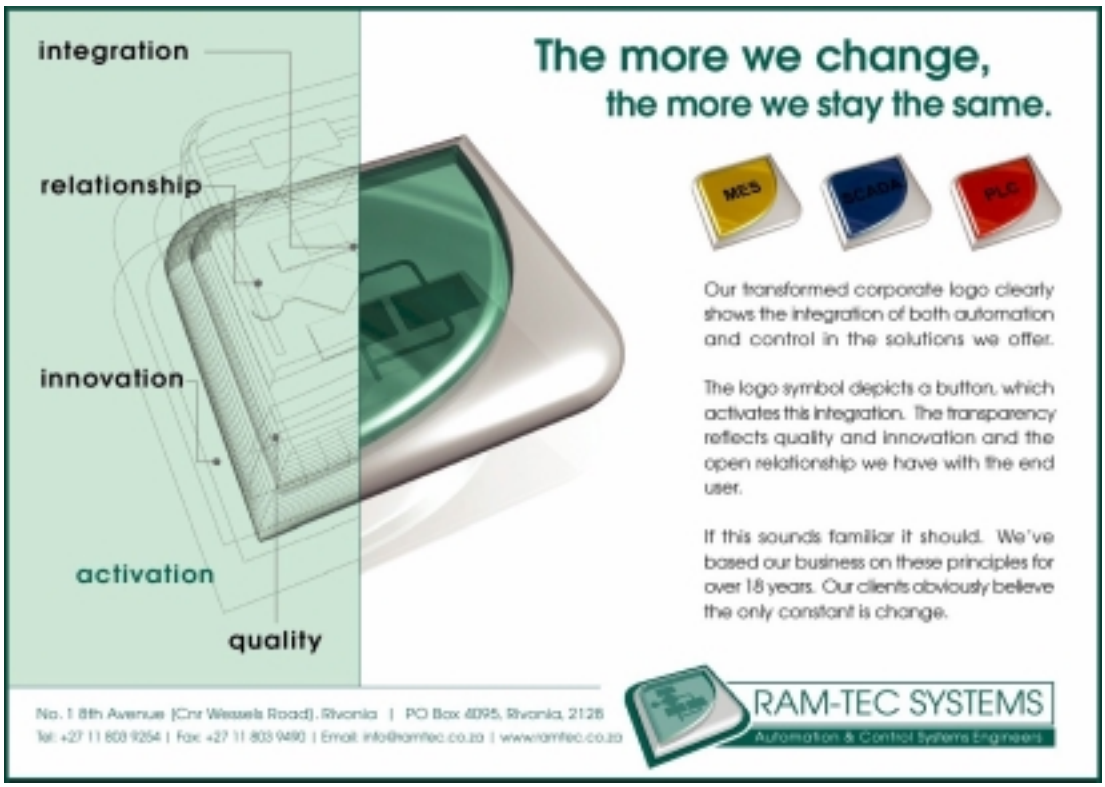
RAM-TEC SYSTEMS

Automation & Control Systems Engineers

COMPANY PROFILE



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RAM-TEC SYSTEMS
Automation & Control Systems Engineers

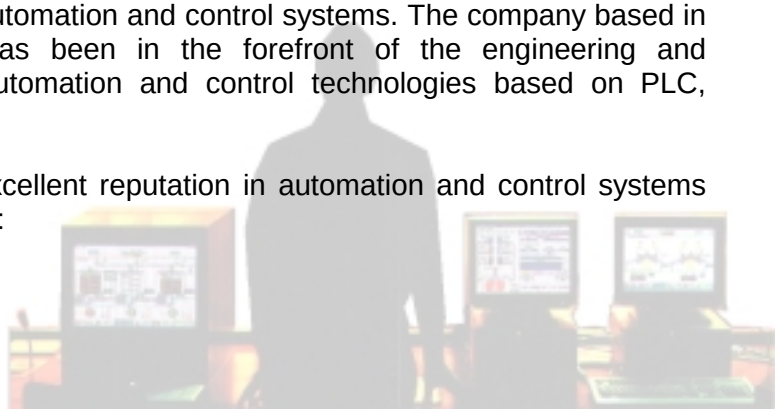
1. MISSION STATEMENT

Ram-Tec's mission is to provide cost effective and customer beneficial world class automation and control solutions based on programmable logic controller (PLC), Supervisory Control and Data Acquisition (SCADA) and Manufacturing Execution Systems (MES) products.

2. INTRODUCTION

Ram-Tec Systems (Pty) Ltd established in 1987 has over 15 years of experience in turnkey solutions for industrial automation and control systems. The company based in Johannesburg, South Africa has been in the forefront of the engineering and implementation of the latest automation and control technologies based on PLC, SCADA and MES technology.

Ram-Tec has established an excellent reputation in automation and control systems based on the following principals:



- Quality
- Expertise
- Innovation
- Service
- Focus
- Partnerships

Ram-Tec Systems has a core of full time highly qualified and skilled engineers, but works closely with well known industry specialists in its field as well as having access to a reliable contractor base should specific projects require.

The company provides the following services and supplies the following equipment on a turnkey basis or in part as required:

- Project Management & Quality Control
- Low Voltage Electrical, Instrumentation & Network Design
- PLC, SCADA Programming & Configuration
- MES Configuration & Integration with the Business Systems
- Specification and Procurement of all Automation equipment & Control panels
- Associated Project Documentation including specifications and drawings
- On Site Commissioning with Site Supervision
- Training for Maintenance & Operating Personnel
- Maintenance Support

3. HISTORICAL HIGHLIGHTS

2005	-	Official opening of new Rivonia offices.
	-	Winner of top SI by Wonderware SA at X-Change Conference 2005.
	-	Awarded ArchestrA certification by Wonderware SA.
2004	-	Awarded top SI by Wonderware SA.
2003	-	Exceeded the R20 million sales figure.
2000	-	Purchased 50% shareholding in Phase 3 Manufacturing.
1999	-	Winner of Schneider productivity improvement award for Avmin Nchwaning underground conveyor system.
1998	-	Winner of Schneider productivity improvement award for Rand Water filter wash water recovery plant.
1997	-	10th Anniversary.
1995	-	Move to Bedfordview offices.
1994	-	Management buyout from Schneider Electric.
1991	-	Joined SAIMC as patron member.
	-	1st R1 Million contract – Iscor Sishen load out stations.
1987	-	RTS established as a 50% partnership with Telemecanique.

4. MAJOR PROJECT HISTORY

2005	-	Nestle, Harrismith – Infant Formula Plant.
	-	Coca-Cola, Wadeville – Canning Plant.
2004	-	Scaw Metals, Germiston – High Chrome Ball Plant, Rolled Steel Mill and Flat Steel Mill.
2003	-	Nestle Waters, Olifantsfontein – Bottling Plant.
	-	Seravac, Cape Town – Biotechnology Plant.
2002	-	SAB, Chamdor – Brewhouse Upgrade.
	-	Pioneer Seed, Rosslyn – Seed Sorting System.
2001	-	Iscor, Newcastle – Water Treatment System.
	-	Good Hope International Beverages, Cape Town – Juicing Plant.
2000	-	Fedmis, Phalaborwa – Filtration Plant.
	-	Lekoa Water Company, Sebokeng – Sebokeng Water Care Works.
1999	-	Rand Water, Zuiker-bosch – Filter Wash Water Recovery Plant.
	-	Distillers Corporation, Germiston – Amarula Plant.
1997	-	Cereal & Malt, Industria – Cereal & Malt Plant.
1995	-	Sentraalwes Co-Op, Orkney – Maize Grading Plant.

5. PARTNERSHIPS & MARKETS

Ram-Tec is a member of the following Organisations:

- South African Institute of Automation & Control (S.A.I.M.C.)
- Water Institute of South Africa (W.I.S.A.)
- Proudly South African (P.S.A.)

Ram Tec is a registered Systems Integrator with the following companies supplying PLC, SCADA and related automation products:

- Schneider Electric. (Modicon & Telemecanique)
- Rockwell. (Allan Bradley)
- Siemens.
- Shorrock (IFM ASi equipment)
- Wonderware (InTouch SCADA)
- Adroit

Ram-Tec works with the following companies in the implementation of turnkey low voltage electrical and automation systems:

- Mesco - Saudi Arabia (Electrical Switchboards and Control Panels).
- TI Technology (Racking and Cable Installation).

Ram-Tec's target markets sectors are:

- **FOOD & BEVERAGE**
- **MATERIALS HANDLING**
- **MINING & MINERAL PROCESSING**
- **PETRO - CHEMICAL**
- **UTILITY SYSTEMS**
- **WATER TREATMENT**
- **AUTOMOTIVE**

6. CORPORATE DETAILS

GENERAL COMPANY INFORMATION

HEAD OFFICE:

Name	:	Ram-Tec Systems (Pty) Ltd
Postal Address	:	**P.O. Box 4095** **Rivonia** **2128**
Physical Address	:	No 1, 8th Avenue Cnr Wessels Rd Rivonia 2128 South Africa
Telephone	:	**(011) 803 9254**
Fax	:	(011) 803 9490
E-mail & Website	:	**info@ramtec.co.za www.ramtec.co.za**
Managing Director	:	Jan Tumiel
Engineering Director	:	**Paulo De Sousa Gomes**
Commercial Director	:	Alberto Pontiggia

7. COMPANY ACTIVITIES

Ram-Tec undertakes projects on a complete turnkey basis, as a joint venture or as a subcontractor depending on the scope, size and relationship with the end user. The preferred option is to be completely responsible for the low voltage electrical control and instrumentation system. MES solutions can require joint activity due to the nature of system integration requirements.

The work usually requires co-ordination with either mechanical or process equipment suppliers as well as the client's project team.

7.1. Project Management and Quality Assurance

Ram-Tec's ensure each project undertaken is managed internally by our own Project Manager. The Project Manager must ensure that the project as a whole is meeting the customer's requirements from a time, cost and quality objective.

The Project Manager will ensure timeous procurement of materials and check that these meet the required standard. He will also liaise with other subcontractors who form part of the project and control the software development.

The project manager will liaise directly with the client to ensure that the software specification fully documents the process requirements of the plant and that these are fully understood. The project manager will ensure that all engineering conforms to the above specification, and that it is developed within the time requirements of the client. All engineering is undertaken to meet with ISO 9001:2000 Quality standards.

7.2. Low Voltage Electrical, Instrumentation and Network Design

Ram-Tec will do the full electrical design of MCC panels up to and including 400V and 525V supply. Actual manufacture of the boards is done by our associated Switchboard supplier.

Ram-Tec is able to specify appropriate Instrumentation which includes the generation of data sheets hook ups and loop drawings. In special circumstances, we can also produce P&I diagrams.

Ram-Tec will also do the complete field design including cable schedules and connection schedules. Ram-Tec makes use extensively of the latest ASi and Profibus technologies and is a leader in the implementation of these technologies.

7.3. Procurement of Equipment

Ram-Tec as a registered System Integrator with the companies listed above is able to source their equipment and software for the client directly and usually at better prices than the end user is able to obtain.

Our engineers receive regular training on these products to ensure that they can specify and program the equipment for the various projects they undertake.

7.4. PLC and SCADA Programming & Configuration

Once the definition of the process and design of the electrical and instrumentation system is complete, PLC programming and SCADA configuration in accordance with the standards agreed can begin.

The PLC application software starts with the generation of a written functional specification. This document describes the working of the system and contains cross references with the PLC I/O allocation as well as bit and word definition lists. Once the functional specification has been approved by the client, it is used to generate the software code. This code is quality checked in our offices prior to commissioning on site. An integral part of our software development is in house testing and quality test prior to commissioning of the system.

Before detailed configuration of the SCADA takes place, a ‘Thin Slice’ is prepared. The purpose of the Thin Slice is to set the software standard concepts of a drive, valve and sequence control through to the HMI system. The approved concepts then form the basis of the detailed software.

7.5. MES Configuration & Integration

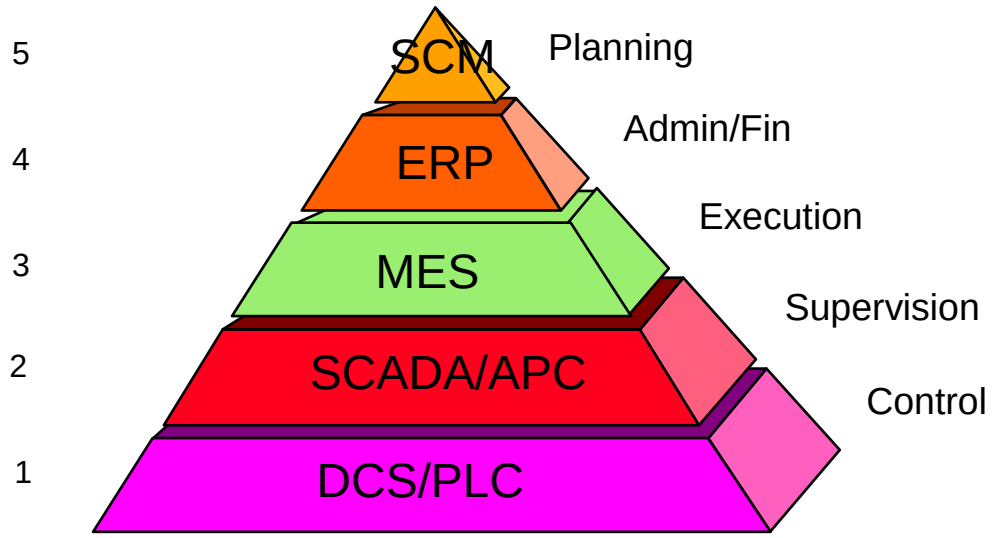
Manufacturing Execution Systems programming and configuration can occur at various levels depending on the project requirements. Utilizing a suite of available software programs together with appropriate hardware, MES configuration is easily possible at SCADA level while more complex type solutions are required in order to further implement MES through to the MRP (Materials Resource Planning), ERP (Enterprise Resource Planning) and SCM (Supply Chain Management) levels.

At the SCADA & Production management level the MES application can be one of:

- Feeding SCADA data into a Data Historian in order to generate on-line production reports enabling efficient running of the business based on direct source information.
- Monitoring and managing Overall Equipment Effectivenness (OEE)
- Energy Management
- Batch Production and Tracking

At higher levels as we enter the world of integrated MES, the modern trend is to strive towards Collaborative Manufacturing Management System solutions which in essence is defined as “the practice of managing by controlling the key business and manufacturing processes of a manufacturing enterprise in the context of its value networks”. This provides operational excellence, business agility and higher ROI to the process manufacturer.

Solution implementations of this nature require Ram-Tec partnerships with suitable IT System Integrators.



System Architecture - Integrated Manufacturing Model

7.6. System Commissioning

A basic Factory Acceptance Test (FAT) will be conducted in our offices on completion of the software engineering. This test will proof control system functionality in accordance with the functional specification and must be approved by the client before commissioning will commence.

Our offer is based on a fixed commissioning cost and period. The commissioning period has been based on the premise that our engineers have free and continuous access to the plant once commissioning begins. Commissioning has been based on a normal working day. If overtime or weekend work is required this will be based on double time.

7.7 Documentation and Drawings

Our documentation is supplied in an integrated electronic format on CD-Rom as well as in hard copy. The CD-ROM documentation interface is through a normal web browser such as Internet Explorer ™ using icon driven menus. Adobe Acrobat Reader ™, which is supplied with the documentation, is used to read and print the various sections. The integrated documentation format allows a single point of access to the separate documents listed below.

Typically the following documentation will be provided:

- PLC rack and I/O Layouts.
- Electrical Panel and PLC I/O to field loop Drawings.
- Functional Specification for the PLC system.
- PLC Program Printouts. (On CD-ROM only).
- SCADA System Operator Manuals.

The documentation is updated to the final as built once the system is commissioned. All documentation will be produced in English.

7.8 Training

We allow for training on the entire control system in our offer. Training certificates are issued to personnel who attend the course. The training includes application program training on the PLC for plant maintenance personnel as well as operator instruction on the use of the SCADA system.

Two types of course are provided. The first is aimed at plant maintenance personnel and is more technically detailed. The second caters for plant operating personnel. It is essential that the client's staff attend the Ram-Tec Systems training courses to ensure they are familiar with the sophisticated equipment installed and are able to obtain the maximum benefit there from. It is also a requirement to ensure the warranty offered.

7.9 After Sales Support

Ram-Tec is able to structure a suitable maintenance contract to provide the client with long-term backup as well as a guaranteed response times. The client can also choose to have an online modem support option installed. This will allow our engineers to remotely diagnose any fault, which may have occurred on the plant. Once a correct diagnosis has been made, the plant's maintenance personnel will be instructed telephonically on the appropriate measures to take.

The "modem" option means that speedy support and recovery can be made to a site particularly those, which are geographically located a distance away from our Johannesburg support centre.

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8. REFERANCE LIST OF WORK COMPLETED

Client	Description	Technology Used	Value
SCAW METALS - Germiston	Wheel Plant Automation, MCC/PLC Panels & Electrical Installation	Wonderware ArchestrA Automation with InTouch, Data Historian, Tracking System, Rockwell PLC	R6.8 Million
Nestle Harrismith	Baby Milk Powder Plant Upgrade	ASI Fieldbus, DeviceNet, Allen Bradley PLC automation, MCC/PLC Control Panels, Electrical installation Wonderware ArchestrA, InTouch, Active Factory, InSQL	R6.8 Million
SAB/Miller Breweries - Chambor	MGD Syrup Plant and ongoing 5 year plan upgrade to brewhouse facilities	ASI Fieldbus, Profibus, PLC automation, Electrical installation	R4.5 Million
SCAW METALS - Germiston	High Chrome Ball Plant & Hille Mill Plant – Furnaces & Sorting Plant Automation Systems, Plant wide Data Integration (incl lab analysis) & PLC change management system	Wonderware ArchestrA Automation with InTouch, Active Factory Reporting, InSQL Data Historian, Suite Voyager Web Portal, MDT Mass Autosave PLC, Industrial Ethernet, Rockwell PLC	R4.6 Million
Nestle Waters - Olifantsfontein	Pure Life Water Bottling Plant – new plant complete automation (Solutions Technology Project)	ASI Fieldbus, Profibus, Modicon PLC automation, MCC/PLC Control Panels, Electrical installation Wonderware InTouch, InSQL Data Historian, Active Factory Reporting, EMS Power	R2.5 Million
Nestle Babelegi	Niro 1 Tower & Niro 2 Tower upgrade & Wet Area for Niro 1	ASI Fieldbus, Profibus, Allen Bradley PLC automation, MCC/PLC Control Panels, Electrical installation Wonderware InTouch,	R3.5 Million
SEBOKENG Water Care Works Phase IV Ext	Complete Automation & Control System upgrade	Wonderware ArchestrA Automation with InTouch, Active Factory Reporting, InSQL Data Historian, Suite Voyager Web Portal, Modicon PLC	R4.1 Million
Techmach	NUTRO Manufacturing EPZ – Kenya Food Processing Plant	Wonderware InTouch SCADA, Quantum PLC, MCC/PLC Control Panels	R2.5 Million
Pioneer Seeds - Rosslyn	New sorting, dryer and shelling plants	Quantum PLC Engineering, MCC/PLC Panel	R2.5 Million
Seravac Laboratory	Biotechnology Plant Automation.		R2.5 Million
Coca Cola Canners Wadeville	SCADA/Barcode Printer system for Palletizer Lines – 4 off lines	Wonderware InTouch & Oracle Database interface. Markem Barcode label printers	R0.8 Million
Thuthuka Project Managers	Zincor Limestone Plant	Adroit SCADA, Quantum PLC Engineering	R0.6 Million
MITTAL Steel - VanderbijlPark	Management Information System(MIS) for the ESM Plant involving 6 furnaces	ArchestrA intelligent object automation and interface between PLC's and MSSQL Historian	R0.5 Million
Coca Cola Fortune Bloemfontein	Down Time Analysis & OEE Implementation for Bonacqua & Powerade Bottling Line	Wonderware InTouch & DT Analyst, PLC Engineering	R0.4 Million
Grinaker LTA	Tavistock Mine PLC & SCADA	Citect SCADA & PLC engineering	R0.3 Million
SFW	Canning Line Springs		R0.4 Million

9. CONTACTABLE REFERENCES

- Martin Volkwyn
  Scaw Metals
  011-842 9000

- Ockert van der Berg
  Nestle Harrismith
  058-622 2165

- Geoff Maud
  SAB Chamdor
  011-951 2600