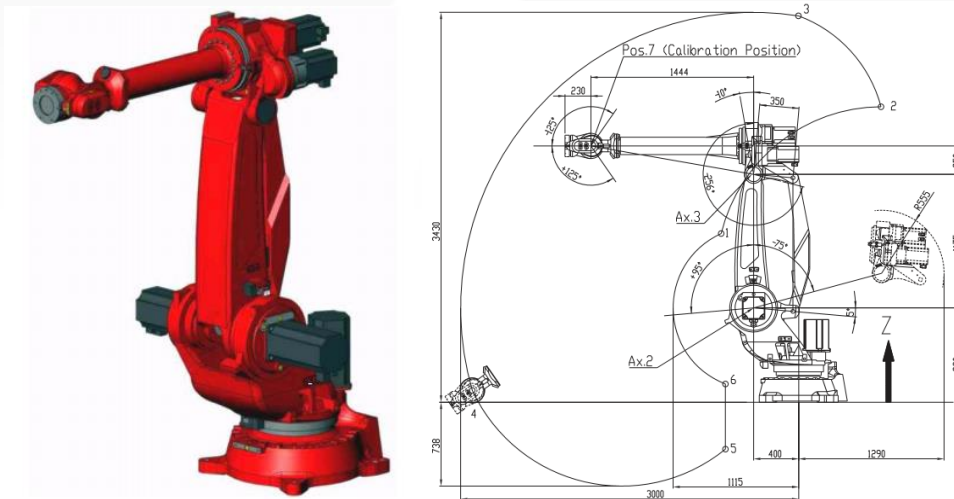


## Robotics in steel industry

The growing number of our customers' need to maximize security within their manufacturing plants has pushed AIC to step up its projects in robotics, especially on taking samples in meltshops area, where they find wide applicability anthropomorphic robots that are suitable to pickup samples in EAF and LF. New projects for automatic tagging devices in casting area for billets and finish area for bundles and wire rod rolls are being finalized. Collaborations have been tightened with leader partners in robotics sector.



Another important collaboration for AIC it is the one with Infosight, leader of the identification field and in printing high-temperature resistant tags (more than 1200 °C). Tags can be applied directly on billets at the exit of continuous casting machines by MIG welding without the help of hooks.



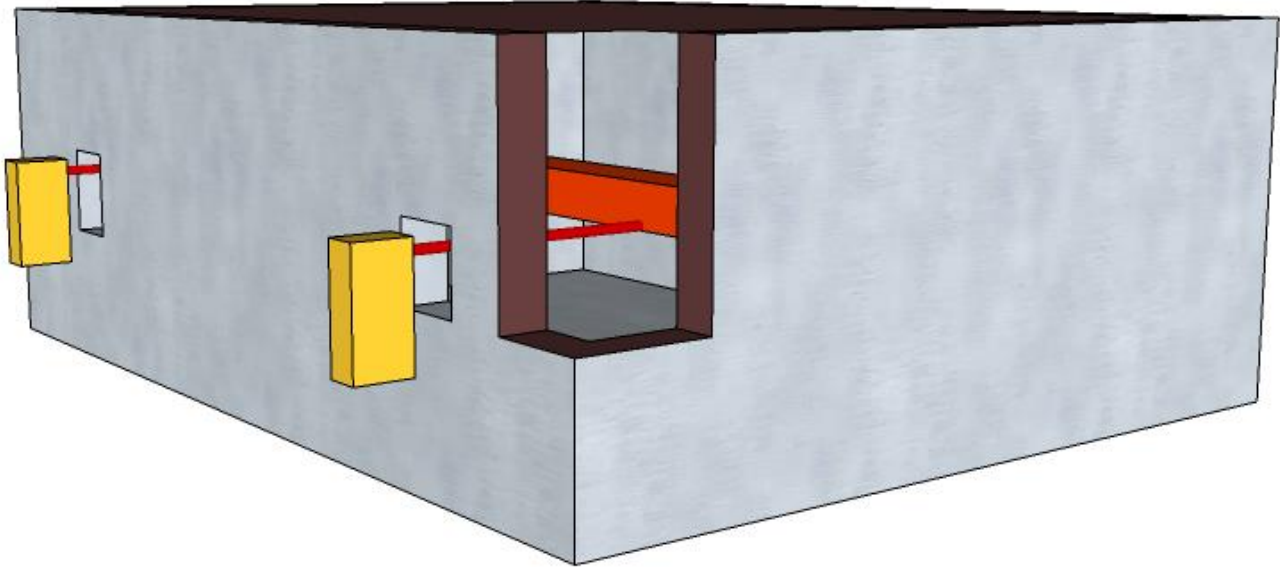
(photos courtesy Infosight)

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### Automatic furnace discharge, from mechanical devices to lasers

In many reheating furnaces where the automatic discharging is still based on mechanical devices AIC has developed a discharging system based on non-contact probes with infrared sensors to determine the position of the billet inside the oven, and then that commands the pusher to discharge the detected billet decreasing significantly the use of mechanical devices.



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### Profilemeter and Defectmeter

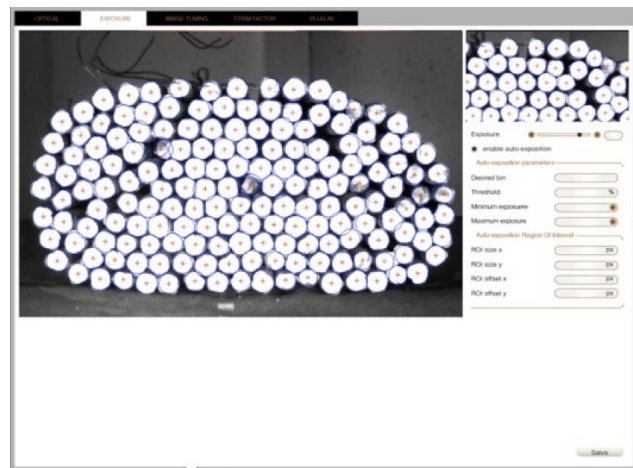
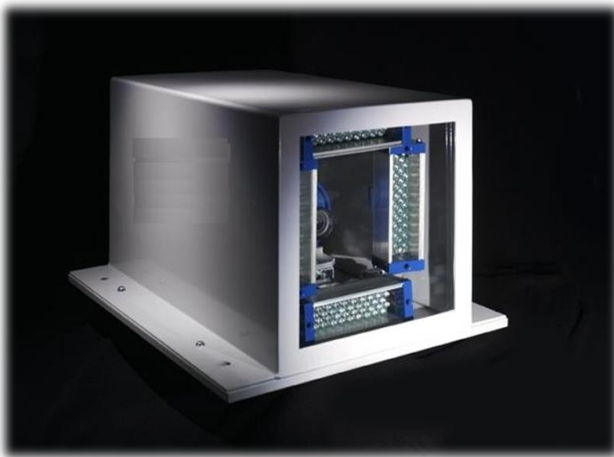
AIC, in collaboration with sector leading companies, is able to provide stations fully integrated with the plant automation to measure profiles in production and to in-line detect defects on material while production is running.

### Speed measurement system

AIC has been developing a cut to length system on cooling bed optimized to have precision of +/- 20mm on flying shears, this has been done by using speed measurement devices based on infrared technology. Using no-contact sensors AIC can guarantee the best performances on cut to length also on high speed production lines.

### Barcounting

AIC, in collaboration with VideoSystem, is able to provide bar counting systems while material is being translated on chains and when is already in a bundle as well, all integrated in plant automation to allow the operator to act in the minimum required time and in the appropriate way in those plants where the bar counting is a must.



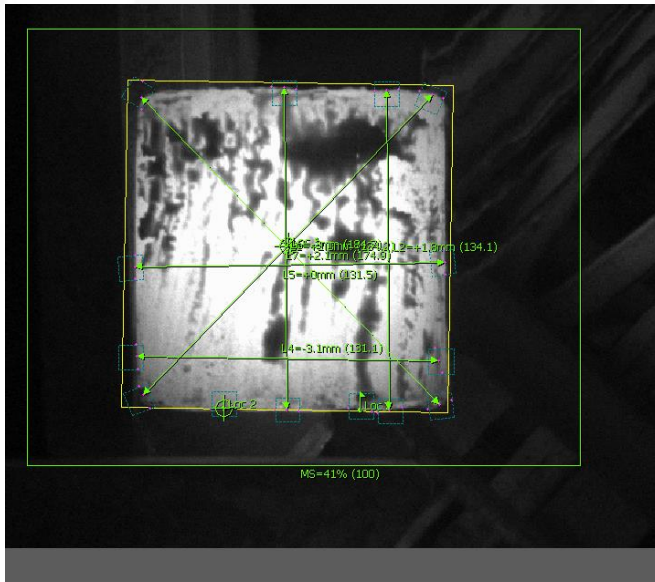
(photo courtesy VideoSystem)

### AIC Automazioni Industriali Capitanio sites:

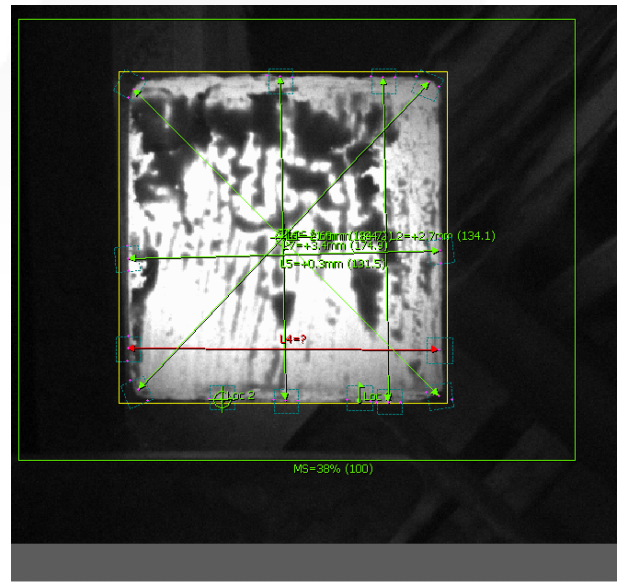
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### Billett shape detector

A camera-based system to detect billet shape while just out from cast continuous machines has been developed, in order to immediately check the deviation from target devices, giving an alarm when billet sizes and rhomboid are out of settable thresholds. System can be used also on reheating furnace entry at rolling mills.



System Configuration		Inspection Status
Device IP Address	10.10.115.22	<b>PASS</b>
Device Name	Tvcc2LatoLa	
User Connected		
Solution Running	ID 4	
Description	Sol_005	
Display Update	Continuo (Tutto)	



System Configuration		Inspection Status
Device IP Address	10.10.115.22	<b>FAIL</b>
Device Name	Tvcc2LatoLa	
User Connected		
Solution Running	ID 4	
Description	Sol_005	
Display Update	Continuo (Tutto)	

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## Level 2

AIC can supply different kind of level 2 software, starting from production stops analysis modules, material tracking modules etc. going to APEX and QMOS systems from QUAD Infotech.



The screenshot shows the AIC software interface with a user menu at the top (GEST.UTENTI, GEST.NOTE, REP.DIARIO, REP.FERMATE, TRACKING) and a clock showing 13:52. Below the menu is a table of production events with columns for Spezza, Inizio (GG-MM), Ora Inizio, Ora Fine, Totale (h:m:s), Zona, Cause, and Diam. The table contains 10 rows of data, each with a 'GIUSTIFICA' button and a 'NOTE' button.

Spezza	Inizio (GG-MM)	Ora Inizio	Ora Fine	Totale (h:m:s)	Zona	Cause	Diam.
GIUSTIFICA	18-01	13:15:44	13:16:09	00:00:25	nn ass.	nn giust.	ND
GIUSTIFICA	18-01	11:46:43	11:46:54	00:00:11	nn ass.	nn giust.	ND
GIUSTIFICA	18-01	11:30:38	11:31:19	00:00:40	nn ass.	nn giust.	ND
GIUSTIFICA	18-01	11:18:08	11:20:18	00:02:10	nn ass.	nn giust.	ND
MODIFICA	18-01	11:07:05	11:15:23	00:08:18	nn ass.	cambio diametro	ND
GIUSTIFICA	18-01	10:54:58	10:55:36	00:00:37	nn ass.	nn giust.	ND
MODIFICA	18-01	09:18:25	09:26:35	00:08:09	nn ass.	cambio attrezzatura	ND
GIUSTIFICA	18-01	09:02:11	09:02:58	00:00:47	nn ass.	nn giust.	ND
GIUSTIFICA	18-01	08:56:22	08:59:44	00:03:22	nn ass.	nn giust.	ND



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