**PROJECT MANAGEMENT PLAN**

Summary:

Supplier:

This project involves the turnkey delivery of the BAP002 automated packaging equipment for bottles.

Company B

Customer:

Company A

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# BACKGROUND AND REFERENCES

## Delivery Object

The delivery object involves the creation of an automated packaging system BAP002, including the compressor.

The system will perform a series of automated operations related to bottle packaging, with the following main features:

1. **Bottle Feeding:** The system automatically picks up bottles one by one from a pallet and sends them to the packaging equipment.
2. **Bottle Handling:** Bottles are transported to the packaging station, where they will be packed.
3. **Box Packaging:** Once at the packaging station, bottles are placed into a cardboard box. The number of bottles per box is selectable from a list of predefined and fixed options to meet production needs.
4. **Box Shipping:** After packaging, the boxes are automatically sent to the palletizing machine (not included in the provided system).

This automated system helps optimize the packaging process, reducing manual intervention and improving operational efficiency.

Additionally, a spare parts kit will be provided to cover all needs during the one-year warranty period. The project also includes training sessions for operators, supervisors, and maintenance technicians, aimed at ensuring efficient use and proper maintenance of the BAP002 system.

Finally, complete electronic documentation will be provided, including operation, maintenance, and troubleshooting manuals

## Customer

The client is Company A, which will need to provide:

* An area of 20x50 meters, flat and illuminated with a light level of 300 lux/m².
* A main electrical line with a capacity of 75 KVA, 380 V ± 7% to power the BAP002 and the compressor.

## Expected Results

The main objective of the project is to complete it within the budget agreed upon with the client, providing a cost-effective solution that fully meets their operational needs.

As agreed with the client, the BAP002 system must be delivered to the site within 12 months from the contract signing. Installation and commissioning will be successfully completed within 14 months, allowing the client to officially accept the system within 15 months from the signing date.

The warranty on the system will be valid for 12 months starting from the official acceptance by the client.

## Project Class

This project has been classified as Class B following a thorough evaluation that considered several key factors. These include:

* The geographical distribution of the involved facilities and services
* Participation in consortia or complex subcontracting
* The intrinsic complexity of the project
* Previous experience with similar projects
* The overall economic value of the project
* The expected profit margin
* The project's relevance to the client
* The strategic importance of the client to the company

## Contractual Document

A series of fundamental contracts and agreements have been established to ensure proper planning and management of the project:

1. **Project Proposal:** Objectives, scope, timelines, and estimated costs for the system.
2. **Request for Proposal/Quote:** Technical and operational requirements of the system.
3. **Supply Contract:** Details related to the design, production, supply, and installation of the system, including the compressor and the spare parts kit.
4. **Service Contract:** For maintenance and support.
5. **Training Contract:** Specifications for the client’s personnel training.
6. **Warranty Agreement:** Terms of the warranty.
7. **Statement of Work (SOW):** Details of all activities, deliverables, and timelines for the project.
8. **Technical Specifications:** Complete technical details of the packaging system.
9. **Acceptance Agreement:** Criteria for testing and final acceptance of the system.

# PROJECT ORGANIZATION

## Product Breakdown Structure (PBS)

Below are all the main components, services, and associated activities required for the supply and implementation of the BAP002 system:

1. **Delivery** of 1 BAP002 system (including compressor)
2. **Spare parts kit** for system maintenance and operation
3. **Site preparation** for system installation, including the necessary infrastructure for integration
4. **Logistics** for transportation and delivery of the system and equipment to the client’s site
5. **Installation** of the BAP002 system at the client’s site
6. **Testing** to ensure the system operates according to agreed specifications
7. **Manuals** to ensure correct use of the system
8. **Training** for client personnel, including operators, supervisors, and technicians, to ensure proper management of the system
9. **Support for client personnel** (operators, supervisors, technicians)

## Activity Breakdown Structure (ABS)

Below are the main activities that make up the project:

* Detailed Design Specification
* Equipment Customization
* Equipment Manufacture
* Buy third party supply
* Inside integration & Test
* Site design
* Manuals Customization & Production
* Training set up
* Shipment
* Site set up
* Equipment installation
* Commissioning
* Acceptance Test
* Training
* Support to start
* Warranty
* Project Management

## Work Breakdown Structure (WBS)

The phases and activities of the project will be divided as follows:

**Production of BP002** (WP1):

* **Detailed Spec** (WP1.1): drafting of technical and functional specifications.
* **Costumization** (WP1.2):any product modifications (if requested by the client).
* **Manufacture** (WP1.3): manufacturing of the BAP002.
* **Buy compressor** (WP1.4): purchase of the compressor.
* **Inside integration & test** (WP1.5): integration of components and functional verification tests.
* **Spare Parts Kit** (WP1.6): preparation of the spare parts kit.

**Site Design** (WP2):

* **Layout design** (WP2.1): creation of the site layout for installation.
* **Electric Panel (Buy)** (WP2.2): purchase of the electronic panel.
* **Network Design** (WP2.3): design of the network infrastructure for the product’s operation.

**Manuals and Training** (WP3):

* **Manuals production** (WP3.1): creation of user and maintenance manuals.
* **Training Set Up** (WP3.2): planning and organizing training sessions.

**On Site Activities** (WP4):

* **Shipment** (WP4.1): organization of shipment to the installation site, including logistics management and safe transport of equipment.
* **Site Set Up** (WP4.2): preparation of the site for installation, ensuring all necessary infrastructure is ready.
* **Equipment Installation** (WP4.3): physical installation of the BAP002 at the prepared site.
* **Commissioning** (WP4.4): commissioning of the BAP002.
* **Acceptance Test** (WP4.5): execution of final acceptance tests with the client to verify that the BAP002 meets all contract specifications.
* **Support to Start** (WP4.6): provision of technical support during the initial phases of using the BAP002 to resolve any issues and ensure smooth operation.

**Training** (WP5):

* **Training for operators** (WP5.1): training sessions for operators who will use the BAP002 daily, ensuring safe and efficient use of the product.
* **Training for Supervisors** (WP5.2): specific training for supervisors, focusing on managing and monitoring daily operations of the BAP002.
* **Training for Technicians** (WP5.3): technical training for technicians responsible for maintenance and troubleshooting of the BAP002.

**Warranty** (WP6):

* **Warranty period** (WP6.1): management of the warranty period for the BAP002, providing support for any defects or malfunctions covered by the product warranty.

**Project management** (WP7):

* **Risk Contingencies** (WP7.1): Identification and management of risks associated with the project, with contingency plans to mitigate any unforeseen issues.
* **Management and Control** (WP7.2): overall supervision of the project, including planning, activity monitoring, budget control, and communication with the client.

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## Purchasing Plan

The Procurement Plan will include strategies for sourcing, managing suppliers, and monitoring purchases.

Below is a detailed guide for developing an effective procurement plan for the BAP002 project:

1. **Definition of Needs**

Identify and document all purchasing needs for the BAP002 project, including equipment components, the compressor, the spare parts kit, and any third-party supplies.

1. **Supplier Selection**

Select suppliers for each purchasing category. This phase will include researching and identifying qualified and reliable suppliers for each type of component or service.

Supplier evaluation will be based on criteria such as cost, quality, and delivery times.

1. **Order Management**

Manage and monitor purchase orders to selected suppliers, ensuring all details are correct and complete.

1. **Quality Control**

All purchased materials and components must meet the required quality standards.

1. **Cost and Budget Management**

All procurement expenses must be recorded and compared with the project’s planned budget.

1. **Documentation and Filing**

Documentation related to purchases should be stored in an organized manner, ensuring that all information is easily accessible and well-organized for future reference.

## Measure and Control Methodologies

Measurement and control methodologies will be essential for monitoring and managing the project's progress, ensuring that all activities are completed according to the specified requirements, timelines, and budget.

To this end, various methodologies and procedures will be used for this project:

* **Gantt Chart** to visualize activities over time, monitoring progress and any delays.
* **Risk Management** to monitor risks and minimize their negative impact on the project's execution. Mitigation plans will be developed to address identified risks and reduce their consequences.
* **Resource Management** to ensure that resources are sufficient for achieving the project's objectives. Special attention will be given to efficiency, with the goal of minimizing waste and optimizing the use of available resources.
* **Quality Control** to ensure that the work meets the standards established with the client. Regular inspections will be conducted, and defects or non-conformities identified during checks will be documented and resolved through appropriate corrective actions.
* **Feedback from Team Members and Stakeholders** to identify areas for improvement. This process will contribute to optimizing project processes and practices, allowing for continuous changes and improvements.
* **Earned Value Management (EVM)** to measure and control project performance by comparing planned value, earned value, and actual cost.

By implementing these measurement and control methodologies, the BAP002 project will be managed more effectively, ensuring that objectives are achieved on time and in accordance with the required quality standards.

## Reporting

Throughout the project management process, various reports will be developed. The frequency of these reports will depend on the project phase and stakeholder needs.

Risk reports must be updated whenever new information or significant changes arise.

Reports should be clear, concise, and easily understandable. They may be prepared in paper, electronic format, or a combination of both, depending on stakeholder preferences and company practices.

Each report should include an overview of key information, a summary of completed activities, identified issues, corrective actions taken, and future forecasts.

Reports must be distributed in a timely manner to project team members, key stakeholders, and anyone involved in project oversight and management.

Reports should be accompanied by discussions or meetings to clarify the data presented and address any issues that have arisen. These meetings can be used to review the reports, discuss corrective actions, and plan next steps.

Reports must be analyzed to identify trends, problems, and areas for improvement.

# SUPPORTING MANAGEMENT ACTIVITIES

## Risks Management

The project has a risk class B.

Below are the possible risks that may be encountered during the development of the project:

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## Quality Management

Quality management is a crucial element to ensure that the BAP002 project meets established requirements and client expectations. This process will include planning, controlling, and continuously improving the quality of deliverables, ensuring that they conform to the standards agreed with the client.

* **Identification of Quality Standards:** relevant quality standards for the project will be identified, and it will be defined how these standards will be met.
* **Prevention of Quality Issues:** measures will be taken to prevent quality problems during the execution of the project.
* **Verification of Quality Standards:** this process will include inspection, testing, and verification activities.

It is essential to maintain complete and organized documentation for successful quality management.

This will describe the objectives, processes, and quality procedures undertaken, as well as the results of inspections, tests, and audits, providing a detailed overview of the project's quality status.

## Development

The project has clear and stable requirements, with minimal risk of future changes. Additionally, the responsibilities of team members are well-defined.

These characteristics make the adoption of the **Waterfall** methodology particularly suitable.

## Configuration Management

Configuration Management is a critical component of the project, ensuring that all hardware and software configurations are managed effectively and consistently throughout the project's lifecycle.

The Configuration Manager will be responsible for overseeing all configuration-related activities and ensuring that established standards and procedures are followed.

Detailed and up-to-date documentation of configurations is essential to ensure traceability and facilitate problem resolution.

## Acceptance Criteria/Testing

Acceptance criteria and testing activities are crucial phases that determine the final success of the project.

These phases will ensure that the system not only meets technical requirements but also operates reliably and safely under the expected conditions.

1. **Performance Testing**

It is essential to conduct comprehensive performance tests designed to evaluate whether the system meets all operational specifications, such as operating speed, bottle handling capacity, and other critical features defined by the client.

The tests should simulate real-world usage conditions, allowing verification that the system operates with the required efficiency and reliability. Any discrepancies detected during these tests must be promptly addressed with optimization and adjustments, ensuring that the system fully meets expectations.

1. **Final Acceptance**

The client will perform a thorough evaluation of the system, which will include reviewing test results, verifying system functionalities, and confirming that all necessary documentation and training have been provided.

Once the client is satisfied, formal final acceptance will be granted.

# MASTER PLAN

The project is structured into several phases, starting with the detailed design and customization of the BAP002 system, which will be completed within the first few months of the contract.

Subsequently, the system will be produced and tested internally to ensure it meets all the required technical specifications. Concurrently, the procurement activities for components, including the compressor and the spare parts kit, will begin to ensure that all materials are ready for installation.

Once production is complete, the system will be shipped to the client's site within 12 months of the contract signing. The on-site installation phase will occur in the following two months, followed by the commissioning and testing of the system to verify its proper operation. By 14 months from the contract signing, the system will be fully installed and operational.

Final acceptance, which will take place within 15 months from the contract signing, will mark the completion of the project, with the client confirming that the system meets the contractual specifications.

From this point, a 12-month warranty period will begin, during which the supplier will provide technical support and manage any necessary maintenance interventions. Support manuals will also be provided to ensure proper use of the system.

The client must provide:

1. An area of 20x50 meters, flat and illuminated to 300 lux/m², necessary for the safe installation and optimal operation of the BAP002 system.
2. Availability of a main electrical line with a capacity of 75 KVA and a voltage of 380 V ± 7%, suitable to power both the BAP002 system and the associated compressor.

Below there is the GANTT chart of the project:

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# TECHNICAL BUDGET

## Costs/Revenues/Margins

The project price is **€1.450.000**.

A total budget of **€1.080.000,62** has been planned, covering all associated expenses, including design, production, installation, training, documentation, and post-sales support.

This results in an expected profit margin of approximately **€370.000**, which is about 25% of the product's selling price to the client company.

Project payments are divided based on milestones achieved, as outlined in the contract:

* **Initial Payment (Order):** €290.000, payable at the time of contract signing, allowing the commencement of activities.
* **Payment upon Delivery:** €290,000, to be paid at the time of delivery of the BAP002 system to the client's site.
* **Payment at the End of Installation:** €290,000, to be made once the installation of the equipment is complete.
* **Final Payment upon Acceptance:** €580,000, to be paid after the final acceptance by the client, confirming that the system meets the contractual specifications.

## External Costs Plan

The External Cost Plan will focus on managing expenses related to external suppliers and third-party services to maintain quality and delivery times, while minimizing the risks associated with dependence on external suppliers.

External expenses will be closely monitored to ensure they align with negotiated contracts and that costs do not exceed the planned budget.

## Invoicing and Cashing

Invoices will be issued in accordance with the contractual milestones, and timely collection is essential to support the project operations. The plan includes:

* **Invoicing:** Issued after achieving the contractual milestones (order, delivery, installation, final acceptance).
* **Collection:** Monitoring received payments to ensure availability of funds at each critical phase of the project.

## Economic Value Added (EVA)

Economic Value Added (EVA) measures the project's ability to generate value beyond operating and capital costs. It is calculated by subtracting the cost of invested capital from the project's net operating profit.

A positive EVA indicates that the project is creating additional economic value for the company.

In our case:

* **Price**: 1.450.000 €
* **Total Cost**: 1.080.000,62 €
* **Gross Margin**: about 370.000 €
* **Markup:** 0,34 (gross margin/total cost)