

2021

# MAGAZINE

Advanced Automation & Mechatronic Solutions

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# EDITORIAL



**Marco Capitanio**  
Managing Director of AIC Group

## Dear Friends,

We are happy to be back with this new issue of AIC Magazine.

Especially for the region of our headquarters, Lombardy, this year has been challenging due to Covid-19. However, as the territory and the company, we reacted immediately and quickly adapted the situation to a new normal thanks to our team and stakeholders.

In this period, we supported all our customers remotely and in person, completed the supply without disruptions to our customers and commissioned several plants around the world. Things are still difficult, but we have not stopped and keep moving forward.

In 2020, an internal unit dedicated to robotic applications has been created. Together with the back-to-operations ATS, we are creating the mechatronics division, which combines our know-how in the fields of automation, robotics and mechanics. The results have been already achieved with the installation of complete finishing, packing, tagging and tracking solutions in Feralpi Stahl, Ferriera Valsabbia and Acciaierie di Sicilia. The articles dedicated to those projects are available at [www.aicnet.it](http://www.aicnet.it).

The new partnership with Kern Industrie Automation (KIA), based in Germany and Czech Republic, and the commercial support of Onemet, located in Austria, can offer our competences and expertise to German speaking countries. With user friendly counterparts knowing the process and speaking the local language, we are able to reach the highest level of products and services and products. KIA will become the commercial, engineering and service center for AIC. Meanwhile, Onemet will represent AIC in Germany, Austria, Switzerland and Slovenia.

The AIC units in North America, South America and India are expanding with new qualified technicians to support the local clients as well as the projects all around the world. New customers are joining the AIC family and we are ready to bring them value and win together in today's and tomorrow's challenges.

We hope you will enjoy reading this latest edition and feel free to share your feedback. Your opinion is very important to us.

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# AIC GROUP

## HISTORY

Founded by Mr. Dino Capitanio and his wife Giuseppina in 1975 in Odolo, a small village in the Valle Sabbia valley of the province of Brescia in Northern Italy, AIC was firstly named Elettrotermica snc.

Started as a "one-man company", AIC was serving the growing steel industry in the village with less than 2000 citizens but having 15 steel works within a 5 km radius. In 1992, the company name was changed to Automazioni Industriali Capitanio srl and the AIC solutions landed all around the world.

Today, the company is still run by the Capitanio's family and Mr. Dino is the president with a leading global team in the metals industry with a direct presence in Italy, India, United States of America & Brazil. AIC Group has more than 1000 applications executed in 50 countries.

## MISSION

Design, manufacture and support technological and innovative solutions for the metals industry respecting people and the planet.

## VISION

Contribute to the sustainable wellbeing of the people in the territories where they live.

## VALUES

We keep a deep focus on:

- **Integrity, honesty and trustability:** we believe there is only one way to live.
- **Long lasting relationship and personal friendship:** our customers are the reason of our working life.
- **Environmental footprint mitigation:** we have only one planet. Remember this every single moment of your day.
- **Responsibility and reliability:** we were, we are & we will always be here for you.
- **Quickness and efficiency:** we love the challenges.
- **Team working:** no team no fun in the bad and good times.
- **Passion:** is there any other reason to do what we do?



Mr. Dino Capitanio

## KEY NUMBERS

MORE THAN  
**70** EMPLOYEES

AVERAGE AGE  
**<35 YEARS** AND  
A HIGH LEVEL OF  
SCALARIZATION

MORE THAN **1000**  
APPLICATIONS

PROJECTS IN  
MORE THAN  
**50** COUNTRIES

AIC TURNOVER  
IN 2019: **€18M**

MORE THAN **10%**  
ANNUAL GROWTH  
OVER THE PAST  
5 YEARS



## AWARDS & CERTIFICATIONS



- Siemens Solution Partner
- Solution Partner Award 2019 "The Best Growth Performance 2019"



Rockwell Automation Recognized System Integrator for Power control and Automation systems



ISO 9001:2015 since 2002



ISNetwork member



ETL Listed since 2011



ELITE member



BAQ 2018 - 2019 - 2020



BITS 2020

## CSR - CORPORATE SOCIAL RESPONSIBILITY

Since the beginning, the culture of AIC is based on human relationships. Following this path, AIC actively supports the local healthcare, education and environmental protection organizations. The wellbeing of our stakeholders is a priority and the care of our teammates is on top of it.

The support of schools at all levels is part of normal activities done by AIC management and technical departments, such as: lessons and lectures at professional schools, high schools and universities, internships & training programs.

To drive positive change for people and local communities, AIC is constantly collaborating with the hospitals and charity organizations. This is part of our human duty and a good way to return some of what we receive from our territories.

Unprofessional sport team collaboration is also a great tradition for AIC. We love to see kids having many opportunities to play and enjoy their youth.

Our activity is focused on improving the quality of working environment, reducing risks and heavy work for operators, as well as reducing the impact on the planet by saving energy, cleaning air and recycling water and materials. The metals industry can be a full circular economy and AIC is actively working in this direction.

## NEWS

### **Automazioni Industriali Capitanio acquires the assets of ATS Applicazioni Tecnologica Siderurgiche S.p.A.**

**July 26, 2019 - AIC Automazioni Industriali Capitanio acquired ATS, Applicazioni Tecnologiche Siderurgiche S.p.A, a proved producer of machines for long product hot rolling mills, located in Trasaghis (UD), Italy. The acquired assets include know-how, designs, brands, buildings, equipment and warehouses in addition to other strategic technical possessions.**

Applicazioni Tecnologiche Siderurgiche S.p.A. has been operating since 1993. Over the years, the company has established itself as a service company for steel and rolled product manufactures around the world due to the production of machines with personalized settings based on individual customer needs. In particular, tying machines for bundles and packages have reached a very high level of customer satisfaction and become one of the leading products in the market.

After the bankruptcy procedure initiated by ATS s.p.a. in October 2018 caused by financial difficulties, AIC intends to resume the operational activity through a more dynamic and flexible structure.

The new company provides an opportunity to AIC to meet the needs of customers and to offer tying machines through the existing network which has a direct presence in the USA, Brazil and India and representatives in many other countries all over the world.

**ATS Mechatronics s.r.l.** is the new name of the entity, which will have its registered office in Via Chiavola, 10 - Zona Industriale - 33010 Trasaghis (UD), Italy.

- Tel: +39 (0365) 826333
- Website: [www.ats.ud.it](http://www.ats.ud.it)
- Email: [ats@ats.ud.it](mailto:ats@ats.ud.it)



## ONEMET will represent AIC in Germany, Switzerland, Austria and Slovenia

**Automazioni Industriali Capitanio Srl is honored to announce a new collaboration with ONEMET Technology Trading GmbH to expand horizons and grow the network. Following the same goals and passion, ONEMET will represent AIC in Germany, Austria, Switzerland and Slovenia.**

ONEMET is an international trading agency, specialized in technologies, equipment and services for the steel and non-ferrous metals industry, as well as for the metals processing industry.

Together, we will provide the best customer experience & unique solutions for mutual growth and development! Mr. Gerhard Richter will be responsible for the agreement between AIC and ONEMET.

Any questions and business inquiries can be addressed to Mr. Gerhard Richter or to the official contacts of ONEMET, Automazioni Industriali Capitanio (AIC) and ATS Mechatronics.

### ONEMET Technology Trading GmbH

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### Mr. Gerhard Richter

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Mr. Marco Capitanio and Mr. Gerhard Richter

## AIC (Italy) and KIA - KERN Industrie Automation (Germany) announce new partnership

**We are excited to announce a new partnership with KERN Industrie Automation (KIA). This opportunity will help bring AIC and KIA in a position to expand their global presence, attract new customers and increase the level of services.**

Based in Germany and Czech Republic, KIA is a one-stop solution when it comes to instrumentation and control technology in plant engineering for the steel and iron industry and in process engineering in metallurgy. Certified to develop, design, manufacture and sale electrical equipment, automation technology, power transmission and safety fence systems, KIA has the extensive range of products and services that covers all requirements in the cold and warm phases.

Sharing experience and common goals, both companies intend to create joint workshops, engineering and service centers to offer advanced solutions and support.

Any questions and business inquiries can be addressed to the official contacts of KERN Industrie Automation (KIA), Automazioni Industriali Capitanio (AIC) and ATS Mechatronics.



### KERN Industrie Automation (KIA) GmbH & Co.KG

- Address: Bergstraße 63a, 56203 Höhr-Grenzhausen, Germany
- Tel: +49 26 24 / 94 71 2-0
- Email: info@K-I-A.de
- Website: <https://www.k-i-a.de/>

## NEWS

### New robotic tagging application project for the wire rod rolling mill in Italy

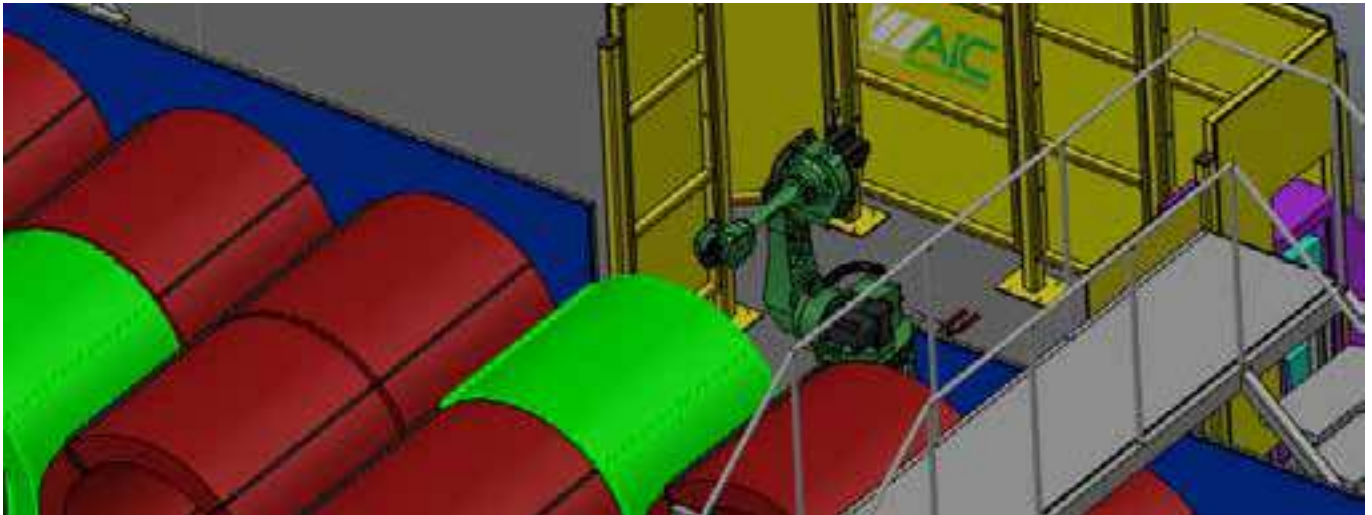
**Alfa Acciai awarded the contract to Automazioni Industriali Capitanio to supply and install two robotic tagging applications for the wire rod rolling mill in Brescia (BS), Italy. The solution aims to increase identification and traceability of materials, simplify routine operations, improve working conditions & safety level of operators.**

The scope of supply:

- Two robotic tagging islands for tagging: Anthropomorphous robots with control & portable units, Dual camera 3D vision sensors, Tag printers;
- Software development;
- Safety and protection systems;
- Engineering and electrical drawings;
- Packing and shipping.

AIC will also be involved in site installation and commissioning phases, integration with the existing automation systems, start up support and the remote assistance.

After testing the equipment in the Autumn 2020, the new robotic tagging application is scheduled to be commissioned at the end of 2020 . ■



### Major rebar and coil manufacturer in the USA contracted AIC North America to perform the automation upgrade of its complete bar and wire rod mill

**The proposal of AIC aims to supply the new automation & HMI control systems for the rolling mill, starting from the first stand in the mill and going through the bar takeout of the cooling bed until the cold shear included and, for the wire rod line, the rod outlet up to cooling conveyors included.**

The new system will also include all auxiliary systems such as lubrication, hydraulics, water treatment plant, etc. All existing PLC platforms present at site will be replaced and be integrated into a new Allen-Bradley ControlLogix GuardLogix L8xES control system.

All new electrical equipment included in the scope of supply will be engineered and manufactured according UL standards and markings and will be designed according to the new rules & standards adopted by AIC and the customer for arc-flash detection & lock-out procedures.

All the new supplied equipment will be SIL3. ■





## Feralpi Stahl contracts AIC and ATS Mechatronics to supply four Tying Machines TMB 400 and the tying area safety system in Germany

**Following the contract with ATS Mechatronics for the supply of four tying machines TMB 400, Feralpi ESF Germany awarded AIC a new contract for the safety system of the final tying area of round bundles at the bar rolling mill. ATS Mechatronics completed the internal test and delivery of four tying machines TMB 400.**

Besides mechanical equipment (the tying machines and a roller table conveyor), ATS supplies electrical and automation system, hydraulic circuit, auxiliary equipment. In accordance with the schedule, the internal test was successfully completed at the ATS Mechatronics's workshop. ATS Tying Machines have been designed in order to have the following advantages:

- the fastest tying cycle available on the market: 6.8 seconds for a complete double turn tying;
- smooth integration in rolling mill layouts due to optimized dimensions and complete supply of mechanical, electrical & automation systems;
- heavy and sturdy machine minimize maintenance cost and reduce downtimes and production loss.

ATS Tying Machines can be designed with tailor-made characteristics to improve the performance within the rolling mill layouts. The scope of supply for the tying area safety system includes:

- PLC master safety cabinet;
- Safety boxes & new local control stations for tying machines and the hydraulic unit;
- Supply and installation of KERN Schutzsysteme protective fences. KERN Schutzsysteme is a brand of KERN Industrie Automation, which is a partner of AIC in Germany as a system integrator and manufacturer of special fences for Steel Industry;
- Engineering & electrical drawings;
- Software development;
- Support services and assistance.

AIC will be also involved in installation supervision and commissioning phases. ■



## New rolling mill project in Chennai, India

**Suryadev Alloys and Power Pvt Ltd has contracted AIC India to supply drives and automation system for its upcoming 350,000 TPA rolling mill in Chennai, India.**

AIC India proposed a state-of-the-art solution for drives and automation systems with advanced features for mill and shear controls focused on reducing power consumption, wear and tear of equipment, improved tolerance for rolled bars. Furthermore, the accurate shear control helps to optimize yield and increased availability of mill due to reduced cobbles.

The scope of projects includes hardware and software

engineering, the installation of the powerful DC drives from ABB in accordance with the requirements of rolling mill applications backed by the latest generation PLC controllers from Siemens and integrated under the TIA portal providing users advanced mill control features. AIC India will also be involved in site installation and commissioning phases, start up support and the remote assistance. ■

# PROJECTS

## The second installation of the robotic tagging application at Ferriera Valsabbia, Italy

The second robotic tagging application has been installed by AIC at Ferriera Valsabbia in Odolo, Italy. The new automated tagging process at the head of finished product bundles and the improved data tracking system increase the efficiency of the process, reduce downtimes and optimize the resources.

The installation of the first robotic tagging island confirmed the performance of the machine under the existing production conditions. Satisfied with the results achieved, Ferriera Valsabbia awarded AIC a new contract to install the second robotic tagging application. Due to the higher flexibility of the robot, the tagging process is carried out in several production directions.

The installed robotic tagging island includes:

- Anthropomorphic robot with control and portable units;
- End-Effector composed of pneumatic pliers (to pick up the nail) and the welder machine (to weld the nail to the bundle);
- Backup printer bench equipped with the pneumatic clamps;
- Dual camera 3D vision sensor & two QR code readers;
- Automatic stud feeding system.



### The key features of the robotic applications:

- Vision system capable of acquiring a 3D image of the bundle; and providing the result in just 1.5 seconds.
- Smooth integration within the existing system using the PLC

The robotic tagging application increases the safety level of operators who were previously in a dangerous position next to the crane. ■



## Rodacciai's rolling mill has been successfully modernized by AIC in Sirone (LC), Italy

**AIC completed the rolling mill modernization at Rodacciai in Sirone (LC), Italy. The project covered the upgrade of the control system by replacing the obsolete PLC Siemens S5, the VME controller, installing the S7-1500 PLC with a state-of-the-art rolling mill automation control system and developing the Level 1, Level 2 tracking and recipe software development.**

The scope of the project included:

- Integration of the AIC Level 1 & 2 systems into the automation;
- Automation of the control system of the heat change;
- Simplification of the troubleshooting;
- Replacement of obsolete electronic components for the control of rolling mill regulation, such as loop and minimum tension control;
- Integration of the drives into the network.

AIC upgraded the rolling mill for special steel that included the following elements:

- 26 stands with DC motors & drives, speed reference and feedback managed by Drive Nidec SPDM in profibus network;
- Two passes Kocks block;
- Five passes Kocks block with AC drives;
- Wire rod line, Garret line and the cooling bed control.

Representing more than 40 years of experience in the world of rolling mills for long products, the RACS system of AIC based on PLC Siemens S7-1500 was implemented to improve efficiency of the plant. HMI system, tracking and recipes management systems are based on Ignition platform Ver 7.9 with 2 PC clients + 2 operator panels for fast operations from the main desk. The installation of virtual machines on the existing server and integration of Level 2 screens to HMI were also part of the commissioning. New operator interface with new generation SCADA screens designed to detect anomalies

and/or warnings more efficiently while keeping system parameters in the background. As a result, the rolling mill modernization led to:

- Improvements during the change of the heat thanks to the new tracking system;
- Improvements for maintenance and troubleshooting. All remote I/Os installed into the stands control panels have been dismantled, as well as the old VME controller;
- Improvement in the mill settings for stands acceleration due to the implementation of new adjustment functions.

The production has started at full capacity since day one without any hot tests or delay. ■



# PROJECTS

## Rolling Mill Yield Improvement Project at African Foundries in Nigeria

In order to maximize profit and reduce costs, the best approach to yield improvement is to identify areas of yield loss that can be effectively regained within the limit of available resources. The optimization of the rolling mill at African Foundries Ltd. in Nigeria was performed using AIC technology.

The main goal of the project was to increase the productivity (i.e. maximizing the non-defective product) while increasing the profit margin of the plant & optimizing productivity with a great improvement of efficacy, efficiency & rolling performances without any investment in new mechanical equipment.

The delivery area (cooling bed entry system) & rolling mill shears were defined as the most critical zones. Thus, new command logic for the delivery area was designed by AIC. Cooling bed is now running on torque mode that allows the load on the pinch rollers to be balanced. PLC of line A & line B has now been synchronized with the mill. Moreover, all rolling mill shears have been synchronized with the line speed. This step also included new auxiliary service control logic, as well as high-speed and cut apron lines automation with cut length optimization.

The AIC controller gives the system the possibility to optimize the position control thus reducing the load necessary by the shears for cutting (fig. 1 & 2). This will reduce the wear and tear on both the mechanical

equipment, the electrical drives and motor system increasing the total life cycle of the equipment.

To sum up, two different areas of modifications can be distinguished:

1. Hardware Modification
  - Rolling Mill Shears: The normal controller has been changed to drive-based SIMOTION controller;
  - Twin Channels: the normal controller have been changed to drive-based SIMOTION controller;
  - Cooling Bed: it has been changed from PED-based to tracking-based;
  - The drive-based SIMOTION controller integrates motion control, technology, and PLC functions directly into the drive.
2. Software Modification
  - The existing software upgrades;
  - SIMOTION SCOUT software was also added to the existing one;
  - SIMOTION SCOUT combines motion control tasks, PLC tasks, technology functions, and drive configuration in a single system. ■

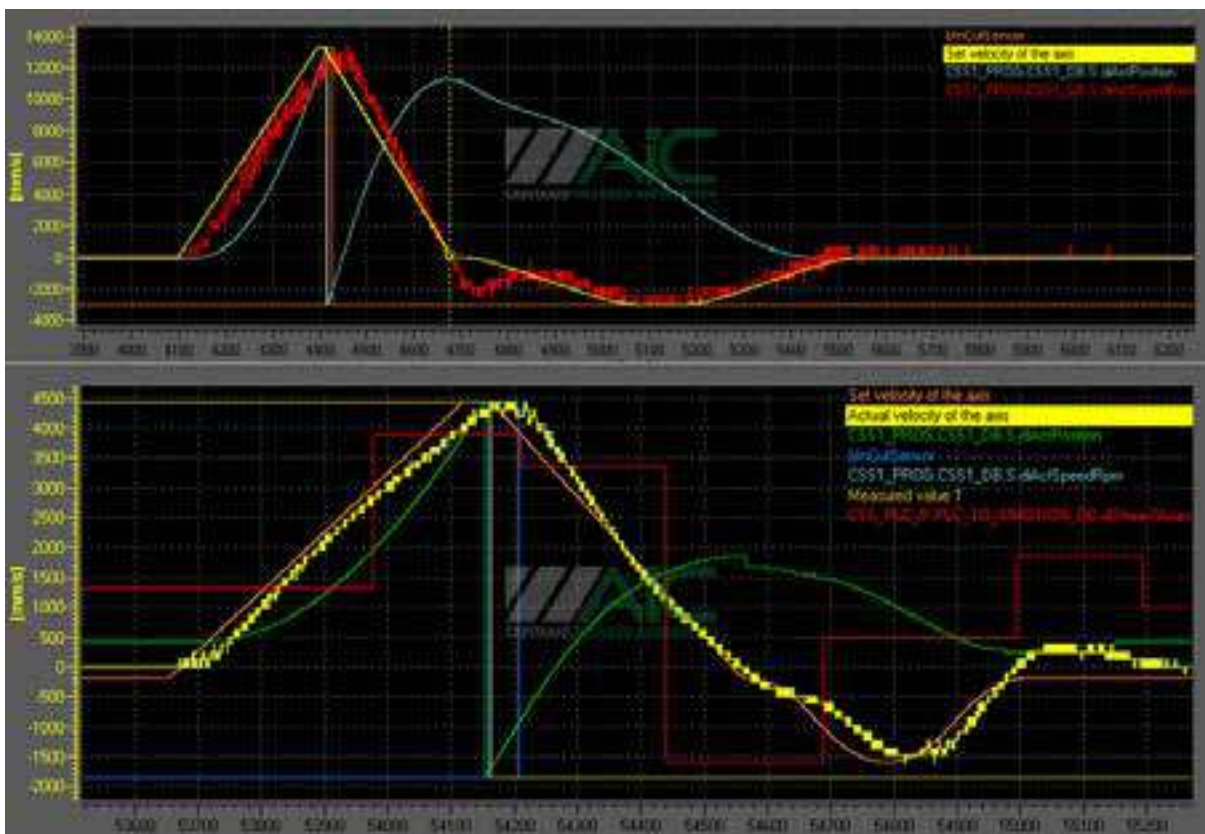


Fig. 1 – Optimized motion control performance

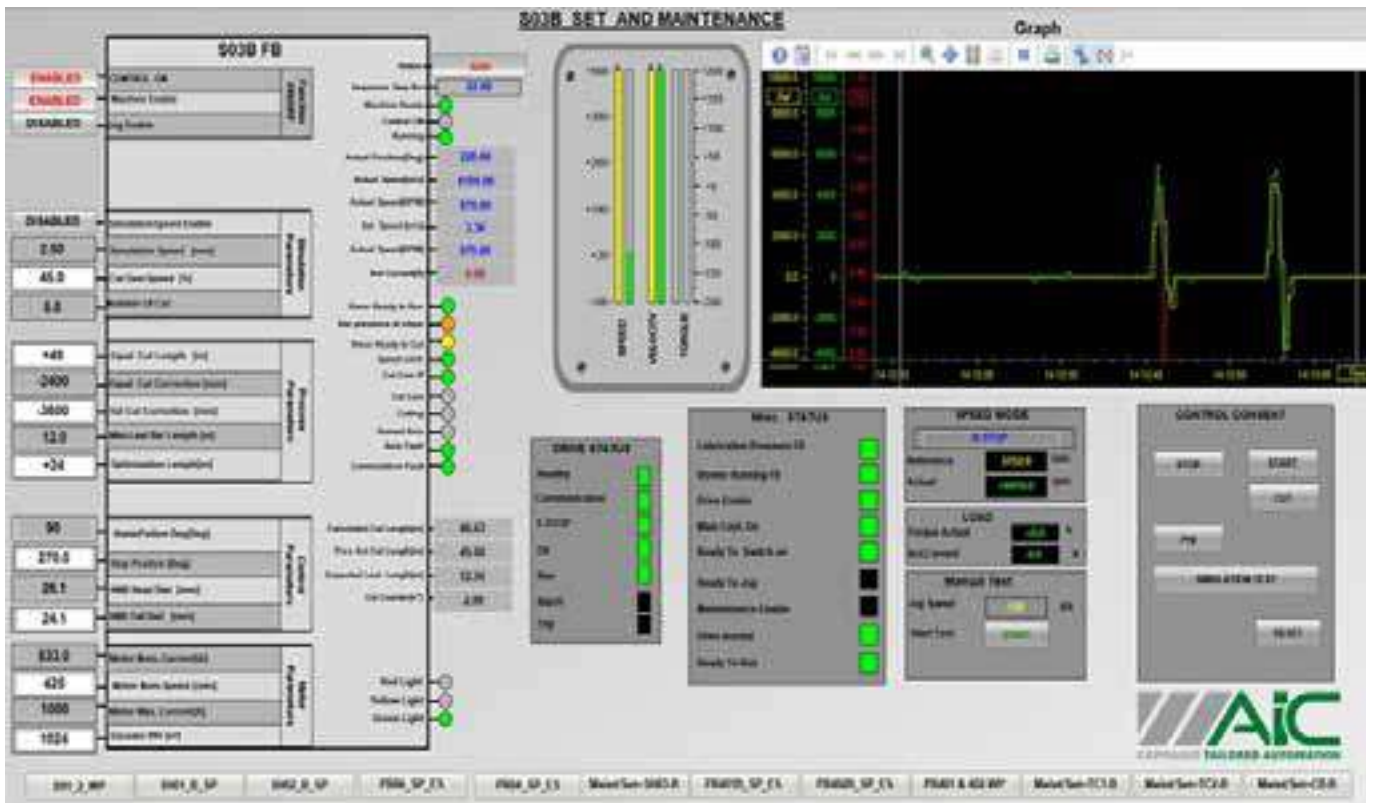


Fig. 2 – Equipment maintenance screens (adapted interface for operators)

The advantages of AIC technology are:

1. High cutting accuracy & repeatability as well as cutting optimization strategy: the system automatically calculates an optimal cutting strategy to minimize material scrapping. This system can also take advantage of a pre-optimization shear to scrap the material in the middle of the rolling process;
2. Cut cycle simulation: the system allows the operator to simulate the presence of a billet, with a prearranged length, in transit in the rolling mill at the selected line speed. Through the simulation, it is possible to verify the correct operation of every machine involved in the cutting cycle & the unloading;
3. Complete process optimization, including shear control, cooling bed, finishing and delivery area optimization for aprons, high-speed twin channel;
4. Performance of Shear 1 has been improved in both lines, since cut-to-cut variation of length has been minimized. Therefore, the monthly percentage of crops has been reduced;
5. Cobble due to twin channels in cooling bed area has been reduced since we are running on position control now;
6. Variation in length in cooling bed area has been minimized, hence monthly percentage of off-cut/ short-length has been reduced.

After successful commissioning, there was improvement in yield of the mill, stability in a cooling bed area, cut to cut length accuracy in crop shear and diving shear, section wise recipe for every section can be saved in HMI and all mill's HMIs were integrated in a single HMI. ■

As mentioned by the customer:

“AIC has excellently completed its jobs.”

# PROJECTS

## AIC upgrades DC drives at El Garhy Steel in Egypt

Following projects in 2010 and 2011, based on the partnership since the 90s, El Garhy Steel contracted AIC to upgrade DC drives for the rolling mill in Egypt. Successful collaboration in the past contributed not only to the mutual growth, but also the development of personal relationships based on trust, dedication and support. The equipment was manufactured and shipped to the customer according to the project schedule.

The main purpose of the upgrade was to replace obsolete equipment with the new DC Drives to improve the performance of the rolling mill. The rolling mill control system and all the drives have already been engineered and manufactured by AIC as the panels in the past.

The scope of the supply included:

- 6 new DC drive cabinets suited to drive mill stands;
- Upgrade of HMI system through new SCADA screens dedicated to the supervision of the status

- of new drives / stands and energy consumptions;
- Software development and upgrade of PLC Software. Programming for energy consumptions on working shifts will be implemented in existing logic for all stand drives;
- Packing and shipping.

AIC was also involved in site installation and commissioning phases, start up support and the remote assistance. The full project was completed in September 2020. ■



## Modernization of the long product rolling mill at Acciaierie Venete in Odolo, Italy

**After 15 years of collaboration & renovation projects carried out at the plants in Dolcè (VR), Mura (BS), Sarezzo (BS) and Odolo (BS), formerly owned by Leali Steel and recently acquired by Acciaierie Venete, the contract with AIC aimed to update the state-of-the-art of the automation system for long product rolling mill.**

The bar mill was established in the second half of the 1990s. The main activity included the production of merchant bars: flat, square, round. After the period of financial difficulties, the rolling mill was renovated and returned to full production thanks to the intervention of Acciaierie Venete. AIC covered the entire supply of the basic and detailed engineering, the replacement of the existing equipment, Level 1 and 2 software development, cold tests, hot tests and production assistance.

AIC installed the Rolling mill Automation & Control System (RACS) to improve the efficiency of the plant and the reliability of the equipment, reduce downtime and increase the efficiency of data analysis and problem-solving systems. The production performance was increased thanks to algorithm optimization, tension control, continuity checks, greater configuration flexibility of operations and the increased speed of the finish line.

The scope of supply aimed to completely renovate the rolling mill part from the furnace exit to the cooling bed and the auxiliary parts. It included:

- Modification to the drives of the stands and shears for the interface via profibus of the converters with the new automation dismantling the existing remote-slave system;
- New master PLC for the cascade control, loops and tension to replace a microprocessor system on the VME bus;
- New PLC with axis control to control three start/stop shears for head, tail, cropping, dividing cutting and the mathematical models for optimization and pre-optimization cutting to replace a dedicated card system;
- New Rockwell L82E and L81E PLCs cabinets for services, fluids, change of stands and auxiliaries control to replace an obsolete Siemens S5 PLC;
- New main pulpit with two touch control panels that allow multiple clients control the system;
- Predisposition for the access management security system;
- New HMI system in a client/server configuration with the virtualized architecture;
- Management of recipes and the material tracking with the database management system for detailed tracking of historical production data;
- Interface with the existing systems of the reheating furnace and the packing area based on PLC S5.

The modernization was completed within the previously defined deadlines. The production started at full capacity since day one. ■



# PROJECTS

## Successful commissioning of the rolling mill at CHS Chicago Heights Steel, USA

Chicago Heights Steel contracted Automazioni Industriali Capitanio to upgrade its rolling mill with electrical and automation (E&A) supply in Chicago Heights (IL, USA) that allows the plant to improve the diagnostics and the flexibility of the automation system, to reduce the time to identify problems and their solutions, to decrease unscheduled downtime and maintenance costs.

### Overview of the project

The scope of supply includes new drives, automation & HMI control system for the rolling mill, starting rougher group and going through the bars takeout on the cooling beds.

As a recognized Allen Bradley solution provider, AIC RACS (Rolling mill Automation & Control System) solution is based on ControlLogix L8x CPUs and Rockwell Software FTViewSe HMI. The platform has been installed by AIC in 50+ plants around the world and achieved very high results, as well as in the control of shears and its positioning, The IBA system will help the maintenance technicians in a more efficient troubleshooting, the operators to understand better the process and improve

the performances of the plant. The new PLC will be available for future expansions of the system. Moreover, the new platform will allow CHS to implement a safety system and lock out procedures reducing downtime during operational activities.

To achieve all objectives, the project was divided into several phases.

### Phase 1: Successful commissioning of the DC Bus drives supply panels in Chicago Heights (IL, USA)

In January 2020, AIC completed the commissioning of the first phase of the DC Bus drives supply panels at CHS Chicago Heights Steel in Chicago (IL), USA, thanks to the coordinated work of AIC & Chicago Heights Steel





# PROJECTS

teams. The obsolete equipment previously installed at site that lately created many problems was replaced. The new equipment was integrated in the existing AC450 PLC Logic and interfaced with the existing automation.

The installation started on January 2 and the production was back to full operations on January 6.

The customer has mentioned that: "We are very happy with the service provided so far by AIC and look forward to completing the next phase of the project" and "We are very happy so far and are confident that the next phase will go just as smooth".

### Phase 2: Remote Final Acceptance Test and commissioning.

In June 2020, AIC passed the remote Final Acceptance Test for the next stage of the rolling mill upgrade at CHS Chicago Heights Steel. The supervision and commissioning phases took place in October 2020 in accordance with the project schedule.

Particularly, the scope of supply included:

- New main and auxiliary drives;
- Automation & Control desks;
- HMI control system based on Stratus Server and ThinManager;
- Safety system, Sensors & Spare parts;
- Engineering;
- Remote support services after sales & Certification;
- Packing and shipping.

The reduction of the maintenance cost will be reached by replacing obsolete components and spare parts. All new electrical equipment included in the scope of supply are engineered and manufactured according UL standards and markings. All the new supplied equipment will be SIL3. From the beginning of the project to the end, AIC and CHS Chicago Heights Steel worked closely to develop the best possible solution and ensure a smooth system startup. ■



I am very happy we decided to work with AIC. It was the best decision we made for this project. We look forward to continue to do business with you."

**Mr. David Zapata**

General Supervisor of Engineering and Maintenance at CHS Chicago Heights Steel



# PROJECTS

## Power control and automation of new shears at Siderperu in Nuevo Chimbote, Peru

After several projects performed in the last five years, Siderperu awarded AIC South America a new project for its rolling mill in Nuevo Chimbote, Peru. Following the project schedule, AIC South America successfully executed the power control and automation of the new shears.

The project included the commissioning of the direct driven flying shears, supplied by a third-part mechanical manufacturer, for cropping the bar heads and tails, as well the material scrapping. AIC scope of supply:

- Electrical panel with a Siemens Simotion automation, Siemens SINAMICS DCM electronics and the NIDEC power module;
- ANSALDO 426kW direct current motor;
- Automation application running on Siemens SIMOTION;

AIC's know-how and high-performance motion controls were the key factors for the high performance of the optimized shears, providing the following benefits:

- Reduce mechanical stress and wear;
- Reduce operating noise;
- Reduce electrical stress, both in the converter and in the motor;
- Reduce energy requirements;
- Allow an economical selection of motors and converters.

The speed reference in the installed application is sent to the drive via Profibus but can be sent via analog discrete signals if another drive brand is used.

### Commissioning

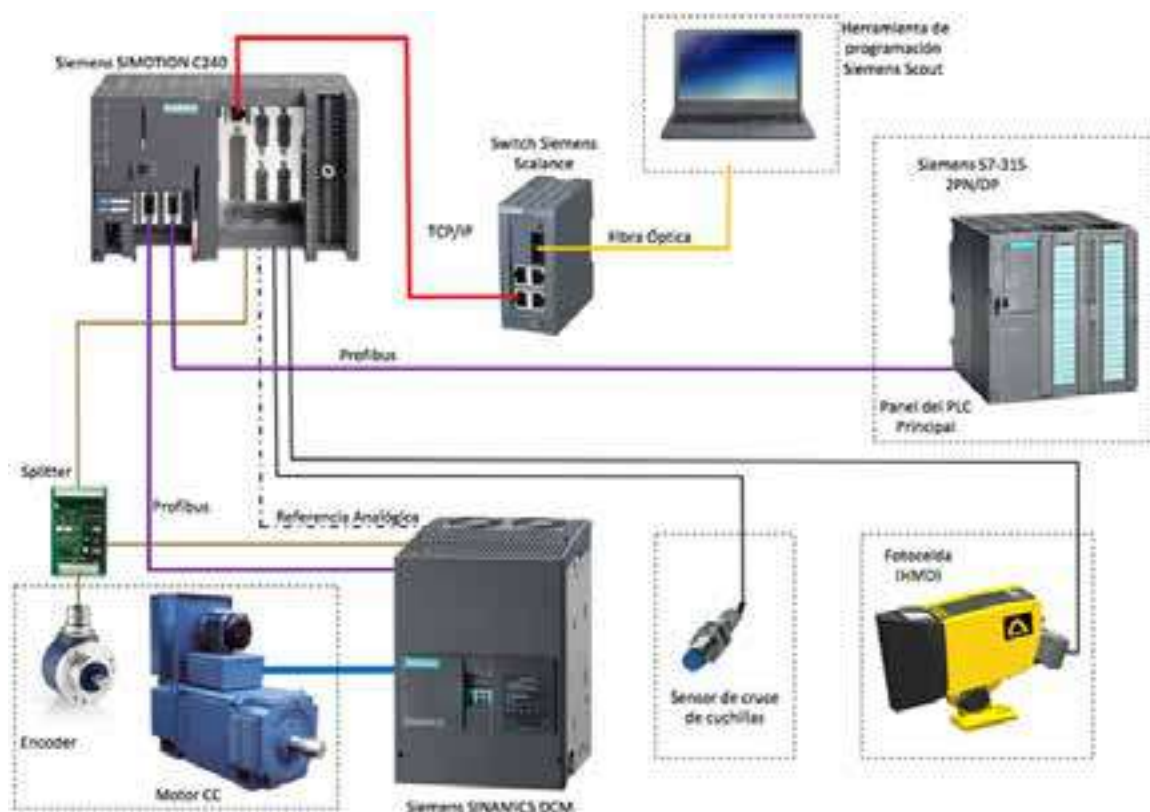
The commissioning was successfully executed according to the plan during the period between December 11th to December 20th of 2019.

The pictures below show the variation of the head and tail crops during the first tests. ■



Head crop samples

Tail crop samples



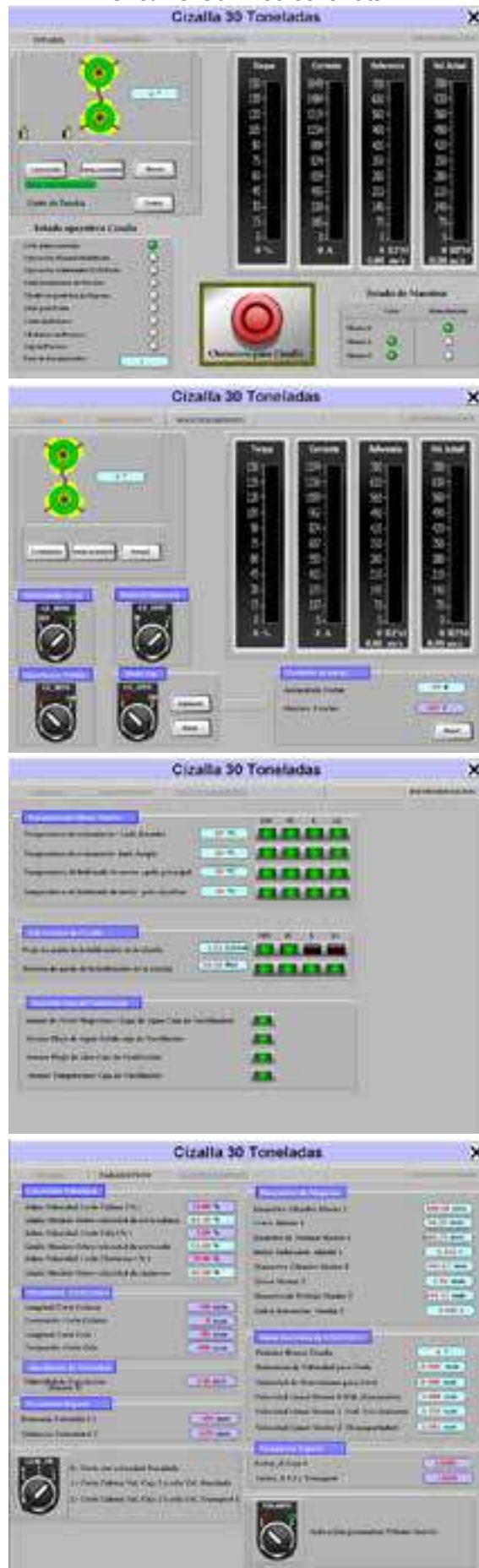
Control system overview

# PROJECTS

Tail crop sequence



Shear CZ30TN screenshots



Shear control stand-alone panel



- 1. Siemens SIMOTION
- 2. NIDEC power module
- 3. Siemens SINAMICS DCM

## PROJECTS

### Dividing shear and cut line automation upgrade in Baku, Azerbaijan

**AIC completed the upgrade of dividing shear and cut line automation at “Baki Inshaat Senaye” OJSC in Baku, Azerbaijan. This project included the new electric & automation control system for the cooling bed entry line. This is another significant step for AIC towards the development of international relations.**

The scope of supply:

- Motor & Drive Nidec ASI for pinch roll and dividing flying shear;
- Motor & Drive Nidec ASI for electromagnetic brake Apron;
- PLC control system (Allen Bradley ControlLogix) suited to control the shear and the cutting line;
- Sensors.

AIC team was also involved in site installation and commissioning phases, start-up support and the remote assistance. Despite global restrictions, both teams worked closely to achieve previously established goals. ■



We express our gratitude to the employees of “AIC” for their prompt work. We are grateful to you for putting the equipment into operation. It was a great pleasure for us to work with you and we felt satisfied. We want to work with you in future projects, and we hope that you are also happy with our cooperation.”

**Mr. Logman**

General Director, “Baki Inshaat Senaye” OJSC.



### Remote digitalization of the stand drives at Capitol Steel in the Philippines

**Overcoming the existing global constraints, the AIC team continues to search for flexible solutions to meet the needs of the customers around the world. As a result, Capitol Steel contracted AIC to update and digitalize the existing stand drives in the Philippines from our workshop in Torbole Casaglia (BS), Italy.**

The scope of supply:

- Engineering & electrical drawings for digitalization of the drives;
- Digitalization kit for existing stand drives;
- ABB components, including the communication card to connect to the PLC and the encoder card;
- Remote assistance and support.

At the present time, this is an ongoing project. Working closely online through video communication platforms, 2 out of 10 stand drives have been successfully commissioned by the customer with the remote support of AIC. The uniqueness of this solution allows the customer to increase production efficiency and achieve previously defined goals while reducing project costs. ■



## CMC Florida chose AIC for reheating furnace upgrade in Jacksonville (FL), USA

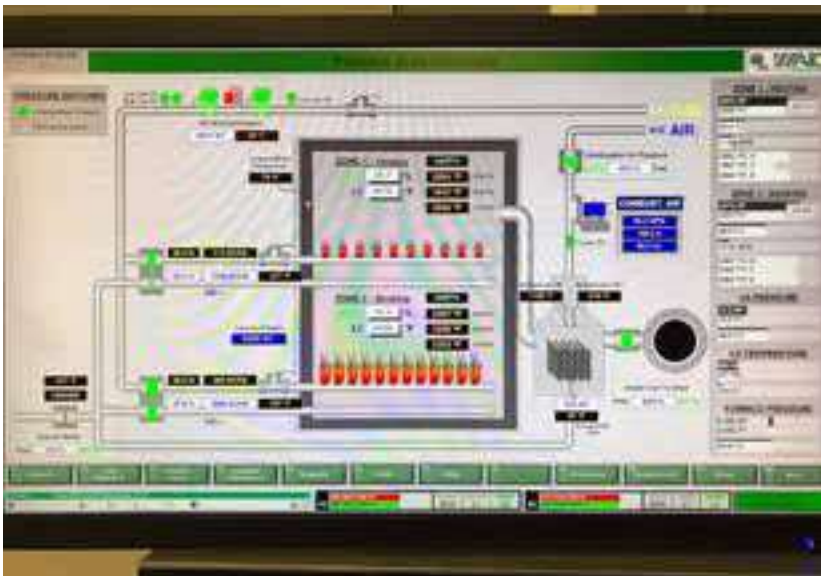
**Automazioni Industriali Capitanio upgraded the reheating furnace Level 1 combustion control system for the mill in Jacksonville (FL), USA. It took only one week of shutdown to completely replace the obsolete old combustion system in February 2020.**

The scope of supply included the design, manufacturing, internal testing, supply, installation assistance, commissioning and startup activities of the electrical and automation (E&A) part to control and command the gas combustion within the reheating furnace at the rolling mill, the new PLC / HMI system for the combustion control system, which is based on the ControlLogix platform from AB and FactoryTalk running on Stratus virtual server and thin clients configuration.

In December 2019, the Factory Acceptance Test (FAT)

was successfully carried out at AIC's workshop with full satisfaction of the customer. Besides the combustion simulation, the main track of the gas feeding and safety controls have been tested.

After commissioning in February 2020, the functioning of the gas feeding, safety controls and combustion have been improved. Consequently, the upgrade increased the efficiency of the plant and the flexibility of the automation system. ■



# PROJECTS

## The major bar producer in India chooses AIC India and its Rolling Mill Automation & Control System (RACS) for the rolling mill modernization

One of the leading steel producers in the Indian market contracted AIC to upgrade their existing control system with an aim to improve productivity & yield of the rolling mill by improving the operational stability and consistency of their shear control systems.

The achieved results of the project:

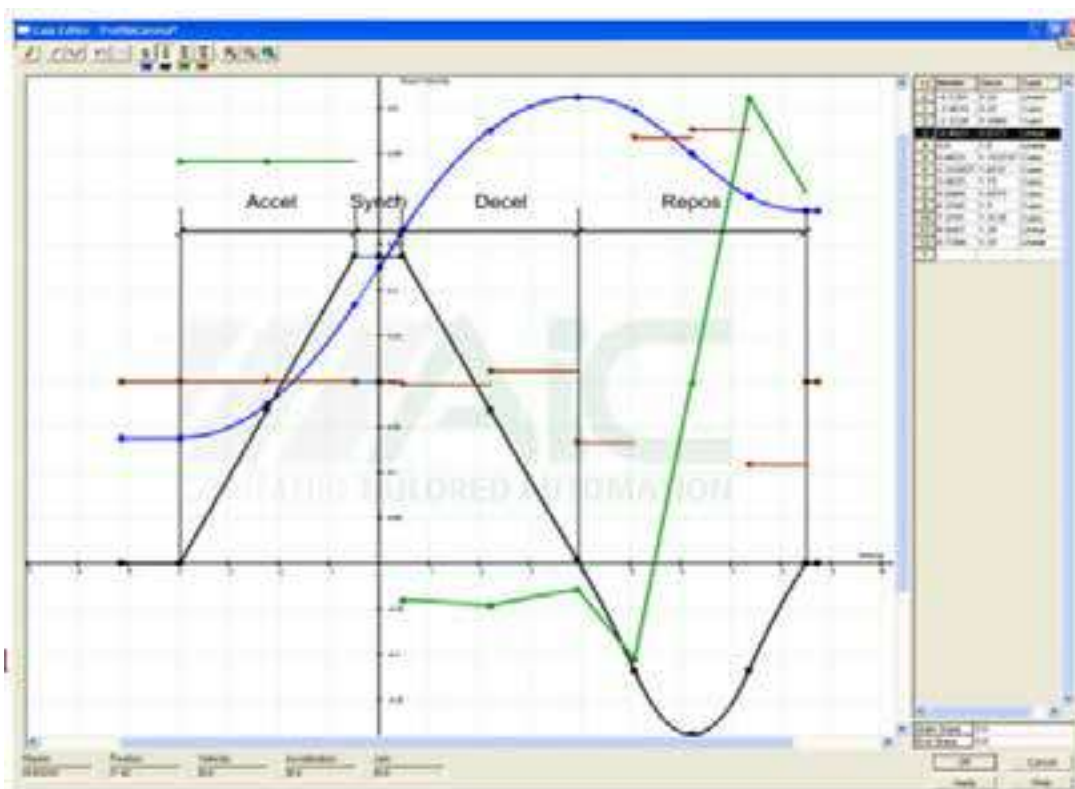
- Improved cut to cut accuracies for both crop and divide shears. Crop shears achieved the cut length accuracy of +/- 10 mm and divide shears - +/- 100 mm due to improved speed calibration;
- Optimization algorithm resulting in no cobbles due to undershoot, leading to improved mill utilization and overall yield improvement due to short length redistribution;
- Reduced billet gap enabling greater productivity due to improved cycle times;
- Less stress on shears due to optimized and calculated position control. The load is taken by the shears while the cutting has been reduced. This increases the life cycle of the equipment involved in the cutting process as the wear and tear on the equipment are considerably reduced (the reduced wear of blades and reduced risk due to braking).

The upgraded automation of the shears allowed to significantly reduce downtime, reduce cobbles & downgrades, minimize cycle time of equipment. The

various automation functions were covered in the scope of supply. For instance, Shear and Auxiliary devices control:

- Control of shear knives position has a fundamental importance to guarantee cutting precision, for this reason cutting control system is equipped with Motion control Hardware that are dedicated to control these functions;
- Axes control is the heart of the control system. It controls the position of the shear knives to assure precision and repeatability of the cut length;
- Apron control / Twin Channel;
- Tail Braking pinch rolls;
- Rake control.

As a result, the advanced control system improves rolling mill's performance and efficiency exploiting the capabilities of motion control hardware and software. The control system supports operations and maintenance personnel. These cost-effective solutions are the driving force in the current market scenario as they help in a short-term return on investment. ■



Cut cycle control (reference only)

## Acciaierie di Sicilia: the modernization of its rolling mill in Catania (CT), Italy

**Automazioni Industriali Capitanio (AIC) successfully completed the rolling mill modernization as a technology partner at Acciaierie di Sicilia (Alfa Acciai Group) in Catania (CT), Italy. The new project includes the installation of six new roughing stands (supplied by Danieli) and the renovation of the rolling mill automation system.**

Following the successful installation of six new roughing stands and the renovation of the automation system in 2019, Acciaierie di Sicilia (Alfa Acciai Group) chose ATS Mechatronics to supply and integrate two tying machines (TMB 400) and AIC to upgrade electrical and automation (E&A) system of cooling bed exit and bundle forming areas of the rolling mill in Catania, Italy. The project aims to increase performance and improve troubleshooting by replacing obsolete equipment and upgrading the automation system. The scope of supply includes:

- Design, manufacturing and commissioning of two automatic Tying Machines TMB 400 for round bundles with auxiliary mechanical equipment, hydraulic circuit and electrical systems;
- New control panels;
- New Rockwell Rack PLC and the upgrade of the logic system;
- New main and local desks;
- New motors and motor protection panels;
- Upgrade of HMI control system and new SCADA screen;
- New cameras for the existing CCTV System;
- Engineering & electrical drawings;
- Software development;
- Installations, start up support and remote assistance.

All Tying Machines of ATS Mechatronics were tested in its workshop prior to shipment to the site, reducing start up time and costs. According to the project schedule, AIC was also involved in installation supervision and commissioning phases. The project was commissioned during the summer 2020 shutdown ■



The team of AIC is professional, well trained, quickly responds to incoming requests and has 360° competences."

**Gennaro Briadoro**

Production Manager at Acciaierie di Sicilia



## PROJECTS

### Upgrade of the SH100 Peeling machine control system at Acciaierie Valbruna

**AIC has successfully commissioned the extension of the SH100 Peeling machine control system at Acciaierie Valbruna in Vicenza (BS), Italy. Delivered in a short time, the project was commissioned in August 2020.**

The control panel for the new Bueltmann SH100 peeling machine (including the switchboard, Sinamics S120 multidrive system with SLM regenerative DC Bus, S7-400 PLC, safety system, etc.) was supplied & commissioned by AIC at the beginning of 2020.

The new extension aimed to upgrade existing switchboards to connect new inverters.

The scope of supply included:

- Engineering, electrical drawings and upgrading the existing switchboard;
- Software development;
- Electrical power & auxiliary parts to connect power cables to existing equipment;
- Installation, start up support & remote assistance;
- Packing & shipping. ■



### AIC South America commissioned a new bar rod mill

**AIC South America has been chosen for commissioning the new bar line of Aço Verde do Brasil - AVB (former GUSA) in Açailândia city, Maranhão state, Brazil.**

The bar line equipment commissioned by AIC:

- Pinch roll;
- Divide & Chopping shears;
- Braking slide;
- Moving rakes;
- Cooling bed run in roller tables;
- Aligning rollers and lifts;
- Chain and tray transfer systems;
- Cold shear;
- Gauge beam with gauge head;

The advantages of the improvement are:

- Prevent billet discharging logic review;
- Short gap detection and action at roughing mill crop/cobble shear;
- Tracking accuracy;
- Loop forming/deforming optimization;
- Roll change procedures using remote control;
- Reduce downtime to improve productivity;

All the drives in the mill were commissioned by AIC.

The main specifications of the rolling mill are:

- Mechanics: PRIMETALS;
- PLC: Siemens S7 416-5 H PN/DP;
- Automation application software: PRIMETALS / Siemens PCS7;
- Drives: Siemens SINAMICS S120 / Siemens AC motors.

For rod products, sizes 5.5 mm to 16 mm diameter,

the process section from the last finishing stand is delivered to the ten stand No-Twist® Mill (NTM®) "Vee" type block mill. The intermediate and finishing mills are also used to produce bar products at max. size 40 mm. For rebar products, the intermediate mill can split single pass material to 2, 3 or 4 strands in operation.

Mill Production Data:

- Billet Size: 150 mm square x 12.0 m long, 2080 kg nominal;
- Mill Speed: 105 m/s for rod outlet and 15 m/s for cooling bed;
- Mill Capacity: 130 t/h @ 100% efficiency;
- Annual prime output capacity: 550,000 t. ■





## AIC completed the revamping of the Rolling Mill T460B at Acciaierie Valbruna, Italy

**AIC completed the revamping of the Rolling Mill T460B at Acciaierie Valbruna (Vicenza, Italy) with a focus on modernization of mechanical (supplied by Primetals) and electrical equipment.**

AIC's turn-key electrical & automation (E&A) supply included parts from MV cells up to field connections, such as:

- New electrical installation, including cables and cable trays;
- Together with the customer, a new control room was built. Completely isolated from the system, it includes a new flooring with REI insulation level and with all the floors;
- The whole system is connected to the network. This provides the ability to monitor the system from a supervisor on a virtualized and remote platform with HMI & diagnostics tools;
- The installed PLC platform is a new TIAportal V15.1 PLC, while Ignition was installed for the supervision;
- The main drives are Siemens S120 in multidrive configuration with 12-pulse regenerative DC bus. This significantly reduces the harmonics and recovery of energy during the braking of the main drives;
- The supplied AC motors are Siemens: two motors rated 310kw air cooled for the Saw and Edger stand and the one motor for the mill rated 1900kw water cooled, all dimensioned with strong overloads up to 180%;
- The auxiliary drives have been replaced by Siemens G120;
- All the Roller tables of the open mill have been

installed with self-protecting electronic motor-switches that help to avoid the intervention of electric technicians for the recovery of the system in case of its failure. This solution allows an almost complete abolition of the interventions to restore the motor-protection;

- Personalized RACS system was made with a special shooting control between the Edger and 3-Hi, tailored according to the customer's requests.

It should be taken into account that some of the customer's benefits of the upgrade are:

- E&A parts are completely new;
- New AC Motor rated 1900 kw controlled by inverter to increase plant performances;
- New ergonomic pulpits have been created for a greater comfort of the operator;
- Now, it is possible to speed up the stop time by 15 times thanks to new motors. Consequently, this significantly reduces the waiting time for operators and increases their safety through improved process and access control to the machines;
- The advanced platform with integrated architecture ensures faster and more effective troubleshooting and the reliability of the system which was designed with a high level of flexibility for its future development. ■



# PROJECTS

## Feralpi Siderurgica chooses AIC to upgrade a coil-handling area in Lonato (BS), Italy

As a result of a successful long-term relationship, Feralpi Siderurgica contracted AIC for the coil-handling upgrade at the wire rod rolling mill in Lonato (BS), Italy. AIC completed the modernization in January 2020.

Besides a complete revamping of the wire rod finishing area with electrical and automation (E&A) supply from laying head exit to coil management, AIC covered the modernization and installation of a new coil lowering station and the extension of the coil handling area with a new trimming machine designed according to an upgraded continuous process due to a new welder machine. Completed in January 2020, the scope of supply included:

- New power control panels suited with ABB drives for the management of the coil cooling conveyor,

the laying head and coil handling area;

- Rockwell PLC and Safety PLC cabinets, main and local control desks;
- New Safety system suited with safety boxes, released keys and access control functions.

AIC was also involved in installation supervision and commissioning phases within the project schedule. The coil-handling upgrade improves the safety of operators, optimizes and increases the production capacity and flexibility due to the production of wire rod according to the weight requested by the client. ■



## Revamping project of the scrapping mill at Ecoacciai in Pontedera, Italy

Following the first phase of the project, AIC successfully completed the second phase of the revamping project at Ecoacciai in Pontedera (Italy). The full scope of the project included the replacement of the scrapping mill automation part, the hardware integration, the software security & safety systems installation.

The scope of supply:

- Installation of the safety access with electronic doors and coded key system to access the area;
- Activation of the entire security system;
- Access control to production areas for maintenance and operation activities due to the full controlled safety system;
- Installation of the CCTV.

The security system is accessible from the main control room and the local offices. It will also be monitored remotely by supervisors from the office in Odolo (Italy). All data related to the production control and the plant's operations can be viewed remotely. The second phase was completed as scheduled. New equipment, updated software and control systems (with radio and remote modes) simplify the operations and make the entire system more user-friendly and increase the safety level.

The project has been developed in collaboration with Marco Angiolini (Mill Department Manager at Ecoacciai), who identified different zones in the production area in order to have a more dynamic control on each component, not having to stop the entire plant for single interventions and ensuring a high security level in both production and maintenance phases. ■



# INNOVATIONS

## Robotic tagging, tying and tracking of long products

**AIC provides automation solutions to automatically tie and tag bundles of profiles, sections, rebars and wire rod coils. The main benefits are increased operator safety, better plant productivity, cost reduction and reduced errors in product identification and tracking.**

Tagging of semi-finished or finished products is a requirement at steel plants and requested by customers for material tracking and to aid product quality control. Manual tagging of bundles of bars in mill stocking areas with pre-printed labels as illustrated in figure 1 is the traditional method but it has a high error rate. Typically 5% of bundles are not tagged or tagged with the wrong tag, which equates to an average of 30 bundles per shift at the average plant. Such an operation tends to occur in the stocking areas of mills, so there are hazards associated with heavy equipment, roller tables and overhead cranes.

### AUTOMATIC TAGGING AND TRACKING

An automatic tagging system is one which is part of the plant tracking system, is situated within the process line (i.e. before the stocking area) and which minimises or eliminates human activities in hazardous or hot areas and contributes to an overall upskilling of personnel at the plant. Or data indicates automatic tagging reduces the number of bundles not tagged to 0.2%, a significant reduction.

Automatic tagging island has been designed by AIC as a solution. A typical layout adjacent to a process line is illustrated in figure 2, and figure 3 illustrates its component parts, namely:

- Anthropomorphic 6-axis robot;
- 3D vision system installed on the robot wrist;
- Set of printers for the identifying tags;
- Machine to create and distribute the tag supports;
- Welding machine;
- Electrical panel that commands the complete island and includes the relevant HMI's for diagnostics and alarms.

The island has a small footprint and is completely contained in an industrial container properly designed and engineered to include all the machinery in an air conditioned and protected area.

Anthropomorphic robots are nowadays well proven devices and are used in several different applications in the steel industry. There are 'foundry' models available that are specifically designed to work in harsh environments and that are versatile in use.

The 3D vision system adopted by AIC is a double camera system specifically engineered for harsh environments and which does not require a laser beam (see figure 4 ). With this system, there is no need to scan the product in order to create the cloud of 3D points but a simple acquisition, like a picture is enough in order to recreate the 3D profile of the product. The sensor used is a matrix sensor and not used for profilometry. In this way, no special movements of the robot are needed to finalise the material scan, and only positioning the bundle



Fig. 1 - Manual tagging of pre-printed labels

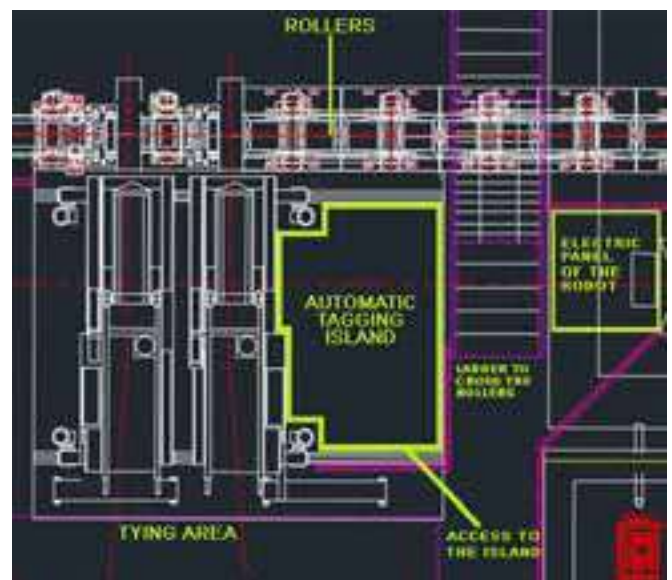


Fig. 2 - Typical automatic tagging island layout

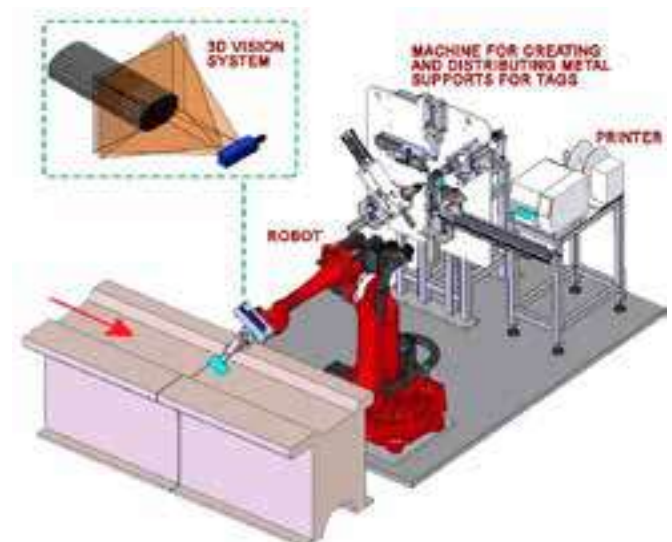


Fig. 3 Schematic of component parts

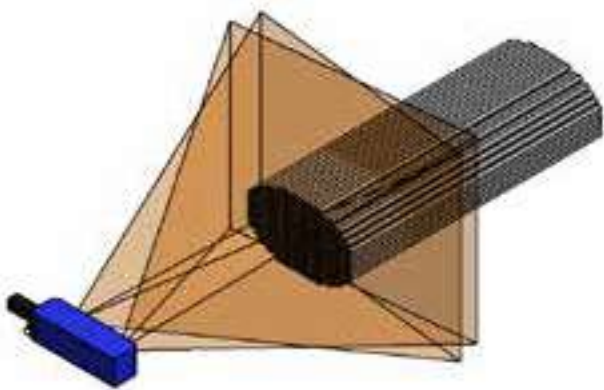


Fig. 4 - 3D vision system during acquisition



on the conveyor is required. Measurements have been taken on a rebar rolling mill where the robotic tagging application is running at 180 tph with a cycle time of 8 seconds where the bundle is stopped on conveyor for tagging. 1.2 seconds is the timing dedicated to 3D scan of the bundle.

The 3D vision system can automatically detect the type of products without any specific setting thanks to advanced analysis algorithms. Figure 5 shows two examples of the 3D vision system output. The colour codes are shown in Table 1. This image appears operators' control panel and it is also saved on a network data storage device, together with all other images used during the image processing procedure. This data is used for algorithm remote assistance, for quality control,



Fig. 5 - Examples of the 3D vision system results

Table 1 - Key to color coding

Color code	Explanation
White with black cross	Chosen item to tag
Green/ Yellow	Alternative sites
Orange	Suitable but with limitations
Red	Unsuitable
Square Blue Lines	Region of obstruction
Blue circle	Region of interest

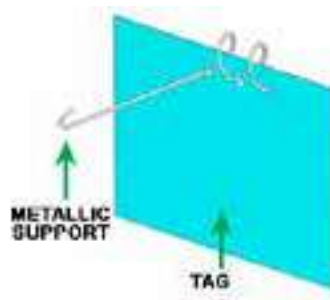


Fig. 6 - Tag and metallic support



Fig. 7 - Metallic support machine

and are accessible for remote control/ operations.

Printers installed inside the tagging island are thermal transfer printers and an external tag charger to handle up to 10,000 tags, able to cover one full production week at site without the need of replacing the tags and ribbon. The tags can be applied using a metallic support (see figures 6 and 7) using a specifically engineered machine or they can be applied with a stud as illustrated in figures 8 & 9.

The metallic support is used to keep the printed tag away from the head of the bundle where the application is done when material temperatures are still high. Studs are used when the application is done on relatively cold material where it's not a problem to keep the printed tag to minimum distance between the head of the bundle and the tag itself. For both these purposes, there is a welding machine installed. Figure 11 shows examples with studs and metallica supports.



Fig. 8 - Stud dispenser

# INNOVATIONS



Fig. 10 - Tags with studs and metallic supports

The robotic tagging application has many additional options that increase the flexibility of the system to meet customers' needs:

- The robot can be used for counting the pieces inside a bundle.
- Other locations where it is possible to install the tagging robot are:
  1. At billet caster exit;
  2. The finishing area of a wire rod mill. Thanks to the 3D vision system & advanced image recognition algorithms, the robot chooses the most suitable position for the tag and applies it to the wire rod coil by using a metallic support created directly in the robotic island, without the use of a welding system. The clip is applied to the selected rod with a dedicated movement of the robotic wrist. Figures 11 & 12 show 3D schematics of coil place identification and tagging, while figure 13 shows the position of the Robotic Tagging Applications.
- Trolleys and guides in order to tag coils coming from several production lines



Fig. 11 - Tagging on wire rod coils

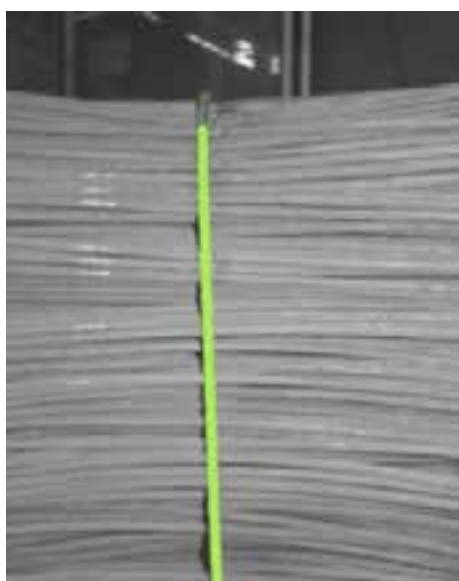


Fig. 12 - Place identification on wire rod coils

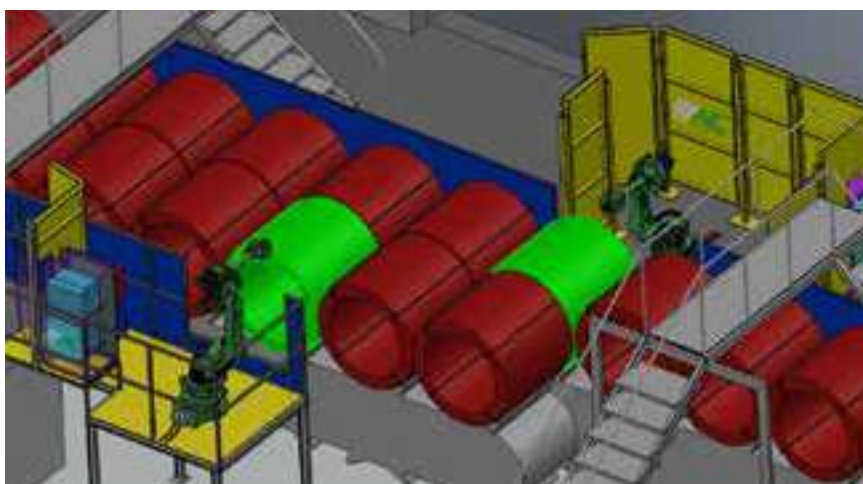
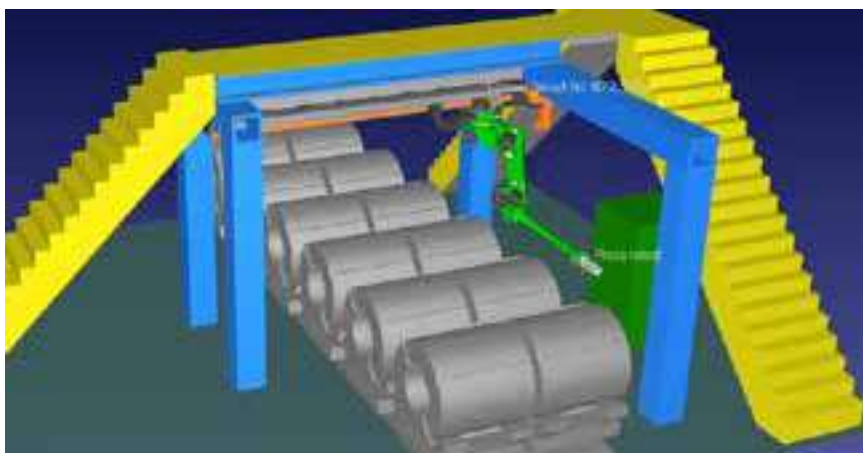


Fig. 13 - Positions of the robotic tagging application



**TMS 150**  
for sub bundles



**TMB 400**  
for bundles



**TMP 500**  
for stacks



**TMP 1100**  
for big stacks

## TYING MACHINES

Tying machines are designed to automatically tie bundles, sub-bundles and packs (stacks) with steel wire. They are positioned downstream of the product formation area and have the shortest tying cycle available on the market (6.8 seconds for complete double turn tying). The main parts of the machines are:

- **Main body with guides.** A welded steel structure is mounted on combination bearings that run on horizontal guides. For cleaning and maintenance, the machine can be retracted to keep the rolling table clear, inductive sensors and a gear driven motor provide online or offline positioning. Moreover, two vertical guides are also installed in the part where the tying head moves driven by a hydraulic cylinder, another inductive sensor is provided for device positioning in stand-by and a photocell for tying.
- **Tying head.** this is positioned in a solid welded and annealed and machined steel structure all the cables and pipes run through ducts. It comprises a wire feeding device, a knot forming device and the guide clamps. The wire feeding device is made of two steel plates with a characteristic profile shape assembled in order to set up a conical canal between them where the wire will be loaded and trailed. The knot forming device is a revolving tool steel head driven by a hydraulic motor with jaws and wire

cutting knives built inside. The guide clamps are arc shaped plates of wear-resistant steel that supports a set of rolls that drive the wire around the bundle. An appropriate number of movable rolls is provided for the feeding of the tie wire and his recover during the tying process.

- **Bundle retaining jaws.** The jaws are installed in the welded steel structure pivoted on a common base. They are driven by two hydraulic cylinders that allow them to close in order to keep and hold the bundle in the correct shape during the tying process.
- **Valve bench.** The valve bench drives the hydraulic devices of the machine and is installed at the back of the machine.

The machine is installed after the material bundle forming station. Once the product stops in the tying position on the roller table, the automation system sends a signal of 'BUNDLE READY'. A pair of jaws holds the product while the wire is tightened with one or two turns (selectable via control panel) and twisted. The roller table will move the product to the next position, and the cycle will be repeated when all the required ties are made. At the end of the tying the process bundle is transferred to the discharging area for its tagging and final storage. The example is shown in figure 14.

### The benefits of the ATS tying machines:

- the shortest tying cycle available on the market (6.8 sec for a complete double turn tying);
- smooth integration in rolling mill layouts due to optimised dimensions and complete supply of mechanical, media, electrical & automation systems;
- heavy and sturdy machines minimise maintenance cost and reduce downtimes and production loss.

These features allow to simplify routine operations & to increase efficiency of the plant. The material tracking system directly connected with automatic tagging systems assures the tagging of each single product with the right identification data and improving traceability of finished products. Data connection to database makes the traceability complete following the product in all the production operations until the end user. ■



Fig. 14 - Example of the product

## EVENTS

IT IS TIME TO  
**INSPIRE**

Practical knowledge and professional experience are key elements of the learning process. AIC supports and collaborates with educational institutions to share professional knowledge and contribute to the development of young professionals.

**Oct 29, 2019**

AIC held an open lecture at its workshop in Torbole Casaglia (Italy) to the fifth-year engineering students of The University of Brescia. The event was part of the initiative "Lezioni in Fabbrica" ("Lectures at the Factory") promoted by The University of Brescia and The AIB Industrial Association of Brescia.

As the main speaker, Marco Capitanio (Managing Director of AIC) spoke about "Robotic and Automation Systems" and advanced solutions integrated by AIC into the plants in the steel industry. Moreover, the professors (Riccardo Adamini and Francesco Aggogeri) were involved in the discussion. After the lecture and a coffee break, the students were divided into the groups and had a guided tour.

**Nov 15, 2019**

Lunardi High School students from Brescia (scuola superiore Lunardi di Brescia) visited AIC in Torbole Casaglia (Italy) as part of the initiative "PMI DAY 2019 - INDUSTRIAMOCI" promoted by AIB Associazione Industriale Bresciana and Confindustria - Piccola Industria. The event was designed to help young people to see how local products and services are created and to share knowledge and experience of the people who contribute to the company's growth.

Before the lecture of Mr. Roberto Migliorati (Business Development Manager of AIC), the students were divided into the groups and had a guided tour in the workshop where they could ask practical questions to the founder and current employees of the company.





**Dec 3, 2019**

Master's degree students in "Ingegneria dell'Automazione Industriale" ("Industrial Automation Engineering") of The Università degli Studi di Brescia visited Feralpi Siderurgica S.p.A. as a final practical part of the open lecture "Isole robotizzate e sistemi di automazione" ("Robotic islands and automation systems"), which was held at the AIC's workshop in Torbole Casaglia (Italy) on October 29. Feralpi Group provided a chance to see the processes and systems previously described in the lecture.

**Feb, 26 2020**

AIC held a lecture for students of the ITS course in Lonato (Italy). The experts of AIC in the field of Industrial Automation explained in more detail about the Robotic Island and its application. The event was designed to help young people better understand the principles of Industrial Automation.

**April 10, 2020**

AIC and Istituto di Istruzione Superiore Luigi Cerebotani (ITIS) conducted the online lecture for 30 students in Lonato (Italy) on the topic: "Level 2 Systems for Industrial Production". In addition to the theoretical part, students had the opportunity to discuss the most complex aspects and get answers from our experts to all questions.



## EVENTS

**May 16, 2020**

Fondazione ITS Lombardia Meccatronica opens its doors for the virtual presentation of new training courses for the program: "Tecnico superiore per l'automazione ed i sistemi meccatronici" (Technician for automation and mechatronic systems – Advanced level). The representatives of AIC participated in one of the modules. After the presentation of the company, the partners and visitors could interact with the experts of AIC and ask questions about automation and mechatronic solutions.



**September 19, 2020**

AIC sponsors the "Steel Cup" with Giuseppe Pasini & Antonio Gozzi.

Organized by FeralpiSalò and sponsored by Automazioni Industriali Capitanio, The IV Trofeo Carlo Pasini – Steel Cup took place at the Turina stadium in Salò (Italy). The football matches between Virtus Entella, U.S. Cremonese and FeralpiSalò have become a great event and a unique opportunity to share values and continue the long-term collaboration between AIC, Feralpi Group and Duferdofin - Nucor. Moreover, Daniel Ciofani (U.S. Cremonese) has received the AIC award as the best forward of the IV Trofeo Carlo Pasini.



## SHAPING THE FUTURE TOGETHER

We are always delighted to meet people who share the same passion for technology and innovation. By participating in career events, conferences and webinars, AIC creates opportunities for young people through internships and personal development programs, as well as special training events for more qualified professionals. Together we can shape a sustainable future!





**THE WORLD EXPERIENCE  
IN ENGINEERING METAL  
AUTOMATION PROCESS  
IS ALL IN YOUR HANDS**

**Automazioni Industriali Capitanio Srl**

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