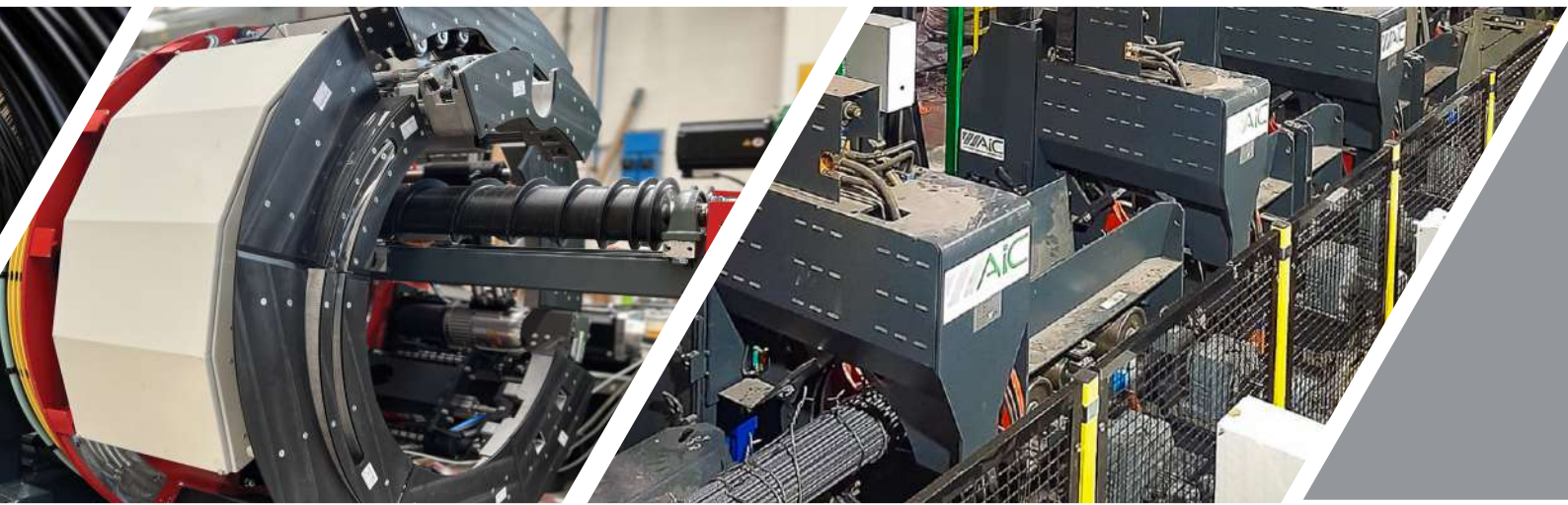
3D vision systems



robotic arm



high level of automation & AI



## TYING MACHINES

**6.8** sec  
for a complete double turn tying

The **most reliable and fastest tying cycle on the market**, doing **tight and loose** ties with **single** and **double turns**.

Tying machines are designed, produced and assembled by our Italian unit, ATS Mechatronics in Udine (Italy). It allows for the automatic binding of **bundles, sub-bundles, and packs**, which are then positioned downstream of the product formation area before being transferred to the discharging area for tagging and final storage.

### MAIN BENEFITS



Smooth integration into rolling mill layouts under any operating conditions



Latest technologies with automatic configuration and operation



Reduced downtime, accelerated in-site job and defeated adverse effects from tying steel manually

## SERVICES

# STEEL PLANTS **LIFECYCLE SERVICES**

We expand because of partnerships; by putting a lot of emphasis on long-term client relationships, we are able to provide a variety of customized support activities.

The target is to decrease downtime, increase productivity, and ensure the long-term value of plants and machinery.

### **HARDWARE SERVICE**

Behind the hardware type service is a dedicated team capable of responding quickly to requests for assistance on various types of hardware, PLC, and drives.

- repair work
- fine-tuning of systems
- checks in production

### **SOFTWARE SERVICE**

Engineering and consultancy in the PLC & HMI section, as well as integration for migrating from old systems to newer, upgrades, modifications to existing plants, and new implementations.

We support our customers in routine maintenance in order to prevent unplanned shutdowns.

### **PROCESS SUPPORT**

We push the customer in continuous improvement and problem-solving by giving the process knowledge gained in the commissioning phase. This results in improved yield management and streamlining of the workflow.

We can help customers optimise their metallurgical processes, and make maintenance more efficient.







# PORTFOLIO



## TECHNICAL ASSISTANCE

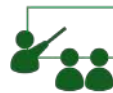
The Team Service provides a higher and all-around level, fast and reliable service through dependable all-inclusive technical support, modernization procedures, tried-and-true maintenance systems.



## CONSULTING

Together with the customer, the process begins with an evaluation of the following factors:

- the current processes
- the state of the plants
- the equipment performance
- feasibility and cost studies
- suggestions for enhancements
- execution and result assessments



## TRAINING & COURSES

We cover many competence areas: drives, PLC & HMI, networking, diagnostics and troubleshooting (IBA).

We can provide tailored training to the customer, at the customer site, on detailed topics in order to provide all the specific skills based on the customer's real hardware and software setup.



## REMOTE ASSISTANCE

We provide remote support agreements by remote connection, assuring maximum flexibility, quick response times and emergency support services.

Additional agreements are available for electrical drawings maintenance, augmented reality support, and periodical on-site service.

## AIC GROUP'S SAFETY PLEDGE

### HIGH FLEXIBILITY AND OPTION OF CUSTOMIZATION

Consulting services, hardware (mechanical and electrical), and documentation are all included in **one bundle**.

Each plant can be ideally partitioned into macro-areas, each relating to a homogeneous phase of the production line, and managed by a **specific type of safe access, safety command stations and proper devices**. A possible breakdown in a single area activates specific protection tools but does not halt production or working activities in other areas.

### CONSULTANCY AND CE MARKING

from risk assessment and electric control equipment to documentation according to the Machine Directive.

It is possible to find and implement the most appropriate solutions thanks to a new way of designing; full integration into the main automation plant is key factor to win the challenge of safety conditions without risks and losses of efficiency.

### FENCES & GATES CONTROL

KERN Schutzsysteme unit ensures takes care of the implementation of the requirements for plant safety, from risk assessment and electric control equipment to documentation according to the Machine Directive. We adapt hand-in-hand the safety measures to the production, not vice versa. In addition, AIC develop industrial container for the security of the robotic area.

### ACCESS & SMART CONTROL

- Safety box with alarms and the incorporation of specific trapped-coded keys
- CCTV systems and integration between SCADA screens and real-time images of the plant
- Camera recording with the play-back option, also on wireless technology and fibre optic
- Access systems and locks with integrated emergency stop with push buttons.

OUR NUMBERS



MORE THAN  
**250**  
CUSTOMERS  
IN 65 COUNTRIES

MORE THAN  
**2 000**  
APPLICATIONS  
CARRIED OUT

WE RELY ON  
**6 700 m<sup>2</sup>**  
PANELS AND  
MECHANICAL SHOPS

MORE THAN  
**165**  
EMPLOYEES  
WITH 1800 YEARS/MAN  
OF EXPERIENCE

MORE THAN  
**200**  
SAFETY SYSTEMS  
INSTALLED

**99%**  
CUSTOMER ELECTRICAL  
PLANT EFFICIENCY

