ROSIN

AUTOMATION OF PRODUCTION PROCESSES

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History of ROSIN Solutions S.L.

ROSIN Solutions S.L. was founded in 1985.

Since then, we developed automation solutions for the automotive industry (BMW, Mercedes), automatic warehouse systems (3M) and .

In the 1990s, we developed a system for automated data exchange between the Ministries of the Environment (Rheinland-Pfalz and Baden-Württemberg) and the OPRI (Office de protection contre les rayonnements Ionisants) in Paris.

Since 1995, we develop solutions for the steel industry.

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AUTOMATION OF PRODUCTION PROCESSES

Organisation

Headquarter in Ronda, Màlaga, Spain
German office in Osterholz-Scharmbeck, Germany

Petra Wiegmink		Heinz-Gerd Angenendt
CEO		Director of Sales

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AUTOMATION OF PRODUCTION PROCESSES

Automation Systems for the Steel Industry

CELSA, Castellbisbal, **Spain**   **RAMSES** Level 2 Automation System

ArcelorMittal, Sestao, **Spain**   **RAMSES** Level 2 Automation System

HKM, Duisburg, **Germany**   **RAMSES** LIMS

SSM Siam Strip Mill, Thailand   **Level 2 Automation System**

ILVA, ILP, Taranto, **Italy**   **Sublance Automation System**

Volta Redonda, Brazil   **Sublance Automation System**

Stahlwerke Peine Salzgitter, Germany   **Coil Heating Automation System**

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RAMSES supervises and controls production

Production Planning	Production Supervision	Production Control	Reporting LongTerm data
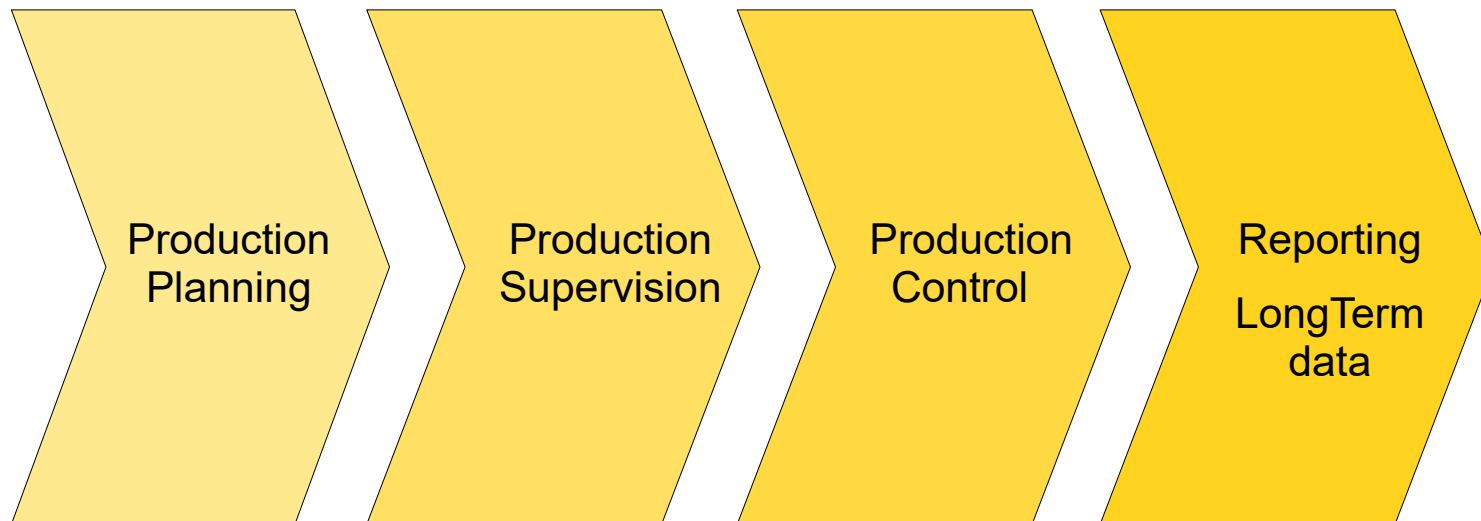
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RAMSES Level 2 Automation System

RAMSES Level 2 communicates with the PLCs in the factory, the scrap yard, the analysers in the steel laboratory, any ERP or any other systems the custimer might have.

RAMSES tracks all events, delays, user interactions.

The system has a complete **overview of the status of production** in the steel plant at any given moment.

All data are stored in the **RAMSES Production Database**, for the subsequent **generation of reports**.

RAMSES Level 2 permits the **planning of the production** and reports deviations from the plan.

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RAMSES Level 2 Automation System

The structure of the **Level 2 System** is completely **modular**, which allows to only select the necessary functions for a given installation.

Additional functionality can be added anytime if so desired.

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Modules for an efficient production

Downtime Planning	Scrap Yard	Electric Arc Furnace	Ladle Furnace
Steel Laboratory	Continuous Caster	Bar Tracking	Bar Quality Control
Ladle Tracking	Bar Tagging	Emission Tracking	Industry 4.0 Interface
Long-term Database	SixSigma Interface	ERP/MES Interface	....

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RAMSES in the Meltshop

Scrap Yard

Electric Arc Furnace

Ladle Furnace

SAP Interface

When the heats are planned, the Level 2 sends the orders to the scrap yard, using the recipes for the selected steel grade, and receives detailed information about the basket contents, which can also be found later in the scrap control report.

In the EAF, all events and delays are recorded. The user is informed about consumptions, special additions, ladle status, and baskets contents.

Several reports deal with the production in the EAF.

During the production in the LF, the Level 2 communicates also with the laboratory.

Relevant production information is passed on to the ERP (in Celsa, Barcelona, this is SAP). SAP sends updates about steel grade back to the Level 2.

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RAMSES in the Caster

Continous Caster	During the casting process, casting speed and weight in tundish are recorded, together with analysis data, information about the steel levels in the moulds, and primary and secondary cooling systems.
Bar Tracking	The bars are followed from the moment of them being cut through the weighing process and the transport table until they are stored in the yard.
Bar Tagging	The Level 2 generates orders for the printing of tags that are then welded to the bars in the transport table by a robot.
Bar Quality Control	The Level 2 permits to enter the results of the final bar quality control, either manually or via an App on a Handheld device.
	The bar quality information is passed on to SAP and SixSigma and used in the Industry 4.0 project.

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RAMSES Other Modules

LIMS	The **RAMSES** LIMS communicates with all analysers and measuring devices, and combines their analysis data to complete steel and slag analyses which are, if they are within the plausibility ranges, automatically forwarded to the Level 2 automation system.
Emission Tracking	The EmissionTracker receives and records particle concentration and flow rates in the chimneys of the EAFs.
Ladle Tracking	Ladle information (use, steel quality and status information) are recorded.

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RAMSES Interfaces to other systems

SAP or
other ERP

SixSigma
Database

Industry 4.0
Data

Long-term
Database

The Level 2 system communicates relevant production information to other systems.

While the data exchange with SAP is based on files, we insert the relevant data directly into the SixSigma database.

For the new Industry 4.0 project, we extract data during the production process and communicate the data as JSONs to a NATS server.

The long-term database is hosted by AWS in the cloud. For cost reasons the database server is normally offline. A dedicated **RAMSES** process wakes the database server up every week, extracts and stores the production information of the week before in the long-term database and then shuts the server down again.

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Extensive Report functions

RAMSES Level 2 offers reports of all types

- Detailed heat reports

- Daily summary reports for the production in the furnaces and in the casters, delays, scrap input, additions, chemical analysis of steel and slag, production times, electrode consumption

- Emissions report for the environmental department

- Several different report types about the bar production

The existing reports and layouts are only suggestions. The client defines the contents and layouts.

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Minimal Overhead for IT Department

RAMSES Level 2 comprises

- Monitoring of all RAMSES processes

- Alarms delivered via email, SMS or SmartPhone App

- Automatic maintenance of the production database

- Backup of all production data to long-term database

- User specific updates

We offer Support and Maintenance contracts up to 24/7.

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Support and Maintenance Services

We offer remote support and maintenance. This guarantees our immediate intervention in case of problems with the system, and bug fixing.

Additionally we offer packages of service hours at a reduced hourly rate, which can be used for the implementation of additional functions not included in the original scope of supply.

For this, we need permanent remote access to the customers' servers where the Level 2 System is installed.

We have installations on Windows Servers, as well as on Solaris and Debian systems and an installation under OpenVMS on Alpha Servers. In these installations we use MS SQLServer, ORACLE, Informix and other database systems.

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RAMSES is the Right Choice

RAMSES is the right choice to implement a Level 2 automation in an existing environment.

RAMSES is the ideal replacement for an existing but basic Level 2.

RAMSES can be delivered compliant with any company standards regarding hardware, operating systems and databases.

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