



Integrated Management System

SIG-MQA-01

Açoforja – Forging Industry S/A.

Av. Engenheiro Januário Alvarenga Santos, 300 –

CEP 33.040-220 - Santa Luzia / MG

Summary

1	Introduction and Approvals	2
1.1	Preparation and Approvals	2
1.2	Alterations.....	2
2	The Organization.....	3
2.1	Mission of the Organization.....	3
2.2	Vision 2018 – 2020.....	3
2.3	Organizational Values	3
3	The Integrated Management System	3
3.1	Scope of the Integrated Management System.....	5
3.2	Structure of the Integrated Management System	5
3.3	Organizational Chart	6
4	Organization Context	7
4.1	Processes of the Integrated Management System.....	8
5	Integrated Management Policy	9
6	Objective of Quality and Environment	10
6.1	Planning of the Quality and Environmental Objectives.....	10
7	Resources.....	11
8	Organizational Knowledge	11
9	Communication.....	12
10	Execution of Services.....	14
11	Evaluation and Performance	18
12	Critical Analysis by the Senior Directors.....	19
12.1	Management review input	19
12.2	Outputs of Critical Analysis by Directors	20
13	Continuous Improvement	20
14	Bibliography.....	21

1 INTRODUCTION AND APPROVALS

This document has the objective of describing all the elements that builds the **Scope of Integrated Management System of Açoforja**, in compliance with the requirements of NBR ISO 9001 – Quality Management System – requirements of NBR ISO 14001 – Environmental Management System – requirements of AAR M-1003 and other business requirements.

The compliance with AAR M-1003 section J requirements is described at Annex 02 and 03.

1.1 PREPARATION AND APPROVALS

This document was prepared and approved, as follows:

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1.2 ALTERATIONS

This Manual is update annually.

Review	Data	Alteration
25	02/27/2019	Inclusion of the communication relating to the Quality Manual - Suppliers in the table, and notes 3 and 4 in the item 9
26	04/03/2019	Inclusion of Annex 02 - AAR Requirements.
27	11/18/2019	Review of item 1 Introduction and Approvals and 3.3 Organization Chart. Review of the table nomenclature in item 10: from Process Engineering to Product Engineering and inclusion of Process Engineering in Follow-Up/ Monitoring.
28	10/20/2020	Organization chart update in the item 3.3 and inclusion of Annex 03 - ITP AAR.
29	09/30/2021	Update of the Integrated Policy and the Organizational chart.
30	04/07/2022	Update of item 3.1 to adapt to the new scope of the Certification ISO 9001:2015 and ISO 14001:2015.

2 THE ORGANIZATION

AÇOFORJA – Forjaria S.A., is a private company created in 1973, located in the Vila Iris neighborhood, municipality of Santa Luzia – Minas Gerais and occupies an area of 212,000 m².

It produces forged products of up to 20 tons, in variable dimensions and lengths in mechanical engineering steel, carbon and bonded steel, according to the client projects, in addition to ABNT, SAE, DIN, AFNOR, UNI, client specification and company rules classifiers such as BV, ABS, LRS, DNV-GL, RINA and also works on the reforming of gearboxes.

The AÇOFORJA is committed in its **Quality** and **Environmental** Management System continuous program, which was integrated in your business development process.

The AÇOFORJA believes that with its maintenance we are continually improving our management capacity, making us apt for save growth, prepared for new goals and structured in a competent and participative management.

2.1 MISSION OF THE ORGANIZATION

OFFER SOLUTIONS IN INDUSTRIAL SERVICES AND PRODUCTS IN A SUSTAINABLE WAY TO OUR CUSTOMERS, SHAREHOLDERS, EMPLOYERS, SUPPLIERS AND COMMUNITY.

2.2 VISION

BE SUPPLIER REFERENCE IN SOLUTIONS FOR FORGED, HEAT TREATED AND MACHINED PRODUCTS AND SERVICES.

2.3 ORGANIZATIONAL VALUES

ETHICS
RESPONSIBILITY
COMMITMENT
TRANSPARENCY

3 THE INTEGRATED MANAGEMENT SYSTEM

The Integrated Management System of the Organization covers the Quality and the Environmental management systems and is established at all levels of the company and organized, based on the guidelines of the PDCA (Plan – Do – Check _ Act).

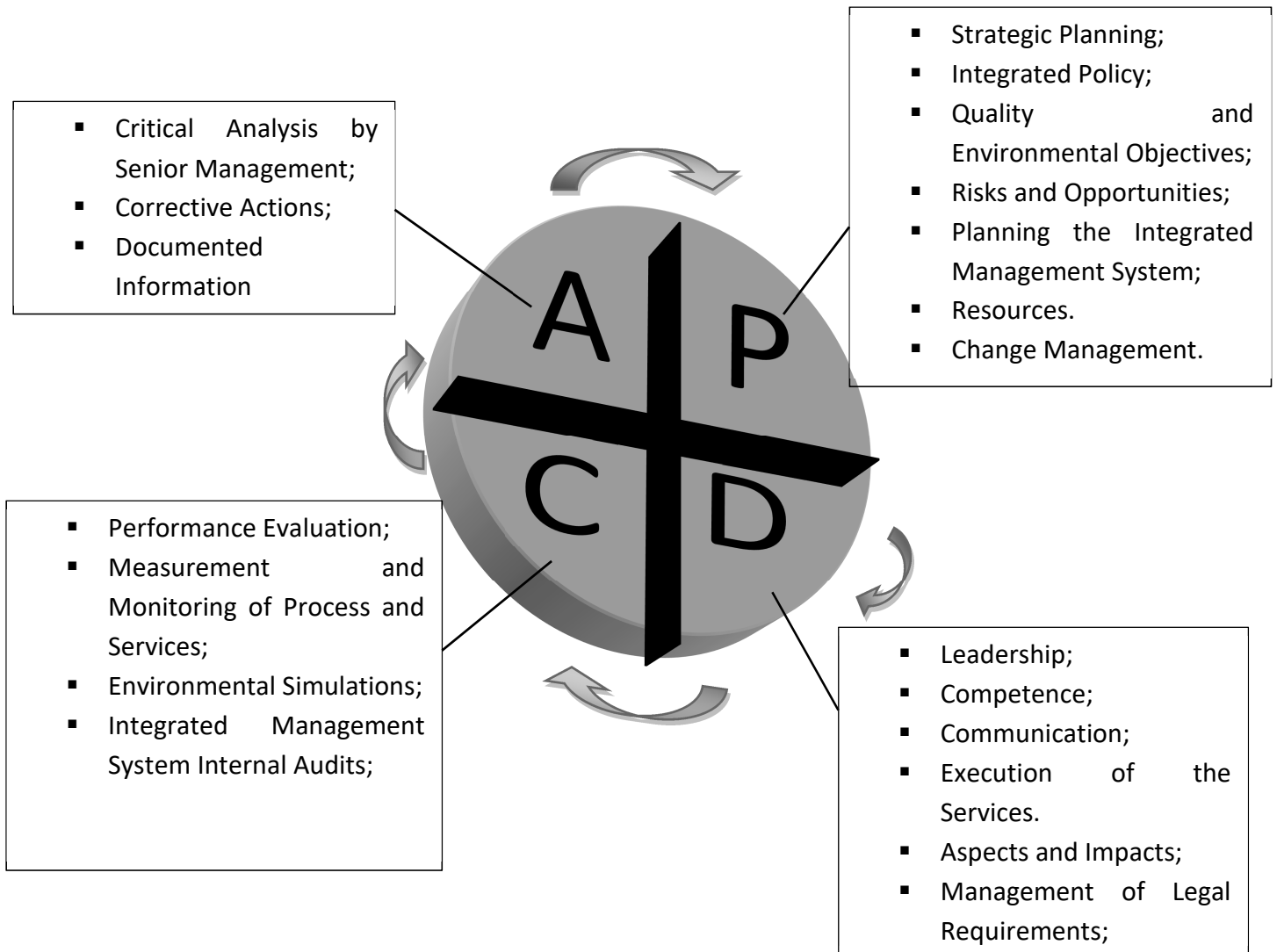


FIGURE 1 - INTEGRATED MANAGEMENT SYSTEM IN THE PDCA MODEL

3.1 SCOPE OF THE INTEGRATED MANAGEMENT SYSTEM

The Açoforja Integrated Management System, located at Av. Engineer Januário Alvarenga Santos, Vila Íris 300 – Industrial District 3, Santa Luzia – Minas Gerais, covers the following scope:

DESIGN, MANUFACTURING AND ASSEMBLY OF FORGED, HEAT TREATED AND MACHINED IN CARBON, LOW ALLOY AND STAINLESS.

The scope of the Integrated Management System of the Organization covers the process described in Annex 01 – Interrelationship between Processes.¹

The products and services derived from this scope are in accordance with item 10 of this Manual.

3.2 STRUCTURE OF THE INTEGRATED MANAGEMENT SYSTEM

The Integrated Management System of the Açoforja has the following structure:

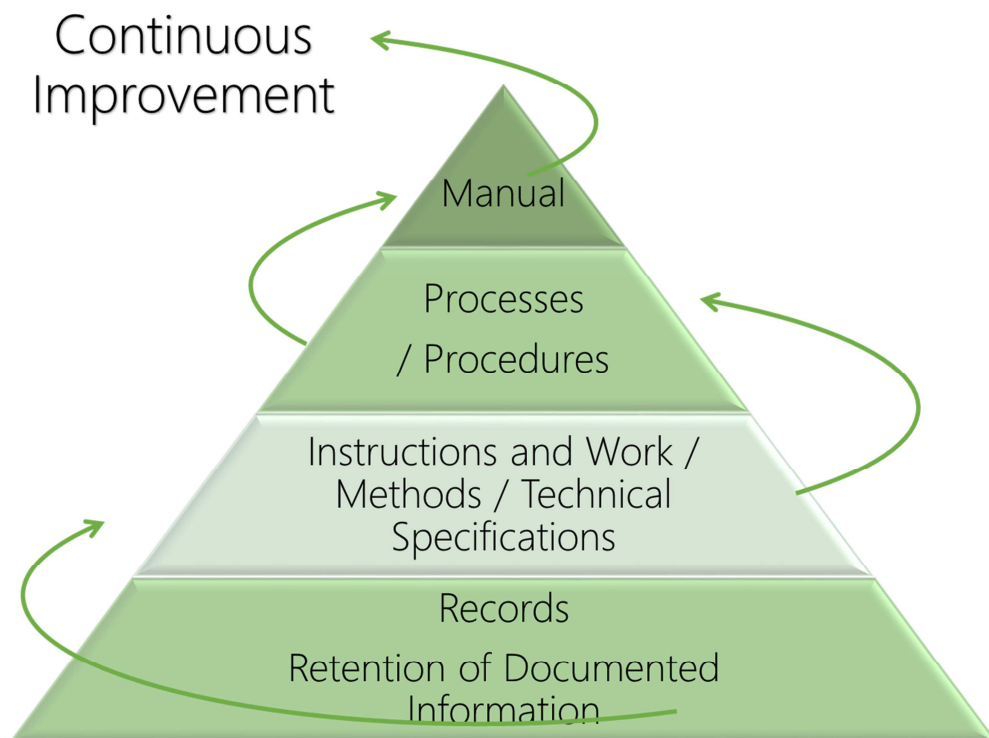


FIGURE 2 - STRUCTURE OF THE DOCUMENT SYSTEM

¹ The Annex 01 – Interrelationship between Processes is an independent document of this Manual – Integrated Management System, and can be revise without revision of the Manual.

3.3 ORGANIZATIONAL CHART

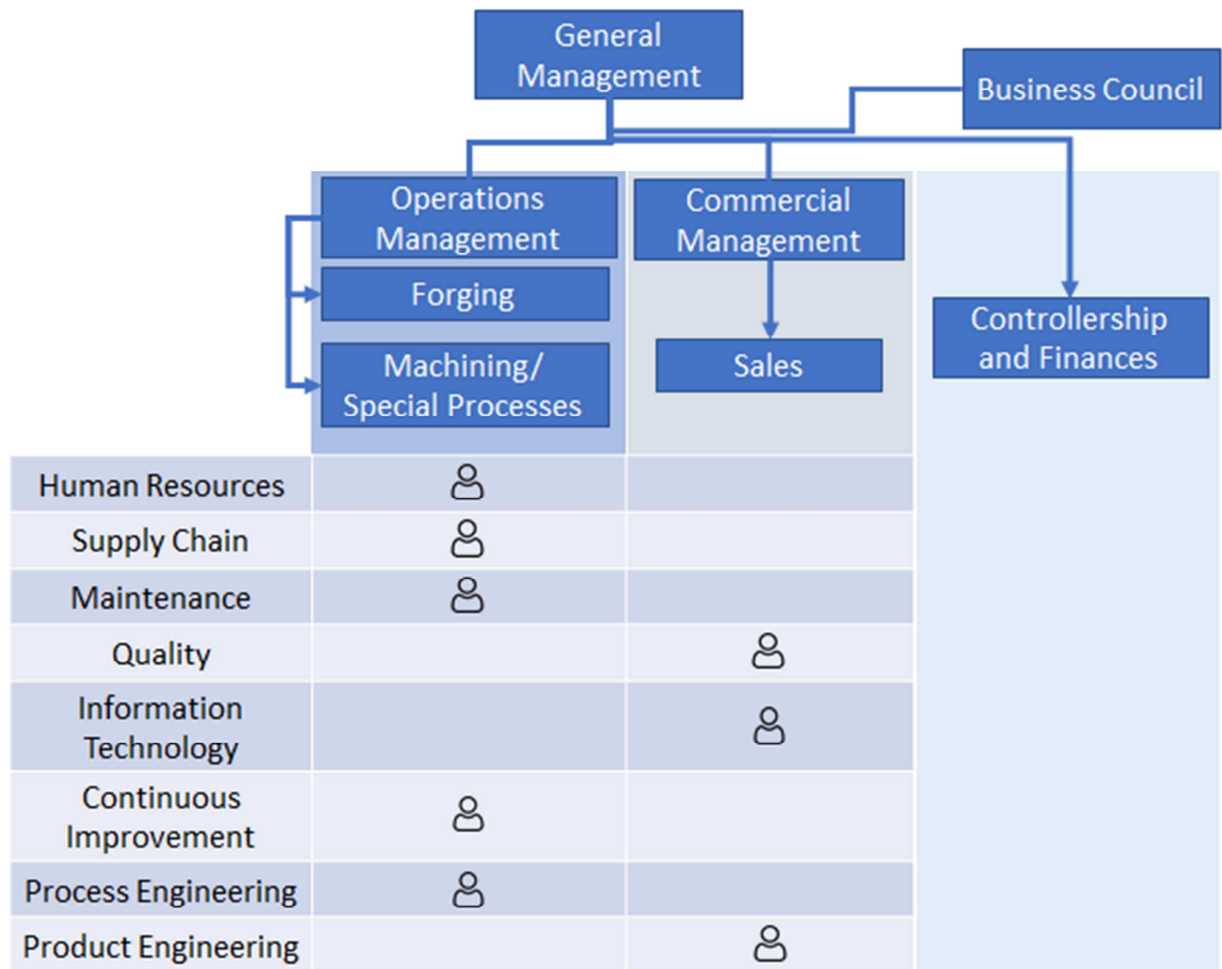
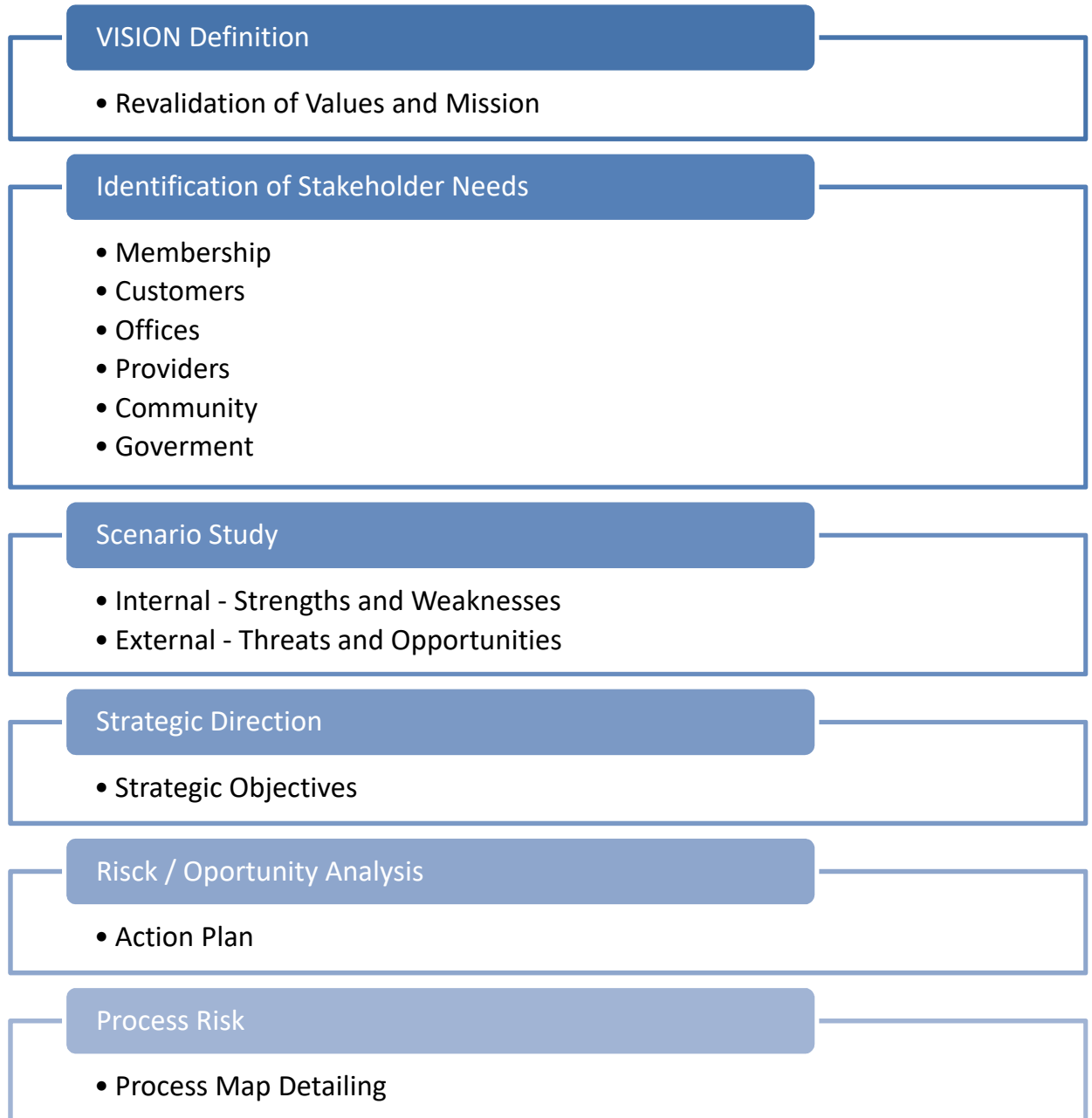


FIGURE 3 - ORGANIZATIONAL CHART

4 ORGANIZATION CONTEXT

The Senior Management defines at least every 2 years its Targeting, which is composed of the following steps:



4.1 PROCESSES OF THE INTEGRATED MANAGEMENT SYSTEM

The processes of the Integrated Management System cover all the departments defined in the Organization Chart and include the following elements:

- **Clients** - (Internal and external).
- **Inputs** - Elements / Information / Products / Services.
- **Processes** - Description of the activities involved in the process.
- **Outputs** - Elements / Information / Products / Services.
- **Suppliers** - (Internal and external).
- **Risks and Opportunities** - The risk and opportunities that are managed by the process (effective process management eliminates or mitigates risks and maximizes opportunities).
- **Process Performance** - How the process is monitored to manage its effectiveness and improvement.
- **Resources** – The resources necessary for the execution of the process.

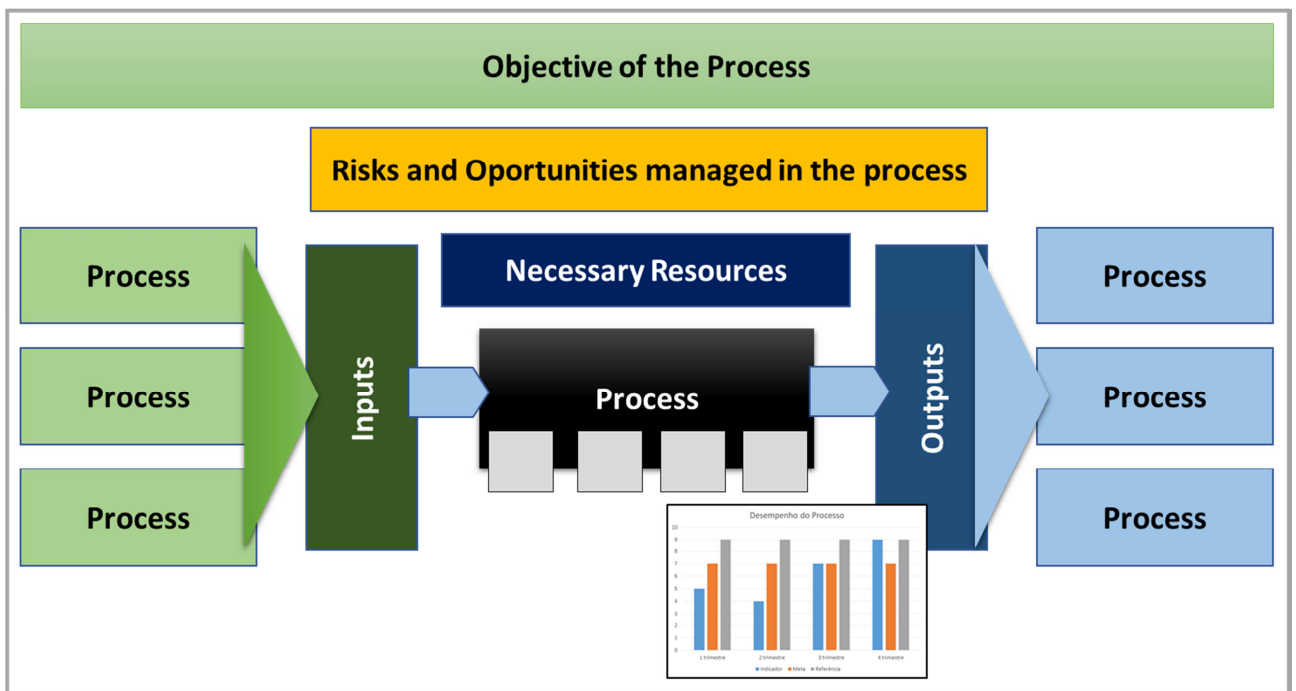


FIGURE 4 - SCHEMATIC REPRESENTATION OF THE PROCESS ELEMENTS

5 INTEGRATED MANAGEMENT POLICY

The Senior Management has defined the Integrated Management Policy of the Integrated Management System to give the guidance to entire organization.



FIGURE 5 - INTEGRATED QUALITY POLICY

6 OBJECTIVE OF QUALITY AND ENVIRONMENT

The Quality and Environment objectives are define by the Senior Management and are update every 2 years.

The definition of the Quality and Environment objectives takes into account all elements of the Organization Context and especially the Integrated Management Policy, covering:

- Measurable
- Defined according to applicable requirements
- Relevant to the conformity of products and services
- Elements to increase Customer Satisfaction
- Monitored
- Notices to the entire Organization
- Updated

6.1 PLANNING OF THE QUALITY AND ENVIRONMENTAL OBJECTIVES

For each quality objective a detailed action plan is define, that allows the management to ensure that the pertinent steps are implemented and that the Quality and Environment objectives are met.

The action plans include the following elements:

- Description of the Quality objective
- Element of the Management Policy that gave rise to the Quality and Environment objectives
- Responsible for the Plan of Action
- Responsible area
- Required Resources
- Action Description
- Description of how actions will be implemented
- Description of those responsible for each action
- Deadline for each action
- Verification of each action
- Status – Situation that each action is in

The Quality and Environmental department monitors the implementation of the Quality and Environment objectives.

7 RESOURCES

Açoforja provides and controls all the resources necessary for the management of the company, the main elements of resources are:

- Infrastructure
 - The Central Office
 - The Factory
- People
- Production Equipment
- Handling Equipment
- Financial
- Logistics
- Communication
- Softwares and Hardwares

All conditions of the work environment are guaranteed in compliance with the pertinent legal requirements, as well as to foster a climate where everyone feels engaged with quality and the promotion continuous improvement.

8 ORGANIZATIONAL KNOWLEDGE

Several elements contemplate the organizational knowledge of Açoforja, being:

- Strategic Planning
- Documented Information
- Projects
- Legal and others requirements
- Nonconformities
- Corrective Actions / Improvements
- Results of Critical Analysis by Senior Management
- Lessons learned
- Experience of everyone who is parts of the company

All knowledge of the Integrated Management System is protected and available where pertinent the consultation.

9 COMMUNICATION

Communications involving the operations of the Organization include:

What to communicate	Type	When	For whom²	How	Responsible
Scope of Integrated Management System	Internal / External	Whenever there in review it should be updated	Whole organization External audience	In the Integrated Management System Manual Website	Quality and Environmental department
Strategic Information	Internal	In the process of disseminating information	Senior Directors Managers	By electronic means or in the form of a report or in meetings	Senior Directors
Integrated Management Policy	Internal / External	When elaborated / revised	Whole organization External audience	Posters Training Company Website	Quality and Environmental department
Quality and Environment Objectives	Internal	When elaborated / revised	The entire organization at relevant levels	Meetings and Spreadsheets	Quality and Environmental department
Services / Customer Requirements	Internal / External	Negotiations with the customer	Client Budget Inspections	meetings Internal documents projects	Budget Commercial Quality Control
Information for procurement³	Internal / External	During the acquirement process	External Providers Internal Areas Supplies	Emails System	Supplies Areas that define acquisition requirements
Quality Manual – Suppliers⁴	Internal / External	When elaborated / revised	External Providers Internal areas Supplies	Link in the Purchase Order Email System / Site	Materials SQE
Supplier Performance Information	Internal / External	When evaluating performance	External Providers Internal Areas Supplies	Emails System	Quality and Environmental department

² Açoforja's management may decide to include other elements to receive the information, as appropriate in each case.

³ The environmental requirements were included in the purchase order.

⁴ The Supplier Manual gives to the external provider all the information about the systematics for qualification and performance evaluation.

What to communicate	Type	When	For whom²	How	Responsible
Organization Information	Internal	When set by Senior Directors	Whole organization	Intranet Email Printed document	Human Resources
Information regarding compliance with legal requirements / conditions	External	As defined in current legal requirement	Government and supervisory bodies	As defined un current law	Financial Human Resources Quality and Environmental department Senior Directors
Documented information of the Integrated Management System³	Internal / External	When the documented information is prepared or revised	Whole organization Customers External Provider	Intranet Email Printed document	Quality and Environmental department
Monitoring of the Integrated Management System	Internal	In the results evaluation meetings	Senior Directors	By means of indicators	Leadership
Marketing Information	Internal / External	When defined by the Directors	Customers and Market	Website Promotional events	Senior Directors
Information in case of emergency	Internal / External	In case of an emergency	Community and competent organ	Meeting official announcements	Senior Directors and Quality and Environmental department
Environment Performance	Internal / External	When collecting performance information	Whole organization External audience	Through the indicators Website	Quality and Environmental department

⁵ Documented information includes, but is not limited to: Integrated Management System Manual; Procedures; Process Maps; Work Instructions; Specifications; Projects; Management of Environmental Aspects and Impacts and record.

10 EXECUTION OF SERVICES

Açoforja's portfolio of services and products is diversified and cover several applications, such as:

- **Equipment**

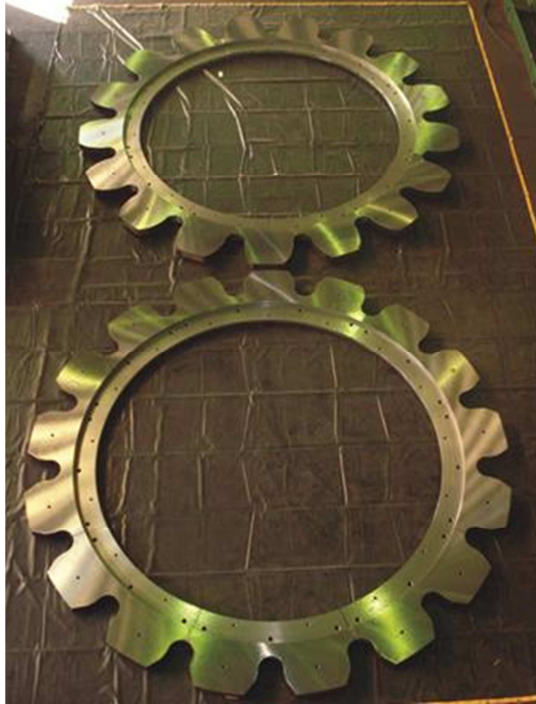


FIGURE 6 - DENTATED SEGMENTS

- **Sugar and Alcohol**



FIGURE 7 - MILLING SHAFT

- **Railway**



FIGURE 8 - USED AXLES

- **Steel Industry**



FIGURE 9 - APPLICATION FORGED IN SIDERURGY

- **Mining**



FIGURE 10 - RAIL

- **Oil & Gas**



FIGURE 11 - FORGING APPLICATIONS IN THE PETROLEUM SEGMENT

- **Naval**



FIGURE 12 - FORGED TO THE NAVAL SEGMENT

- **Cement**



FIGURE 13 –FORGED TO THE CEMENT SEGMENT

- **Wheels**



FIGURE 14 - WHEELS

Each service developed by Açoforja includes the following steps:



11 EVALUATION AND PERFORMANCE

The entire Integrated Management System is monitored through performance indicators.

Senior Directors sets the targets for each performance indicator. The leadership of each process monitors their processes and depending on the results, takes corrective or improvement measures

The results are presented at periodic meetings of the Senior Management.

The Quality and Environmental launches the planned provisions in Action Plan communicating to those involved that provide for the implementation of the actions that were been defined during the evaluation meetings.

12 CRITICAL ANALYSIS BY THE SENIOR DIRECTORS

The Critical Analyzes are carried out at least once a year, by the senior directors with the purpose of ensuring its continuous adequacy, sufficiency, effectiveness and alignment with the strategic direction of the organization.

12.1 MANAGEMENT REVIEW INPUT

The entry for the Senior Management meeting includes:

- Pending Previous Actions
- Validation of:
 - The mission
 - The vision
 - Values
 - The Integrated Management Policy
 - The Quality and Environmental objectives
- Changes:
 - Internal and external issues that are relevant to the Integrated Management System
 - Stakeholder needs and expectations, including legal requirements and other requirements
 - Significant Environmental Aspects
 - Risks and Opportunities
- Performance and effectiveness of Integrated Management System
 - Customer satisfaction
 - Satisfy the Quality and Environment Objectives
 - Performance of production processes
 - Corrective Actions (nonconformities)
 - Monitoring and Measurement of processes
 - Internal and external audit results
 - Performance of external providers
 - Compliance with the legal requirements and others requirements
- Sufficiency of resources
- Effectiveness of actions taken to address risks and opportunities
- Opportunities for improvement

12.2 OUTPUTS OF CRITICAL ANALYSIS BY DIRECTORS

The outputs of senior management review include:

- Conclusions on the continuing appropriateness of Integrated Management System
- Opportunities for improvement
- Any need for changes in the Integrated Management System
- Resource Need
- Actions, if necessary, when the objectives of quality and environment are not achieved
- Any implication for the strategic direction of the organization

The meetings of critical analysis by the senior directors are formalized in Minutes of Meeting, the pending generated are managed by Quality and Environment.

13 CONTINUOUS IMPROVEMENT

The purpose of the Integrated Management System is to promote continuous improvement in all its processes and thus provide customer satisfaction, business perpetuity, operational, financial and economic results and growth of the organization and the people.

The continuous improvement comes from several sources, the mains ones being:

- Strategic Planning
- Risks and Opportunities Management
- Analysis and evaluations of the Integrated Management System
- Lessons learned in operational processes
- Nonconformities and Corrective Actions
- Critical Review Meetings by Senior Management
- Contributions from each collaborator
- Among others

14 BIBLIOGRAPHY

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ABNT NBR ISO 14001:2015 – Environment Management Systems – Requirements