

Software Requirements Specification Template

This template is a suggestion to complete the Software Requirements Specification (SRS) assignment as well the process used.

Please send comments and improvement opportunities to ajs@isep.ipp.pt.

Acknowledgements:

Sections of this document are based on the book Software Requirements (Third Edition) by Joy Beatty & Karl Wieggers and in the ISO/IEC/IEEE 29148.

Template revision history

Version	Author	Description	Date
1.0	António Rocha	Initial version	2017-10-07
1.1	António Rocha	A few improvement details	2018-10-04
1.2	Jorge Santos	Minor improvements details	2023-10-18

AMAPP

SOFTWARE REQUIREMENTS SPECIFICATION - VERSION 1.0

HUGO COELHO;ILÍDIO MAGALHÃES;PAULO ABREU;PEDRO OLIVEIRA

1. Introduction	7
1.1 Purpose.....	7
1.2 Document conventions.....	7
1.3 Project scope.....	8
1.4 References.....	8
2. Overall description	8
2.1 Product Prespective	8
2.2 User classes and characteristics	9
2.2.1 Producer	9
2.2.2 Co-Producer (Consumer)	9
2.2.3 AMAP Administrators	9
2.2.4 System Admin.....	9
2.2.5 Non-Authenticated User	10
2.2.6 System	10
2.3 Operating environment	10
2.4 Design and implementation constraints	10
2.5 Assumptions and dependencies.....	11
3. System features.....	12
3.1 Use Case Diagram.....	13
3.1. Implement AMAPs (UC01)	13
3.2. Manage Products/Baskets (UC06)	14
3.3. Contact AMAP (UC10)	15
3.4. Login (UC11).....	16
3.5. Register (UC12)	17
3.6. Send Notifications (UC 13)	18
3.7. View/Search Products (UC14).....	19
3.8. View AMAPs (UC15).....	20
3.9. Manage Product/Basket Subscriptions (UC16)	21
3.10. View Subscriptions History (UC17)	22
3.11. View Delivery (UC18).....	23
3.12. View Order Payments (UC19)	24
3.13. Manage Orders (UC20)	25

3.14.	View Production and Sales Reports (UC21)	26
3.15.	Manage Membership in AMAP (UC23)	26
3.16.	See Products and Details from Other Producers (UC24)	27
3.17.	Manage Profile (UC22)	28
3.18.	Manage Users/Roles (UC02)	29
3.19.	Manage Subscription (UC03).....	30
3.20.	Manage Delivery Settings (UC04)	31
3.21.	Manage Filters Roles (UC05)	31
3.22.	View Subscription Orders (UC07)	32
3.23.	Manage AMAP Details (UC08).....	32
3.24.	Send questionnaires (UC09)	33
4.	Data requirements.....	34
4.1.	Logical Data Model	35
4.2.	Data dictionary.....	35
4.2.1.	Product.....	36
4.2.2.	Order	36
4.2.3.	Producer	36
4.2.4.	Co-Producer	37
4.2.5.	AMAP Administrator	37
4.3.	Reports.....	37
4.3.1.	Subscription and Payment Report	37
4.3.2.	Cycle statics reports.....	38
4.3.3.	Co-Producer purchase history.....	38
5.	Domain model.....	39
5.1.	Domain model overview	39
5.2.	User Management Context	40
5.3.	Product Management Context	40
5.4.	Order Management Context.....	40
5.5.	Subscription Management Context.....	40
5.6.	Relationships	41
6.	External interface requirements	42
6.1.	User interfaces.....	42
6.2.	Software interfaces	43
6.3.	Hardware interfaces	43
6.4.	Communication interfaces	43
7.	Quality attributes.....	44

7.1.	Usability.....	44
7.2.	Performance.....	44
7.3.	Security	44
7.4.	Safety.....	44
7.5.	Interoperability	45
8.	Internationalization and localization requirements	46
9.	Other requirements	47
10.	Process adopted for elicitation	48
10.1.	Stakeholders.....	48
10.1.1	AMAP Administrator	48
10.1.2	Producer	48
11.	Co-Producer	49
11.1.	Applied techniques	49
11.2.	Effort involved	50
11.3.	Constraints and limitations.....	50
12.	Product Backlog.....	51
13.	Appendix	54
13.1.	Appendix - Glossary	54
13.2.	Elicitation data detail.....	54
13.2.1	Formulário de Encomendas (Google Forms)	54
13.2.2	Mapa de entregas.....	56
13.2.3	Encomendas Co-Produtor	56
14.	Team Contributions	57

Document Approval

Name	Title	Date	Signature
------	-------	------	-----------

Revision history

Version	Author	Description	Date
1.0	<>	Initial version	<>

1. Introduction

1.1 Purpose

This document outlines the software requirements for a system aimed at enhancing collaboration between AMAP (Associação pela Manutenção da Agricultura de Proximidade) and other entities involved in CSA (Comunidade que Sustenta a Agricultura). The purpose of this system is to create an efficient platform to facilitate mandatory communications among the various target audiences identified by AMAP, focusing on a solution that supports the collaborative management of producers and consumers.

The system will serve a diverse range of stakeholders, including AMAP producers, zone managers, consumers, certification entities, and local authorities. The primary product covered in this document is the upcoming version of the AMAP web application, which will incorporate features enabling extensive interaction between these various groups.

This document is intended for a variety of readers, including software developers responsible for implementation, project managers overseeing collaboration, marketing staff promoting the solution, end users who will utilize the web application, testers ensuring quality and functionality, and documentation writers who will need to produce user guides and manuals.

1.2 Document conventions

- IEEE bibliographic citation style.
- All diagrams used to support project development, including domain models and use case diagrams, follow UML (Unified Modeling Language) notation.
- **Bold** text is used to highlight key concepts or terms.
- *Italicized* text denotes specific actions or important notes.
- Code snippets and commands are displayed in monospace font to distinguish them from the main text.
- **AMAP**: Associação pela Manutenção da Agricultura de Proximidade
- **CSA**: Comunidade que Sustenta a Agricultura.

1.3 Project scope

The scope of this project is to develop a software solution that supports the AMAP (Associação para a Mobilização de Alimentos e Produtos) [1], initiative by facilitating efficient and transparent processes for connecting local producers with consumers. This software is designed to automate and optimize essential operations such as order management, production scheduling, inventory control, and delivery coordination. By digitizing these workflows, the system will streamline AMAP's logistics, reduce food waste, and maintain a commitment to sustainability.

Key objectives include improving process efficiency, enhancing consumer satisfaction by simplifying ordering and delivery, and enabling AMAP to expand its operations while upholding its values of local consumption and community involvement. The software aligns with AMAP's mission to support local agriculture and foster community connections, minimizing environmental impact through demand-driven production and waste reduction. This project is an essential step in AMAP's strategy to sustainably grow its services and strengthen its community-focused model.

1.4 References

1. "AMAP," Moving Cause, [Online]. Available: <https://amap.movingcause.org/>

2. Overall description

2.1 Product Prespective

This product is designed to enhance the AMAP (Associação para a Mobilização de Alimentos e Produtos) initiative, a Portuguese organization that connects local producers directly with consumers. AMAP's core model is based on pre-ordering, where consumers place orders before the production cycle begins, ensuring that only the requested products are produced. This reduces food waste, supports local agriculture, and promotes sustainability. AMAP's principles include sustainability, transparency, local consumption, and community engagement.

The primary objectives of AMAP are to promote sustainable agricultural practices, provide consumers with transparency about the food they purchase, support local economies, and foster community ties between consumers and producers. The system being specified will automate processes like order management, production planning, inventory tracking, and delivery logistics, improving efficiency while maintaining AMAP's core values.

The current challenge lies in the logistics process, including product requisition, payments, and tracking. This system will address these issues by streamlining and automating key areas, allowing for smoother and more efficient management of orders and deliveries. With interconnected components such as **Order Management**, **Inventory Management**, **Production Planning**, and **Delivery Management**, the system will ensure a seamless flow from order to delivery, improving overall operational efficiency. This will help the AMAP to

better manage its processes and provide a more transparent and sustainable service to its consumers.

2.2 User classes and characteristics

2.2.1 Producer

Responsible for the production and management of products available within the AMAP system, the producer is the main supplier in the community. Producers update the platform with information about product availability, production cycles, and inventory, which allows consumers to know exactly what is available each quarter. In addition, they ensure that production aligns with the orders placed beforehand, minimizing waste and maximizing sustainability. This user class has permissions to manage and adjust production data, keeping operations synchronized with consumer orders.

2.2.2 Co-Producer (Consumer)

Also known as co-producers, consumers play an active role in AMAP's sustainable model by ordering products directly from producers. These users engage in a long-term commitment, supporting local consumption and securing regular orders, typically on a quarterly basis. They have access to detailed information about the products, origin, and production practices, and can track order status up to delivery. Although they do not have permissions to modify production data, this user class can access product inquiry and ordering functions, along with resources that support sustainable consumption.

2.2.3 AMAP Administrators

These users oversee the operational management of the system within AMAP. Acting as intermediaries between producers and consumers, they ensure data accuracy on the platform, address user issues or questions, and uphold AMAP's values of sustainability and transparency. AMAP administrators have the authority to edit and review system content, facilitate updates or changes in practices, and ensure that digital operations align with organizational objectives. They also handle user support issues and facilitate communication among the different stakeholders.

2.2.4 System Admin

With high-level permissions, the technical administrator is responsible for the overall configuration and maintenance of the system. They ensure the security, functionality, and stability of the platform, managing user permissions, updates, backups, and routine maintenance. This role is accountable for resolving complex issues and advanced settings, ensuring that the system runs efficiently, data is secure, and compliance and data protection practices are met.

2.2.5 Non-Authenticated User

Representing new visitors or those interested in AMAP, these users can browse the system without needing to register. Access is limited to general information about AMAP, its mission, values, and available products. However, they cannot place orders or access data exclusive to authenticated users. This class enables visitors to learn more about AMAP's purpose, encouraging engagement and fostering a path to becoming co-producers.

2.2.6 System

The System itself is responsible for sending automating notifications between users, such as notifying a Co-Producer that new product is available for delivery or is available or a payment date is due.

2.3 Operating environment

The application is designed for internet access by multiple users-Thus it must function across all operating systems. Its operations are focused in Portugal, meaning the application must comply with the European Union's General Data Protection Regulation (GDPR), which covers aspects such as cookie usage and data encryption during transit and at rest.

The application also requires that the system to be hosted in the cloud to provide reliable access for various AMAP locations and stakeholders. Additionally, all Personally Identifiable Information (PII) stored in the database must be encrypted at rest, ensuring that no individual can be identified by developers.

2.4 Design and implementation constraints

Since there is only existing software for information, but the objective is to build a new system from scratch, the development must focus on creating a fresh solution that addresses the specific needs of AMAP. This new system should be designed to handle all operational requirements, including user management, data processing, and integration with external services.

The UI should be user-friendly and accessible, ensuring that users from different backgrounds can interact with the system effectively. The backend must be designed to integrate smoothly with databases and authentication services, and future-proofed for scalability and flexibility. Additionally, as mentioned before, the system must adhere to privacy regulations, such as GDPR, ensuring data security and allowing users to manage their data preferences.

Finally, the system needs to support parallel operations, as multiple users—ranging from consumers placing orders to administrators managing logistics—will interact with the platform concurrently. This requires ensuring that the system can handle simultaneous requests without performance degradation, especially during peak times. These constraints

guide the development process to ensure that the final product is secure, functional, and compliant with AMAP's operational needs and regulatory requirements.

2.5 Assumptions and dependencies

The development and successful deployment of the AMAP system are based on the following assumptions and dependencies:

- **Internet Access:** Reliable internet access is assumed for all users, including producers, consumers, and administrators, to effectively use the web-based platform. Limited or disrupted access could impede system operations.
- **Cloud-Based Deployment:** The system must be hosted in the cloud to ensure availability and accessibility to various AMAP locations and stakeholders.
- **Responsive Design:** The web application should be responsive to support mobile and other device access, ensuring usability for users on different platforms.
- **Development and Operating Environment:** The project assumes a stable development and operating environment with appropriate software and hardware resources, including modern web servers and client-side devices with updated web browsers.
- **Regulatory Compliance:** Compliance with data privacy laws, such as GDPR, is assumed. Any regulatory changes could necessitate adjustments in system design and operation.
- **Sustainability Practices:** It is assumed that producers will maintain sustainable production practices, which align with AMAP's core mission. A shift in these practices could affect the system's impact and community engagement.
- **Community Engagement:** The success of the system assumes active participation from producers and consumers. Changes in user engagement levels could affect the project's effectiveness.

3. System features

This section provides a detailed overview of the primary functionalities that the system will offer to fulfil the operational needs of AMAP and CSA. Each feature has been designed to support core processes, enhance user experience, and ensure smooth interactions between producers, consumers, and administrators. These features are structured to align with the system's overall goals of efficiency, transparency, and sustainability.

A general overview of the use cases identified for the system can be seen in subchapter 3.1. This overview aims to facilitate understanding of the different stakeholders involved, as well as the number of use cases each stakeholder requires and the extent of their system interactions. The system to be developed will present a unified interface for users, in the form of a web application, represented in the diagrams as a black box.

Each feature detailed in the subchapters below may correspond to one or more product requirements. Additionally, each feature will be classified according to the QFD (Quality Function Deployment) scale as either normal, expected, or exciting, and assigned a priority level of low, medium, or high.

3.1 Use Case Diagram

Figura 1 shows a use case diagram for the system, using UML.

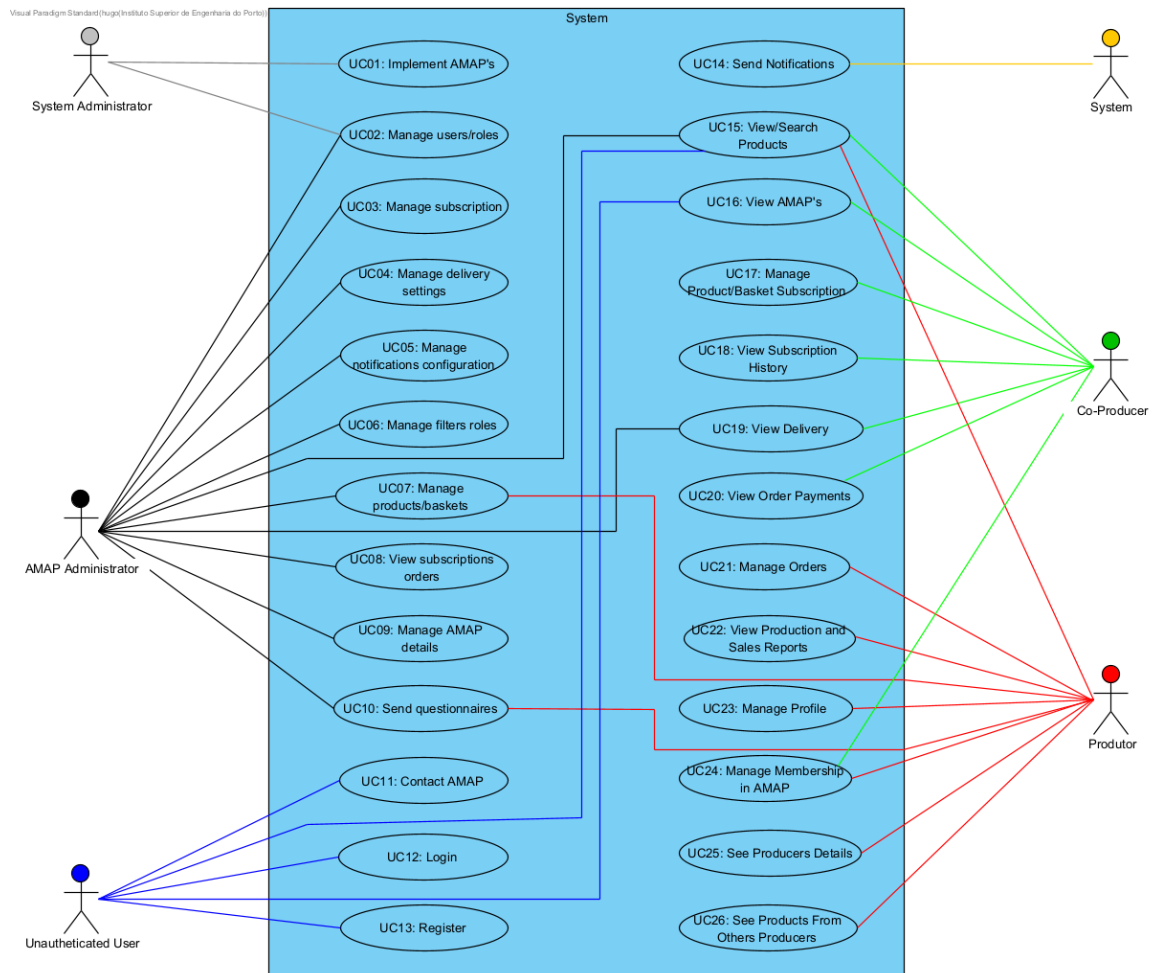


Figure 1 - Use Case Diagram

3.1. Implement AMAPs (UC01)

Description

Allows an admin to implement new AMAPs in the system. This includes setting up the initial AMAP configuration and managing subsequent configurations as needed, such as adjusting user roles, setting delivery schedules, defining product offerings, and configuring seasonal settings.

QFD	Expected
Priority	High

Stimulus/Response Sequences

1. The actor Admin navigates to the AMAP management section and selects "Create New AMAP".
2. The system displays a form for entering essential AMAP details, such as AMAP name, location, and primary contact information.
3. The actor completes the required fields for AMAP creation and submits the form.
4. The system verifies that all necessary fields are populated, saves the new AMAP to the database, and confirms successful creation.
5. The actor configures AMAP-specific settings (e.g., seasonal dates, subscription periods, subscriptions' first delivery dates).
6. The system prompts the admin to enter or select configuration options and saves the settings once confirmed.
7. The actor manages AMAP configurations over time.
8. The system displays the current configurations and allows modifications, saving any changes and updating relevant areas within the AMAP.

Functional Requirements

REQ-01: Create a new AMAP by entering essential details like name, location, and primary contact.

REQ-02: Configure AMAP settings, including seasonal dates, subscription periods and subscriptions' first delivery dates.

3.2. Manage Products/Baskets (UC06)

Description

AMAP Administrators can manage the product catalog and configure product baskets that will be available for consumers to order.

QFD	Normal
Priority	High

Stimulus/Response Sequences

1. The administrator navigates to the product management section.
2. The system displays options to add, update, or remove products and configure baskets.
3. The administrator modifies product details or basket configurations.
4. The system saves the changes and updates the product catalog.
5. The administrator navigates to the product management section.

6. The system displays options to add, update, or remove products and configure baskets
7. The administrator modifies product details or basket configurations,

Functional Requirements

REQ-03: Add new products to the catalog.

REQ-04: Update existing product information.

REQ-05: Deactivate products from the catalog.

3.3. Contact AMAP (UC10)

Description

Enables a non-authenticated user to contact an AMAP for potential membership as a "Producer" or "Co-Producer." This process allows the AMAP to evaluate the user's application based on role-specific criteria and capacity. If the user is interested in becoming a producer, they must submit a list of products they produce; the AMAP then assesses its current producer lineup and accepts or rejects the request based on product availability. If the user is interested in becoming a co-producer instead, the AMAP then assesses its current production capacity and accepts or rejects the request based on its ability to match the demand.

QFD	Expected
Priority	High

Stimulus/Response Sequences

1. The actor selects "Contact AMAP" and fills out an application form before clicking on "Send Message". The system forwards the form to the AMAP Administrator and notifies the actor that its application process is pending.
2. If the actor chooses the co-producer role, it specifies the desired product categories and quantities in the form.
 - The system forwards the form to the AMAP Administrator and notifies the actor that its application process is pending.
 - The AMAP Administrator evaluates the request based on the AMAP's current co-producer capacity.
 - If capacity is available, the AMAP responds with an acceptance invitation.
 - If full, it responds with a rejection.
3. If the actor chooses the producer role, it lists the products they currently produce in the text form.

- If AMAP has a primary producer and no secondary producer for any listed product, it accepts the request.
- If AMAP already has both a primary and secondary producer for all products mentioned, it declines the request.
- 4. The actor receives a response from the AMAP Administrator.
- 5. If accepted, the system prompts the user to proceed with registration.
- 6. If rejected, the system suggests that the user explore other AMAPs or roles.
- 7. The AMAP Administrator is notified about the result of the actor's application process.

Functional Requirements

REQ-06: Fill a form to contact an AMAP, signally the interest to join it in the "Producer" or "Co-Producer" role.

REQ-07: If choosing the co-producer role, send a list containing the desired product categories and quantities in free-form text

REQ-08: If choosing the producer role, send a list of products it can be produced in free-form text.

3.4. Login (UC11)

Description

The Login feature allows an non-authenticated user to log into the system to access personalized features and content. Upon successful login, the system assigns role-based access privileges based on the user's account role, granting access to specific features as per their permissions.

QFD	Expected
Priority	High

Stimulus/Response Sequences

1. An actor chooses clicks in "Log in".
2. If it chooses to log in using an Identity and Access Management Providers (IAM) (eg. Google, Facebook)", the actor enters the IAM account credentials or chooses to use enters its app account credentials.
3. If not, it logs into its account using its username and password.
4. The system validates the user's credentials or the response from the IAM, assigns role-based access privileges, and grants access to features permitted by the user's role.
5. If an actor enters incorrect credentials, the system displays an error message and prompts the user to try again.

6. When choosing to log in using the apps' credentials, if the actor selects "Forgot Password" option, the system prompts the user to enter their registered email address or phone number and sends a recovery link or code.

Functional Requirements

REQ-09: Authenticate users based on entered credentials and role privileges

REQ-10: Recover user account password via a recovery link or code sent to a registered email or phone number.

REQ-11: Allow users to optionally authenticate users using different Identity and Access Management providers.

3.5. Register (UC12)

Description

Enables an non-authenticated user to register an account in the app and select roles in multiple AMAPs. Through a single account, a user can register in various AMAPs and assume multiple roles within each AMAP, such as "Producer" and "Co-Producer." Strict role requirements ensure appropriate role assignments and permissions for each AMAP.

QFD	Expected
Priority	High

Stimulus/Response Sequences

1. An actor clicks on "Register".
2. It chooses to either register in the app using an IAM or to create an application account directly.
3. If selecting an IAM, the actor is first prompted to log into its IAM account.
4. If not, the actor is asked directly to select the roles it intends to assume a specific AMAP and to contact the AMAP, following the same role rules described in UC11 - Contact AMAP, before clicking on "Send".
5. If the application is accepted, the system creates the account and the actor is notified.
6. An actor (Producer, Co-Producer) logs in and clicks on "Change Roles" to edit its roles within an AMAP.
7. After editing its roles and filling the required information following the same role rules described in UC11 - Contact AMAP, before clicking on "Send Request".
8. If the request is accepted, the system updates the account and the actor is notified.

9. An actor (Producer, Co-Producer) submits incomplete or incorrect information, and the system displays an error message and prompts the user to complete all required fields with valid information.

Functional Requirements

REQ-12: Create a new user account

REQ-13: Allow users to register in multiple AMAPs under a single account.

REQ-14: Enable users to select and assign multiple roles within each AMAP.

3.6. Send Notifications (UC 13)

Description

The system autonomously sends notifications to relevant users (e.g., producers, co-producers, and AMAP administrators) in response to key actions or events within the application. Notifications ensure that all stakeholders remain informed of important updates, facilitating timely decision-making and coordinated actions.

QFD	Expected
Priority	High

Stimulus/Response Sequences

1. The actor detects a notification-triggering event or receives a notification request from a user action.
2. The system identifies the relevant recipients and sends the appropriate notification to the targeted users.

Functional Requirements

REQ-15: Automatically generate and send notifications to designated recipients based on valid triggers (e.g., user actions, system events, or changes in status).

3.7. View/Search Products (UC14)

Description

In this use case, the actor views the products added by the producers of the associated AMAP. The actor can use various filters to refine their search, such as filtering by AMAP, product type, producer, or product availability. This use case allows the actor to easily find and view the products that interest them most, offering a personalized browsing experience.

QFD	Expected
Priority	High

Stimulus/Response Sequences

1. The actor selects the "View Products" option.
2. The system retrieves a list of products associated with the AMAPs the actor is subscribed to.
3. The actor can apply filters to refine the search, such as filtering by AMAP, product type, producer, or availability.
4. The actor reviews the filtered results and can view more details about specific products.
5. The system provides additional information about a product upon request, including details about the producer, product type, and availability.

Functional Requirements

REQ-16: The actor can see the list of products from the AMAPs they are subscribed to, with filtering options for AMAP, product type, producer, and availability, enabling a personalized product list.

REQ-17: The actor can see detailed information about a product, including information about the producer, type, and availability.

3.8. View AMAPs (UC15)

Description

This use case allows the actor to view the available AMAPs that may interest them. Through this feature, the actor can access basic information about each AMAP, including products and associated producers.

QFD	Expected
Priority	High

Stimulus/Response Sequences

1. The actor selects the "View AMAPs" option.
2. The system retrieves a list of AMAPs and displays basic information about each one, including products, availability, and associated producers. The system also indicates whether the actor is associated with each AMAP.
3. The actor views the list and, if desired, applies filters (e.g., by location, producer, product type, or association status - whether the actor is already associated or not).
4. The actor reviews the filtered results, with an option to view more details about a specific AMAP.
5. The system provides additional information upon request, enabling the actor to make informed decisions about joining an AMAP or reviewing their current association.

Functional Requirements

REQ-18: The actor can see the list of available AMAPs, indicating whether they are already associated with each one, and can apply filters such as location, producer, product type, or association status to refine the displayed list.

REQ-19: The actor can see detailed information about a specific AMAP upon request, helping them decide whether to join or stay associated with an AMAP.

3.9. Manage Product/Basket Subscriptions (UC16)

Description

In this use case, the actor manages their subscriptions to products or baskets. The actor requests products previously added by the producer, and this request remains pending until confirmed by the producer. The actor can also edit or modify their requests according to system rules, such as quantity limits or deadlines for changes. This use case allows the actor flexibility in selecting and adjusting their subscriptions, while adhering to the conditions set by the producer.

QFD	Expected
Priority	High

Stimulus/Response Sequences

1. The actor selects the "Manage Subscriptions" option to edit or delete existing subscription requests.
2. The system retrieves the actor's current subscription requests, allowing them to view, modify, or delete their selections.
3. The actor modifies their request according to system rules.
4. The system validates the modification based on available stock, limits, and other conditions (e.g., deadlines).
5. The system updates the subscription details based on the changes made by the actor.
6. The system sends the updated request to the producer for confirmation.
7. The actor is notified that the subscription modification is pending producer confirmation.
8. The actor can also go to the "View Products" section and selects the product they wish to request from the "View Products" section.
9. The system validates the request against any quantity limits or conditions set by the producer.
10. The system sends the request to the producer for confirmation.
11. The actor is notified that the new subscription request is pending producer confirmation.

Functional Requirements

REQ-20: The actor can see the list of their existing product or basket subscription requests.

REQ-21: The actor can edit or delete their existing subscription requests. The actor should be able to modify quantities or remove items from their subscription list.

REQ-22: The actor can subscribe new products by accessing the "View Products" section and selecting the desired products.

3.10. View Subscriptions History (UC17)

Description

In this use case, the actor can view the history of all subscriptions made in the past. This feature allows the actor to access detailed information about previous subscriptions, including products and baskets requested, dates, and subscription statuses. This provides the actor with a comprehensive view of their participation history in the AMAP, supporting the management and tracking of past interactions.

QFD	Desirable
Priority	Medium

Stimulus/Response Sequences

1. The actor selects the "View Subscriptions History" option to view their past subscription details.
2. The system retrieves and displays a list of all previous subscriptions made by the actor, including details such as product or basket names, subscription dates, and current status (e.g., pending, confirmed, completed, canceled).
3. The actor reviews the list of past subscriptions and selects a specific subscription to view detailed information.
4. The system provides detailed information about the selected subscription, including the specific products or baskets requested, quantity, dates of request and confirmation, and subscription status.
5. The actor may filter or search the history by various parameters, such as product, date, or subscription status.

Functional Requirements

REQ-23: The actor can access to a history of all past subscriptions made within the AMAP, displaying relevant details such as products or baskets requested and subscription status, and allow the actor to filter the history by various parameters, such as product, date, or subscription status, to easily find specific past subscriptions.

REQ-24: The actor is able to detailed information for each past subscription, including product names, quantities, dates, and current status.

3.11. View Delivery (UC18)

Description

This use case allows the actor to view the delivery dates and locations for the products they requested. This feature is essential for the actor to have easy access to logistical information about their subscriptions.

QFD	Expected
Priority	High

Stimulus/Response Sequences

1. The actor selects the "View Subscriptions History" option to view their past subscription details.
2. The system retrieves and displays a list of all previous subscriptions made by the actor, including details such as product or basket names, subscription dates, and current status (e.g., pending, confirmed, completed, canceled).
3. The actor reviews the list of past subscriptions and selects a specific subscription to view detailed information.
4. The system provides detailed information about the selected subscription, including the specific products or baskets requested, quantity, dates of request and confirmation, and subscription status.
5. The actor may filter or search the history by various parameters, such as product, date, or subscription status.

Functional Requirements

REQ-25: The actor can access detailed information about scheduled deliveries, including date, address, and delivered products, and can filter deliveries by criteria such as date or delivery status.

REQ-26: The actor can see detailed information about the status of each delivery, such as "pending", "in progress", or "completed".

3.12. View Order Payments (UC19)

Description

In this use case, the actor can view the history of all payments made within the system. This history includes detailed information about each payment, such as date, amount, status (paid or pending), and association with specific subscriptions. This feature provides the actor with a clear, organized view of their payments, supporting financial tracking of their AMAP subscriptions.

QFD	Desirable
Priority	Medium

Stimulus/Response Sequences

1. The actor selects the "View Payments History" option to view details of their past payments.
2. The system retrieves and displays a list of all payments made by the actor, including details such as date, amount paid, payment status (paid or pending), and association with specific subscriptions.
3. The actor reviews the list of payments and selects a specific payment to view detailed information.
4. The system provides detailed information about the selected payment, including date, amount paid, payment status, and related subscription.
5. The actor may filter or search the history by parameters such as date, amount, or payment status.
6. The system updates the view based on the applied filters, showing only payments that meet the selected criteria.

Functional Requirements

REQ-27: The actor has access to the history of all payments made within the system, displaying relevant details such as date, amount paid, and payment status, and allow filtering of the payment history by date, amount, and payment status.

REQ-28: The actor can filter the payment history by parameters such as date, amount, and payment status.

3.13. Manage Orders (UC20)

Description

The actor (Producer) manages consumer subscriptions, allowing them to stay informed about the quantities required for each delivery cycle. This function assists the actor in aligning production with consumer demand and verifying payment status to ensure that only paid subscriptions are included in the production cycle. Additionally, the Actor can provide a payment confirmation in the system, which triggers a notification to the Co-Producer (Consumer) indicating that payment has been verified.

QFD	High
Priority	High

Stimulus/Response Sequences

1. The Actor views a list of consumer subscriptions for the upcoming production cycle.
2. The system displays detailed information for each subscription, including items, quantities requested, delivery schedule, and payment status.
3. The Actor reviews each subscription's status to determine production needs and verifies the payment status manually.
4. Once reviewed, the Actor can confirm the subscription as "confirmed for production" and mark the payment as verified, prompting a notification to the Co-Producer (Consumer) that payment has been successfully received.
5. The system records this confirmation and generates an updated production summary, assisting the Actor in organizing the required production quantities.

Functional Requirements

REQ-29: The actor can visualize list of consumer subscriptions, detailing items requested, quantities, delivery frequency, and payment status.

REQ-30: The Actor can manually verify and mark the payment status for each subscription.

REQ-31: The actor should mark subscriptions as "confirmed for production," indicating they will be included in the upcoming production cycle.

REQ-32: The Actor can review past consumer demand patterns, facilitating better planning and production adjustments.

3.14. View Production and Sales Reports (UC21)

Description

Actors (Producers and Administrators) access global reports on production and sales performance for each production cycle. These reports help them evaluate the effectiveness of operations, monitor sales trends, and make informed decisions for future cycles.

QFD	Normal
Priority	Medium

Stimulus/Response Sequences

1. The Actor accesses the reports section.
2. The system provides options to view production and sales reports specific to each cycle.
3. The Actor views the reports, noting relevant metrics such as production volume, sold items, and revenue for the current and past cycles.
4. The system logs each instance of report access for audit purposes.

Functional Requirements

REQ-33: The actor can access production and sales reports organized by production cycles for a comprehensive view of each period's performance.

Include clear and intuitive data visualizations to support actors in analyzing trends and making data-driven decisions.

3.15. Manage Membership in AMAP (UC23)

Description

This use case allows the actor to request membership in a new AMAP, with final confirmation pending approval by the AMAP Admin. The actor can also unsubscribe from an AMAP they are currently associated with; this cancellation will be reviewed, taking into account any pending requests or payments.

QFD	Normal
Priority	Medium

Stimulus/Response Sequences

1. The actor selects the "View AMAPs" option.
2. The system retrieves a list of AMAPs and displays basic information about each one, including products, availability, and associated producers. The system also indicates whether the actor is associated with each AMAP.
3. The actor selects an available AMAP to request membership or chooses to unsubscribe from an AMAP they are currently associated with.
4. The system validates the membership request details, confirming the actor's eligibility based on the selected AMAP's criteria.
5. The system sends the membership request to the AMAP Admin for approval.
6. The system provides a confirmation message to the actor, informing them that their request is pending approval by the AMAP Admin.
7. The actor can also choose to unsubscribe from an AMAP they are associated with.
8. The system enables the actor to confirm the unsubscribe request, which will be reviewed for any pending requests or payments.
9. The system notifies the actor of the pending status of their cancellation request, until it is reviewed and processed by the AMAP Admin.

Functional Requirements

REQ-34: The actor can request membership in a new AMAP or unsubscribe from an AMAP they are currently associated with.

3.16. See Products and Details from Other Producers (UC24)

Description

The actor can view detailed information about other producers and their products within the AMAP community. This allows them to explore collaboration opportunities, such as creating product baskets, cross-selling, or diversifying their offerings based on complementary products from other producers.

QFD	Normal
Priority	Medium

Stimulus/Response Sequences

1. The actor accesses the producer directory.
2. The system displays a list of other active producers, including details about their location, practices, certifications, and available products.
3. The actor reviews the details of other producers, including the types of products they offer.
4. The actor selects a producer to explore the products offered.
5. The system lists products from the selected producer, showing product names, descriptions, prices, and availability.
6. The actor may decide to explore collaboration opportunities, such as bundling products with other producers, offering complementary items, or diversifying their own product offerings.

Functional Requirements

REQ-35: The actor is able to access the list of all active producers and their details, including location, farming practices, certifications, and available products.

REQ-36: Actors can explore collaboration opportunities, such as bundling products with complementary items from other producers, or organizing joint offerings.

3.17. Manage Profile (UC22)

Description

The actor manage their profile to update personal information. This this includes options to add, edit, deactivate products, and manage certifications and payment preferences. However, any changes to the product inventory must be confirmed by the AMAP administrators before they are visible to consumers.

QFD	Normal
-----	--------

Priority	Medium
----------	--------

Stimulus/Response Sequences

1. The actor opens the profile management section.
2. The system displays the actor's current profile information and, for the actor, an inventory of products.
3. The actor edits profile details, such as contact information, uploads certifications (e.g., organic producer certificates), modifies payment preferences, and manages their product inventory.
4. The actor submits product updates (additions, modifications, or deactivations) for AMAP administrator review and approval.
5. The AMAP administrator reviews the product updates and either approves or rejects them.
6. The system notifies the actor of the AMAP administrator's decision and updates the product inventory accordingly.
7. The system validates the changes, confirms updates, and securely saves modifications.

Functional Requirements

REQ-37: The actor is capable of view and edit profile details, including address, contact information, and other personal data.

REQ-38: The actor can upload important documents, such as organic certification or other credentials, to verify their qualifications.

REQ-39: The actor can specify or modify payment preferences, including details for receiving payments, such as bank account information or preferred payment methods.

3.18. Manage Users/Roles (UC02)

Description

AMAP Administrators can manage user accounts and assign roles to ensure proper access and functionality, and answer to user requests to join AMAP.

QFD	Normal
Priority	High

Stimulus/Response Sequences

1. The actor accesses the user management section.

2. The system displays a list of users and their roles.
3. The actor assigns or removes user roles as needed.
4. The systems save the changes and updates the user access.
5. The system displays a list of user requests to AMAP Productor or Co-productor.
6. The actor selects the user request.
7. The system shows the user info and product (in case of Productor)
8. The actor accepts or rejects the request
9. The system saves the request response

Functional Requirements

REQ-40: Add new a role to a user.

REQ-41: Remove a role from a user.

REQ-42: Answer to user requests to join AMAP as Productor or Co-productor

REQ-43: Notify user from decision

3.19. Manage Subscription (UC03)

Description

AMAP Administrators manages subscription periods and related rules to ensure clear and structured seasonal production management for producers.

QFD	Normal
Priority	High

Stimulus/Response Sequences

1. The actor accesses the subscription management section.
2. The system displays current and planner seasonal production schedules.
3. The actor clicks on add subscription period
4. The system displays subscription start date, period and the limit of time to close subscriptions.
5. The actor inserts the required information.
6. The system registers the subscription period

Functional Requirements

REQ-44: Add new subscription period

REQ-45: Updata a role from a user.

3.20. Manage Delivery Settings (UC04)

Description

AMAP Administrators manages subscription periods and related rules to ensure clear and structured seasonal production management for producers.

QFD	Normal
Priority	High

Stimulus/Response Sequences

1. The actor accesses the delivery setting panel
2. The system displays the current delivery configurations, frequency of delivery, local and time.
3. The actor updates the required information
4. The system updates the delivery settings

Functional Requirements

REQ-46: Update the delivery settings

3.21. Manage Filters Roles (UC05)

Description

AMAP Administrators manage the configuration of filters and roles within the system to control user access and data visibility.

QFD	Normal
Priority	High

Stimulus/Response Sequences

1. The actor navigates to the filter's roles management panel.
2. The system displays current filters and roles configurations
3. The actor selects and modifies filter criteria.
4. The system saves the filters and roles settings.

Functional Requirements

REQ-47: View current filters and role configurations.

REQ-48: Modify filter criteria and role permissions.

3.22. View Subscription Orders (UC07)

Description

AMAP Administrators can view and monitor all subscription orders placed by consumers to ensure proper tracking and management.

QFD	Normal
Priority	Medium

Stimulus/Response Sequences

1. The actor accesses the subscriptions orders section
2. The system a list of active and completed subscription orders
3. The actor selects a specific order to view detailed information
4. The system shows the detailed view, including product, quantity, payment and status

Functional Requirements

REQ-49: Display all active and completed subscription orders.

REQ-50: Provide detailed information for each subscription order.

REQ-51: Allow filtering and sorting of subscription orders by date, status, or consumer.

REQ-52: Provide detailed information for each subscription order.

REQ-53: Generate reports based on subscription order data.

3.23. Manage AMAP Details (UC08)

Description

AMAP Administrators have the capability to manage and update information related to the AMAP, including location details, contact information, and member data.

QFD	Normal
Priority	High

Stimulus/Response Sequences

1. The actor navigates to the AMAP details management section.
5. The system displays current AMAP information.
6. The actor edits or updates the details as needed.
7. The system saves and confirms the changes

Functional Requirements

REQ-54: View current AMAP information.

REQ-55: Update location details and contact information.

3.24. Send questionnaires (UC09)

Description

AMAP Administrators can create and send questionnaires to gather feedback and information from consumers about new products.

QFD	Normal
Priority	Medium

Stimulus/Response Sequences

1. The actor navigates to the questionnaire management section.
2. The system displays options to create, edit, or select an existing questionnaire.
3. The actor configures the questionnaire and chooses the target recipients.
4. The system sends the questionnaire to the selected recipients and provides confirmation.

Functional Requirements

REQ-56: Create and customize questionnaires to new products.

REQ-57: Send questionnaires and track their delivery status.

REQ-58: Provide a summary report of responses received.

4. Data requirements

The team gathered data from interviews with multiple stakeholders with the results described below:

- **Product Data:** This is essential for the catalog and includes fields such as product name, description, price, available quantity, and the availability date. Producers are responsible for creating and managing product data, while AMAP administrators authorize and activate products. Consumers interact with this data through the catalog to make purchase decisions. Product records will likely be structured, potentially with images to enhance user experience.
- **User Data:** This encompasses information about registered users and their roles, including Producers, Co-Producers, AMAP Administrators. The AMAP administrators manage these roles and permissions, while the system uses this data for authentication and access control. User data records include fields like username, securely stored password, email, and role.
- **Order Data:** The system handles data related to product orders, including order ID, co-producer ID, product ID, quantity, order date, and delivery schedule. Co-Producers place orders, Producers fulfil them, and the system processes and tracks these transactions. Order data is structured and references user and product records to maintain relationships within the data model.
- **Inventory Data:** This data tracks each product's available stock, which Producers update regularly. The system monitors stock levels and sends notifications when quantities are low, allowing AMAP administrators to authorize backup products when necessary. Inventory records link directly to product data to maintain up-to-date availability for consumers.
- **Notification Data:** Notifications are generated by the system to alert stakeholders, such as notifying producers when stock is low or notifying administrators of new membership applications.
- **Membership Data:** This includes records related to AMAP membership applications and affiliations. Co-Producers submit membership applications, and AMAP administrators review them, approving or rejecting based on eligibility. Membership records reference user data and include the application's approval status.

4.1. Logical Data Model

This section provides a data model representing the system's core business operations, including product registration, order management, and delivery scheduling. The model includes four primary components: the **Backend**, **Web Application**, **Database**, and **Authentication System**. The **Backend** is responsible for handling the business logic and provides a set of RESTful APIs that serve as the primary interface for the system's other components. The **Web Application** component enables users to browse the catalog, view product details, and make purchases, while producers can manage their offerings and stock availability. The **Database** securely stores all essential data, including product information, user profiles, and transaction records, ensuring data integrity and accessibility. The **Authentication System** manages user authentication and authorization, protecting sensitive information and regulating access levels across the application. Together, these components interact through well-defined API calls, ensuring real-time data synchronization and a seamless user experience.

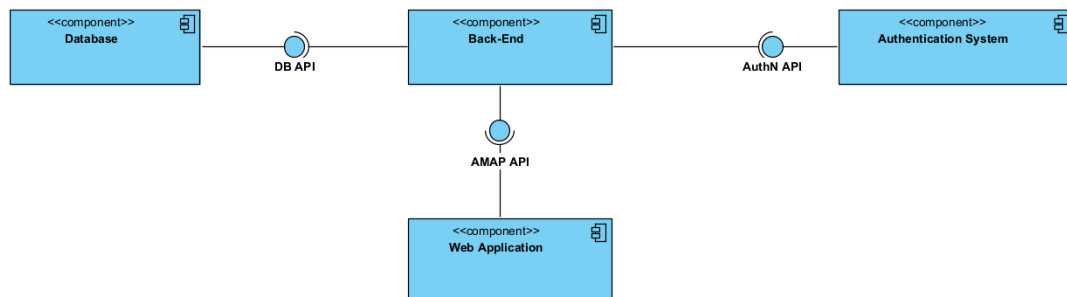


Figura 1 - Logical Data Diagram

4.2. Data dictionary

This section outlines the key data structures that the system will manage, essential for supporting the business operations of the AMAP platform. These structures were designed based on the functional requirements derived from interviews with stakeholders. They encompass the data elements related to products, producers, co-producers, orders, and AMAP admins. The following tables detail the composition of these data structures, providing a clear overview of the data types and relationships that will be processed and stored within the system to ensure efficient operations and interactions among all users.

4.2.1. Product

Field Name	Data Type	Example
Name	Text	Banana
Description	Text	Bananas da Madeira
Price	Number	1.20€/kg
Available maximum quantity	Number	100 kg
Availability date	Date	10/11/2024

4.2.2. Order

Field Name	Data Type	Example
Order ID	ID	5001
Co-Producer ID	ID	C1001
Product ID	ID	001
Quantity	Number	10kg
Total Price	Number	12.00€
Order Date	Date	01/11/2024
Delivery Frequency	Text	Weekly
Order Status	Text	Confirmed

4.2.3. Producer

Field Name	Data Type	Example
Producer ID	ID	001
Name	Text	Bright Godwin
Contact Information	Text	BrightGodwin@example.com, 912345678
Products Offered	List	[Banana, Maçã]
Approval Status	Text	Aproved

4.2.4. Co-Producer

Field Name	Data Type	Example
Co-Producer ID	ID	C001
Name	Text	Obama Ribeiro
Contact Information	Text	ObamaRibeiro@example.com, 942445778
Purchase History	List	[Banana, Maçã]

4.2.5. AMAP Administrator

Field Name	Data Type	Example
Admin ID	ID	C001
Name	Text	Aboubacar Katty
Role	Text	Product Owner
Contact Information	Text	AK@example.com

4.3. Reports

This section provides an overview of the different reports that will be generated by the system, including details on subscriptions, payments, cycle statistics, and consumer purchases. These reports are essential for tracking financials, monitoring the performance of each cycle, and keeping co-producer informed about their purchasing activities. Below are examples of the types of reports and their key elements:

4.3.1. Subscription and Payment Report

Subscription ID	Co-Producer Name	Product Name	Subscription Date	Amount Paid	Payment Status
001	Aldo Josué	Banana	01/10/2024	30.00€	Paid
002	Álvaro Madureira	Maçã	03/10/2024	25.00€	Pending

4.3.2. Cycle statics reports

Cycle ID	Product Name	Total Quantity Ordered	Delivery Frequency	Available Quantity	Delivery Date
001	Banana	200kg	Weekly	100kg	10/11/2024
002	Apple	150kg	Bi-weekly	75kg	12/11/2024

4.3.3. Co-Producer purchase history

Product Name	Producer Name	Quantity Purchased	Purchase Date	Payment Status
Banana	Producer A	20kg	01/10/2024	Paid
Apple	Producer B	15kg	01/10/2024	Pending

5. Domain model

5.1. Domain model overview

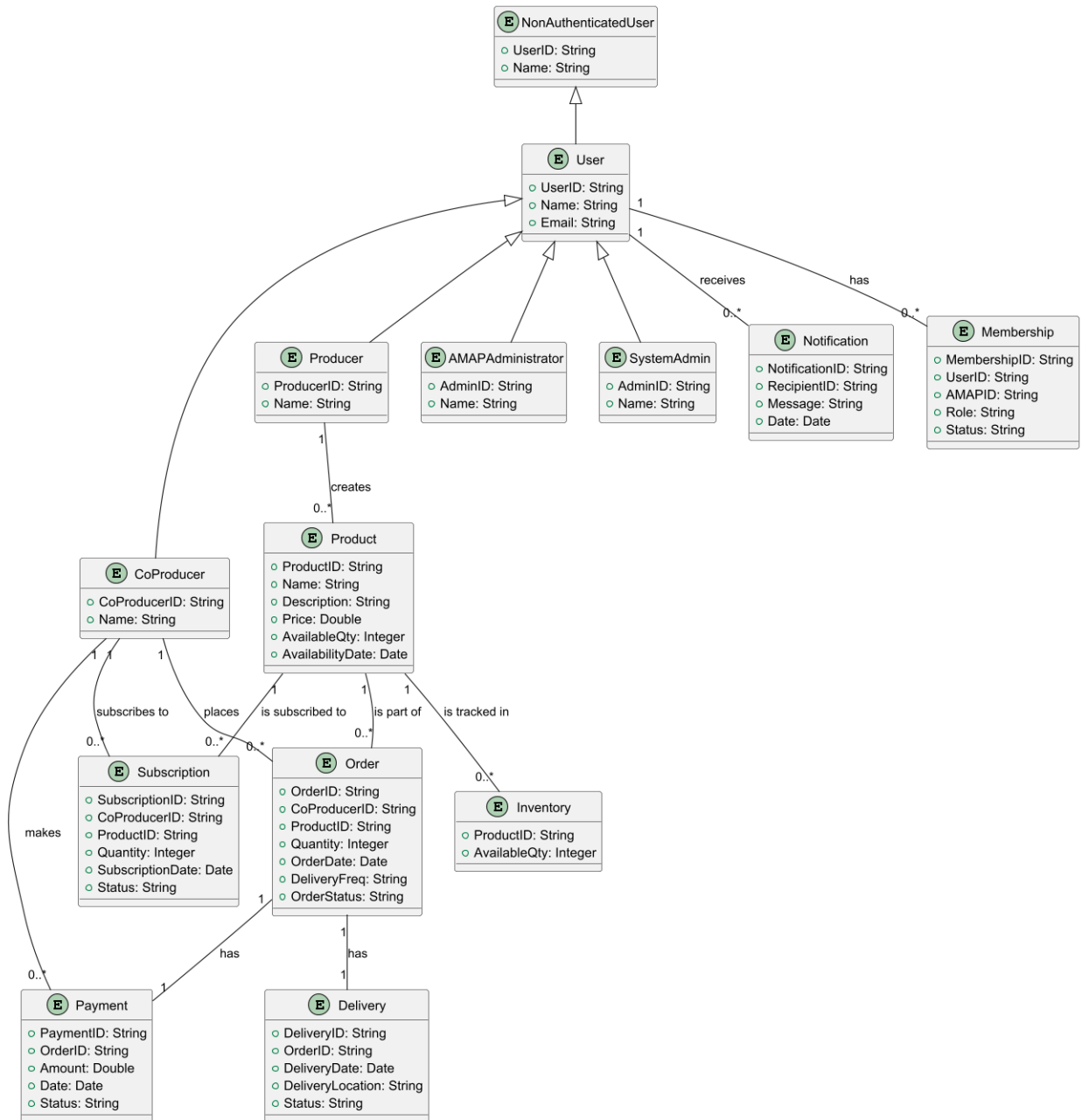


Figure 2 - Domain Model

5.2. User Management Context

- **NonAuthenticatedUser:** Represents a non-authenticated user with attributes like UserID and Name.
- **User:** Represents an authenticated user with attributes like UserID, Name, and Email.
- **Membership:** Represents the membership of a user in an AMAP, including attributes like MembershipID, UserID, AMAPID, Role, and Status.
- **Notification:** Represents notifications sent to users, with attributes like NotificationID, RecipientID, Message, and Date.

5.3. Product Management Context

- **Product:** Represents a product available in the AMAP, with attributes like ProductID, Name, Description, Price, AvailableQty, and AvailabilityDate.
- **Inventory:** Represents the inventory of products, tracking the available quantity with attributes like ProductID and AvailableQty.

5.4. Order Management Context

- **Order:** Represents an order placed by a user, including attributes like OrderID, CoProducerID, ProductID, Quantity, OrderDate, DeliveryFreq, and OrderStatus.
- **Delivery:** Represents the delivery details of an order, with attributes like DeliveryID, OrderID, DeliveryDate, DeliveryLocation, and Status.
- **Payment:** Represents the payment details for an order, including attributes like PaymentID, OrderID, Amount, Date, and Status.

5.5. Subscription Management Context

- **Subscription:** Represents a subscription to a product by a user, with attributes like SubscriptionID, CoProducerID, ProductID, Quantity, SubscriptionDate, and Status.

5.6. Relationships

- **NonAuthenticatedUser to User:** A non-authenticated user can become an authenticated user.
- **User to Membership:** A user can have multiple memberships in different AMAPs.
- **User to Notification:** A user can receive multiple notifications.
- **User to Order:** A user can place multiple orders.
- **User to Subscription:** A user can subscribe to multiple products.
- **User to Payment:** A user can make multiple payments.
- **Product to Order:** A product can be part of multiple orders.
- **Product to Inventory:** A product's availability is tracked in the inventory.
- **Product to Subscription:** A product can be subscribed to by multiple users.
- **Order to Delivery:** Each order has one delivery.
- **Order to Payment:** Each order has one payment.

6. External interface requirements

6.1. User interfaces

The user interface design focuses heavily on providing an optimal experience for users, particularly as the web application will primarily be accessed via mobile devices. Given that the target users may have limited computer experience and are transitioning from manual processes, the mobile UI/UX must prioritize simplicity and ease of use. Mobile-specific elements like buttons, links, icons, and error messages should be clear, intuitive, and designed for touch interaction. The layout should ensure that key features are easily accessible, with a focus on minimizing the effort required to navigate the app. The goal is to allow users to spend less time figuring out how to use the app and more time accomplishing their tasks. Furthermore, a simple and well-organized interface will help reduce human errors during data entry, improving both user experience and accuracy.

In the image below, a mockup of the "View Products" page is provided as an example of the concept developed by the group.

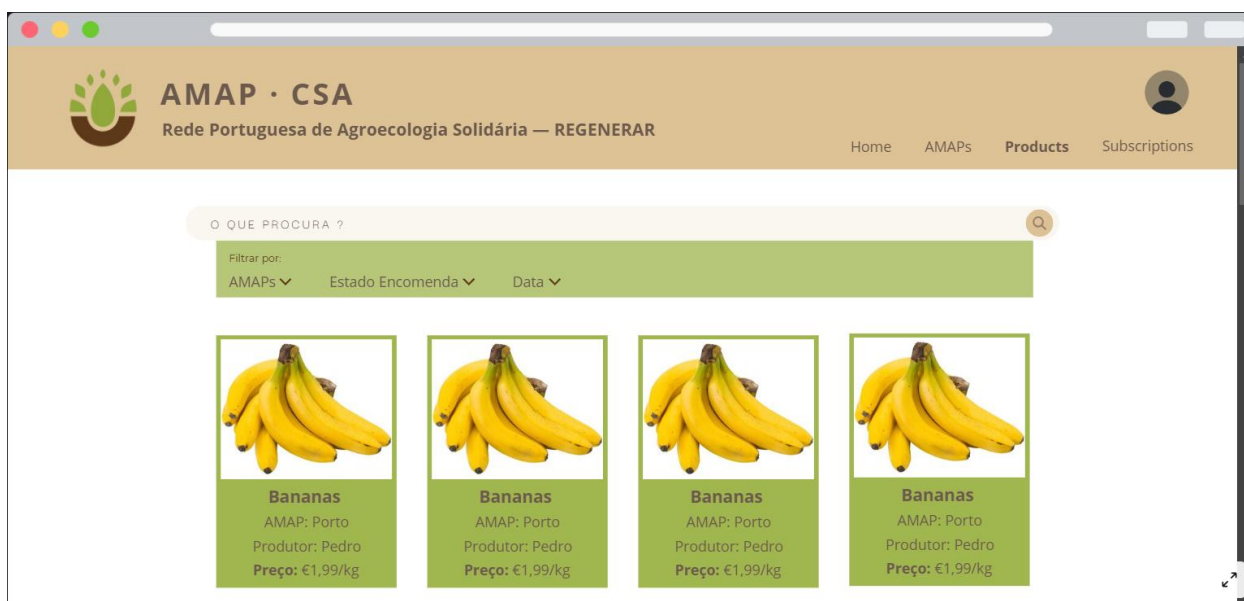


Figure 3 - Mockup (View Products)

6.2. Software interfaces

The component diagram presented in shows the software interfaces present in the system:

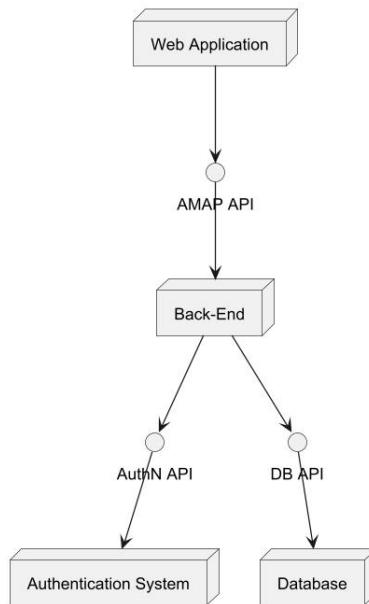


Figure 4 - Component Diagram

The Back-End serves as the central hub, interacting with the Web Application through the AMAP API, handling user authentication via the AuthN API, and managing data operations through the DB API.

6.3. Hardware interfaces

The system is designed as a web application for both desktop and mobile, with a priority on mobile usability due to AMAP's operational needs. Therefore, the website should be fully responsive.

6.4. Communication interfaces

Backend communication will use REST APIs, including with external services, over protocols like HTTPS. Database communication will depend on the specific technology chosen for that part of the system.

7. Quality attributes

This section describes the various aspects of the data that the system will consume as inputs, process, or create as outputs.

7.1. Usability

In terms of usability, the application must have only the essential features of the AMAP and CSA processes. It must have an intuitive and appealing interface so that users can carry out their actions with ease, as it will be used by individuals who may not be tech-savvy. The system should also provide a responsive user interface to ensure a smooth experience on both desktop and mobile devices.

7.2. Performance

The performance of the application must ensure fast and efficient processing. Key algorithms and processes, such as order matching and data retrieval, should operate swiftly with minimal error rates. Real-time data updates should be available for critical components like order tracking and inventory management. Additionally, notification systems must be reliable and deliver alerts instantaneously.

7.3. Security

All user data collected and stored by the system must be encrypted to ensure privacy and security. The system must implement role-based access control (RBAC), adhering to the Principle of Least Privilege (POLP) to limit user access to only what is necessary for their roles. Furthermore, an extensive logging system should be implemented to record all user actions, including modifications to data, with timestamps and user identification for accountability.

7.4. Safety

To protect data, the system must include an automated backup process that runs regularly, ensuring that information is preserved in case of system failure. Authorized users should have the ability to adjust thresholds for automatic processes that trigger notifications and alerts. Additionally, key functions such as order approval should require manual validation by authorized personnel to maintain accuracy and security in decision-making.

7.5. Interoperability

The system must seamlessly integrate multiple Identity and Access Management (IAM) providers (e.g., Google, Facebook) alongside its own login system, supporting standard protocols like OAuth 2.0 and OpenID Connect for compatibility. Upon login, it should consistently apply role-based access privileges and standardize role mappings across IAMs and the application to maintain coherent permissions and security. Additionally, the system should adapt to provider-specific features, like two-factor authentication, with minimal impact on user experience, and handle IAM updates with minimal disruption to user access.

8. Internationalization and localization requirements

The application will only be used in Portugal, and as such, it is not considered necessary for the system to support different formatting options for dates or addresses, for instance. One of the requirements, however, is to offer both Portuguese and English translations for the user interface. This localization solution should be flexible enough to allow for the addition of new languages in the future and to allow for an easy update of the translations.

Language Support

- The system will primarily support Portuguese as the main language, with an option to switch to English.
- All user interface text, error messages, notifications, and reports must be available in both Portuguese and English.
- Users should be able to select their preferred language at any point during their interaction with the system.

Date and Time Formatting

- The system must support the standard date and time formats used in Portugal (e.g., DD/MM/YYYY).
- Display formats should align with Portuguese regional norms, with an option for English locale adjustments as needed.

Currency and Number Formatting

- The system should format numbers and currencies using the Euro (€) symbol and appropriate decimal separators (e.g., 1.234,56).
- The number formatting should remain consistent regardless of the selected language.

User Input and Validation

- The system must validate user inputs according to Portuguese conventions, including postal codes, phone numbers, and date formats.
- Input fields should support special characters and formats required for names and addresses in Portugal.
- Validation should provide user-friendly error messages in both Portuguese and English, guiding users to correct their input errors.

9. Other requirements

To be determined in future design iterations.

10. Process adopted for elicitation

The process of gathering requirements focused on capturing stakeholder expectations and identifying essential system functionalities. This step was crucial for understanding user needs and aligning the system's capabilities with their expectations. The elicitation phase involved pinpointing all relevant stakeholders and arranging meetings to delve into their specific requirements, ensuring the development of the system was well-founded and justified.

10.1. Stakeholders

From the elicitation process, three main stakeholders were identified, each with different perspectives and expectations for the system. During the initial interviews with these stakeholders, it became evident that the process should revolve around these three types of stakeholders, although involving different participants with varying roles.

10.1.1 AMAP Administrator

The AMAP Administrator presents some of the most distinct perspectives among the various AMAP administrators. This is because an AMAP administrator can also be a Producer, a Co-Producer, or both, leading to diverse expectations and priorities.

The main concerns shared by different administrators revolved around the lack of information and historical data. They often do not know which orders will be delivered in the upcoming distribution and which producers and co-producers will be present. Additionally, it was noted as important to have reports covering the subscription period, summarizing all orders and payments.

10.1.2 Producer

The producer is one of the main stakeholders, being responsible for producing and supplying the products. Among the producers interviewed, the concerns were often similar.

The producer's vision focuses on facilitating the sale of products and having detailed information about orders. The use of Google Forms was mentioned as not being functional, user-friendly, and limited in capability. Managing shared forms among all producers was also highlighted as a challenge.

Producers expressed the need for a summary of orders and respective quantities by co-producer. Additionally, they requested that consumers receive a report summarizing their own orders.

11. Co-Producer

The co-producer, as a stakeholder, has specific concerns related to their role as a consumer in the AMAP system. One major issue raised was the lack of an overall view of the product offerings, making it difficult to plan and choose products effectively.

Another common concern was the organization of products—whether they should be categorized by producer or by product type. This would help streamline the selection process and make the system more user-friendly.

The complexity and length of current forms used to place orders were mentioned as challenges that need simplification to improve user experience. Additionally, co-producers requested an automatic calculation feature for total payment amounts, which would reduce errors and make the process smoother.

Finally, co-producers expressed the need for a summary of each subscription cycle that includes detailed information on what to collect at each delivery, as well as tools for better management of orders and payments.

11.1. Applied techniques

To gather the requirements, the following techniques were employed:

- **Interviews:** Three 15-minutes interviews conducted with the same stakeholders but with different participants to capture diverse perspectives.
- **Presentations:** Each stakeholder gave presentations during class sessions, providing valuable insights into their expectations and needs.
- **Data Analysis:** Analysis of data obtained from the interviews, presentations, and any documentation provided was performed to extract key requirements and refine the understanding of stakeholder expectations.

11.2. Effort involved

Describe in detail the total effort, and per business analyst, involved in the production of this work.

Task	Brief description	Hours
1	Preparation for the first meeting with CEO of FAIR	30m
2	First interview with CEO of fair	15m
3	Preparation for the first round of interview with AMAP Administrator, Producer and Co-Producer	30m
4	First round of interviews	15m
5	Consolidation from the interviews	30m
6	Preparation for the second round of interview with AMAP Administrator, Producer and Co-Producer	30m
7	Second round of interviews	15
8	Consolidation from the interviews	30m
9	AMAP Administrator presentation	2h
10	Consolidation from the presentation	30m
11	Preparation for the third round of interview with AMAP Administrator, Producer and Co-Producer	30m
12	Third round of interviews	15
13	Consolidation from the interviews	30m
14	AMAP Productor presentation	1h
15	Consolidation from the presentation	30m
16	Design Flow Diagrams	1h45
17	AMAP Co-Producer presentation	1h
18	Consolidation from the presentation	30m
19	Designing Use Cases	1h45
20	Designing Component Model	1h
21	Designing Domain Model	2h
22	Documenting the process and creating the SRS paper	25h

Total hours: ~41h30

11.3. Constraints and limitations

Despite conducting numerous interviews with stakeholders, the time available for each interview was limited. This constraint impacted the depth of information gathered from each session.

During the presentations, valuable information was shared; however, the perspectives among the three main stakeholders varied significantly and were sometimes even conflicting. This presented a challenge in aligning the different viewpoints.

Another issue identified throughout the interviews and presentations was the difficulty in standardizing certain aspects of the AMAPs. This lack of uniformity posed challenges in defining consistent requirements across all AMAPs.

12. Product Backlog

Summary of all features presented in the form of user stories. An initial (IR) requirement may result in several user stories.

Provide an estimate of the development effort for each of the user stories. The effort must consider all stages of development.

Example:

US Nr.	IR Nr.	User Story	Estimative	Priority
UC01	REQ-01	Create a new AMAP by entering essential details	20h	High
UC01	REQ-02	Configure AMAP settings	15h	High
UC06	REQ-03	Add new products to the catalog.	15h	High
UC06	REQ-04	Update existing product information.	12h	High
UC06	REQ-05	Remove products from the catalog.	10h	High
UC10	REQ-06	Fill a form to contact an AMAP	10h	High
UC10	REQ-07	If choosing the co-producer role, send a list containing the desired product categories and quantities in free-form text.	12h	High
UC10	REQ-08	If choosing the producer role, send a list of products that can be produced in free-form text.	12h	High
UC11	REQ-09	Authenticate users based on entered credentials and role privileges.	12h	High
UC11	REQ-10	Recover user account password via a recovery link or code sent to a registered email or phone number.	8h	Medium
UC11	REQ-11	Allow users to optionally authenticate using different Identity and Access Management providers.	10h	Medium
UC12	REQ-12	Create a new user account.	12h	High
UC12	REQ-13	Allow users to register in multiple AMAPs under a single account.	10h	Medium
UC12	REQ-14	Enable users to select and assign multiple roles within each AMAP.	12h	Medium
UC13	REQ-15	Automatically generate and send notifications to designated recipients based on valid triggers	10h	High
UC14	REQ-16	The actor can see the list of products from the AMAPs.	14h	High
UC14	REQ-17	The actor can see detailed information about a product	10h	Medium
UC15	REQ-18	The actor can see the list of available AMAPs	12h	High

UC15	REQ-19	The actor can see detailed information about a specific AMAP	10h	Medium
UC16	REQ-20	The actor can see the list of their existing product or basket subscription requests.	10h	High
UC16	REQ-21	The actor can edit or delete their existing subscription requests	12h	High
UC16	REQ-22	The actor can subscribe to new products by accessing the "View Products" section and selecting the desired products.	8h	Medium
UC17	REQ-23	The actor can access a history of all past subscriptions made within the AMAP	12h	Medium
UC17	REQ-24	The actor can see detailed information for each past subscription	10h	Medium
UC18	REQ-25	The actor can access detailed information about scheduled deliveries	12h	High
UC18	REQ-26	The actor can see detailed information about the status of each delivery	8h	High
UC19	REQ-27	The actor has access to the history of all payments made within the system	14h	Medium
UC19	REQ-28	The actor can filter the payment	10h	Medium
UC20	REQ-29	The actor can visualize a list of consumer subscriptions	15h	High
UC20	REQ-30	The Actor can manually verify and mark the payment status for each subscription.	12h	High
UC20	REQ-31	The actor should mark subscriptions as "confirmed for production," indicating they will be included in the upcoming production cycle.	12h	High
UC20	REQ-32	The Actor can review past consumer demand patterns, facilitating better planning and production adjustments.	8h	Medium
UC21	REQ-33	The actor can access production and sales reports organized by production cycles for a comprehensive view of each period's performance	12h	Medium
UC23	REQ-34	The actor can request membership in a new AMAP or unsubscribe from an AMAP they are currently associated with.	10h	Medium
UC24	REQ-35	The actor is able to access the list of all active producers and their details	10h	Medium
UC24	REQ-36	Actors can explore collaboration opportunities	10h	Medium
UC22	REQ-37	The actor can view, add, edit, and deactivate products	18h	High
UC22	REQ-38	The actor can upload important documents, such as organic certification or other credentials	8h	Medium
UC22	REQ-39	The actor can specify or modify payment preferences, including details for receiving payments	8h	Medium
UC02	REQ-40	Add a new role to a user.	10h	High

UC02	REQ-41	Remove a role from a user.	8h	High
UC02	REQ-42	Answer to user requests to join AMAP as a Producer or Co-Producer.	8h	Medium
UC02	REQ-43	Notify users of decisions.	6h	Medium
UC03	REQ-44	Add a new subscription period.	8h	Medium
UC03	REQ-45	Update a role from a user.	10h	High
UC04	REQ-46	Update the delivery settings.	10h	High
UC05	REQ-47	View current filters and role configurations.	8h	Medium
UC05	REQ-48	Modify filter criteria and role permissions.	10h	Medium
UC07	REQ-49	Display all active and completed subscription orders.	10h	Medium
UC07	REQ-50	Provide detailed information for each subscription order.	10h	Medium
UC07	REQ-51	Allow filtering and sorting of subscription orders by date, status, or consumer.	12h	Medium
UC08	REQ-52	Provide detailed information for each subscription order.	10h	Medium
UC08	REQ-53	Generate reports based on subscription order data.	12h	Medium
UC08	REQ-54	View current AMAP information.	8h	Medium
UC08	REQ-55	Update location details and contact information.	8h	Medium
UC09	REQ-56	Create and customize questionnaires to new products.	10h	Medium
UC90	REQ-57	Send questionnaires and track their delivery status.	8h	Medium
UC09	REQ-58	Provide a summary report of responses received.	8h	Medium

To develop all the functionalities of this document the software house will need a total of X hours.

13. Appendix

13.1. Appendix - Glossary

AMAP - Associação pela Manutenção da Agricultura de Proximidade

CSA - Comunidade que Sustenta a Agricultura.

IAM - Identity and Access Management (providers)

UML - Unified Modeling Language

GDPR - General Data Protection Regulation

PII - Personally Identifiable Information

13.2. Elicitation data detail

Below are some examples of elicitation example data:

13.2.1 Formulário de Encomendas (Google Forms)

ENCOMENDAS AMAP Porto UPTEC

Baixa // Outubro a Dezembro de 2024 //

Trimestre de Outono

Produtores agroecológicos ativos:

Quinta da Serrinha: azeite, azeitonas, frutos secos, queijo e vinho.
Cogumelos do Migaas: cogumelos e alheira de cogumelos.
Biogoods: Hortícolas, leguminosas, ovos, fruta, aromáticas, frango, borrego, doces e produtos da colmeia.
Trigo do Umbigo: Pão artesanal.

Na AMAP os Coprodutores (consumidores) comprometem-se a adquirir produtos agroecológicos, diretamente ao produtor, mediante subscrição e por um período pré-definido de três meses.

A distribuição acontece:

- * às terças-feiras;
- * no pavilhão - Jardim da UPTEC Baixa, na Praça do Coronel Pacheco, 2 Porto;
- * entre as 17:30h e as 19:30h.

Os produtores chegam ao local pelas 17h e todos os coprodutores estão convidados a dar uma ajuda na preparação da distribuição.

Depois das 19:30h, os cabazes por levantar serão deixados no exterior do pavilhão, identificados pelo nome, para posterior levantamento.
Cada coprodutor deverá levar sacos para recolher os seu produtos.

Entregas deste trimestre:

- Em Outubro haverá três (3) entregas - dias 1 e 15 e 29
- Em Novembro haverá duas (2) entregas - dia 12 e 26
- Em Dezembro haverá duas (2) entregas - dias 10 e 23 (esta última a confirmar)

As subscrições devem ser efetuadas (idealmente) até dia 29 de Setembro de 2024. Caso pretenda subscrever depois desta data, por favor mande-nos um email para amappportopinc@gmail.com para que possamos avaliar a viabilidade de aceitar a sua encomenda.

Os pagamentos podem ser efetuados mensalmente ou trimestralmente. Devem ser tidas em atenção as informações que cada produtor disponibiliza a esse respeito. Todos os assuntos referentes a produtos/encomendas/comprovativo de pagamentos, deverão ser enviados diretamente a cada produtor, para os seus emails.

Junta-te ao grupo de produtores e coprodutores desta AMAP no WhatsApp:
[WhatsApp AMAP PORTO](#)

PRODUTOS AGROECOLÓGICOS A UM PREÇO JUSTO, DIRECTAMENTE DO PRODUTOR!

Email *

O seu email

Nome *

A sua resposta

Telemóvel *

A sua resposta

Observações gerais - informação para todos os produtores (ex: períodos de ausência)


A sua resposta

Seguinte

Limpar formulário

Biogoods - Hortícolas, leguminosas, fruta, ovos, aromáticas, carne, doces e produtos da cozinha

Local de produção: Onfêes
Contacto: 963/64791 (sófia)
Email: biogoods@biogoods.pt
Mais informação: www.biogoods.pt | <https://www.facebook.com/biogoodsportugal>



Cabaz da Horta (aproximadamente 3kg de legumes da época)
Escolhe abaixo se pretende receber o cabaz quinzenal ou apenas o título experimental.

☐ Entrega Quinzenal (22€ mês)
☐ Entrega Experimental (11€ - entrega dia 1 de Outubro)

Cabaz da Quinta | Entrega quinzenal
Cabaz composto essencialmente por abóbora, batata, cebola e fruta da época Bio. Pontualmente, poderá também ser introduzidos legumes (sem sobreposição com os oferecidos no Cabaz da Horta), aromáticas, leguminosas, feijão cozido, alimentos silvestres da época (urtigas ou outras), produtos da cozinha ou doces. Peso total aproximado de 4kg. Caso prefira excluir do cabaz algum dos elementos listados, pedimos que por favor o indique no campo "Observações" para que tentemos ajustar.

	Quinzenal	Experimental (1ª entrega do trimestre)
Cabaz da Quinta 10€	<input type="checkbox"/>	<input type="checkbox"/>

Cabaz ABC | Entrega quinzenal
Cabaz composto por 3kg/0,3kg de abóbora, batata e cebola.

	Quinzenal	Mensal
Cabaz ABC 5,5€	<input type="checkbox"/>	<input type="checkbox"/>

Abóbora, batata e cebola Bio - Entrega quinzenal

	1 kg	2 kg
Batata 1,9€/kg	<input type="checkbox"/>	<input type="checkbox"/>
Abóbora 1,9€/kg	<input type="checkbox"/>	<input type="checkbox"/>
Cebola 1,5€/kg	<input type="checkbox"/>	<input type="checkbox"/>
Batata doce 2,3 €/kg	<input type="checkbox"/>	<input type="checkbox"/>

Feijão seco Bio - Entrega mensal (1ª entrega de cada mês)
Selecione aqui a quantidade que pretende receber. Se pretender outras quantidades por especificar nas observações.

	1	2	3
Feijão vermelho 2,4€/500g	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feijão branco 2,4€/500g	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feijão frade 2,5€/500g	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Fruta da época Bio | Entrega quinzenal
As datas indicadas podem variar em função do avanço ou atraso da produção.

Entregas previstas
- Maçã: 5 entregas (1, 15 e 29 de Outubro, 12 e 26 Novembro)
- Castanha: 3 entregas (1, 15 e 29 de Outubro)
- Dão: 2 entregas (15 e 29 de Outubro)
- Limão: 4 entregas (12 e 26 Novembro, 10 e 23 Dezembro)
- Kiwi: 1 entrega (23 Dezembro)

	1	2	3
Maçã 2,4€/kg	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Castanha 5,5€/kg	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dão 4,0€/kg	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Limão 1,1€/500g	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Kiwi 2,4€/kg	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Trigo do Umbigo

Nome: Trigo do Umbigo
Local de Produção: Ermesinde
Contacto: 911533950



Variedades de pão - Entregas quinzenais

☐ Pão de trigo semi-integral 500g 2,5€
☐ Pão de mistura (trigo e centeio) 500g 2,5€
☐ Pão de trigo integral 500g 2,5€
☐ Pão de Centeio 500g 2,5€
☐ Pão de trigo com algas e sementes 500g 3€
☐ Pão de mistura com sementes 500g 3€
☐ Pão de trigo com nozes e passas 500g 3€
☐ Pão de trigo com azeitona 500g 3€
☐ Pão de mistura com azeitona 500g 3€

Trigo do Umbigo - Formas de pagamento

☐ MBWAY - 911533950
☐ Numérico

[Anterior](#) [Seguinte](#) [Limpar formulário](#)

ENCOMENDAS AMAP Porto UPTEC

Baixa // Outubro a Dezembro de 2024 // Trimestre de Outono

saritamoreira@gmail.com [Mudar de conta](#)

* Indica uma pergunta obrigatória

Autorização de Dados

☐ Confirmo que li e aceito os Termos e Condições da AMAP UPTEC BAIXA: <https://docs.google.com/document/d/1XtkCX8HOsOLtsVgZbh6qK41cGY54hfWdbQsQNXJoEw/edit?usp=sharing>

Autorizo que os meus dados sejam utilizados para efeitos de estudos/inquéritos no âmbito da AMAP (ex: doutorandos/as que estão a estudar as AMAP's em Portugal).

☐ Caso autorize, os contatos apenas serão fornecidos depois de certificada a credibilidade/veracidade dos estudos/projetos em questão e que seja garantida a confidencialidade.

Confirmo que tenho conhecimento do Guia para entrada de novos co-produtores (consumidores) <https://docs.google.com/document/d/1J4s6OAbpJPwpRVpBp4eHYOZPHIB5sSKZ/edit?usp=sharing&oid=106918945013296753819&rtopof=true&sd=true>

Será enviada uma cópia das suas respostas por email para o endereço que forneceu.

[Anterior](#) [Enviar](#) [Limpar formulário](#)

Nunca envie palavras-passe através dos Google Forms.

13.2.2 Mapa de entregas

AMAP											
Produtor	Alimentos	Periodicidad e	04/out	18/out	02/nov	15 nov	29 nov	13/dez	20/dez		
Obra d'Horta	Cabaz da Horta Coentros Espinafre Rucula Folhas baby Salsa	Mensal	Cabaz Coentros	Cabaz Coentros	Cabaz Coentros	Cabaz Coentros	Cabaz Coentros	Cabaz Coentros	Cabaz Coentros	€48	Trimestral
	Batata doce	Mensal									Pago 57,60
Migaas	Cogumelos e alheiras	Mensal									
		Quinzenal	1cx cogumelos 1 alheira	1cx cogumelos 1 alheira	1cx cogumelos 1 alheira	1cx cogumelos 1 alheira	1cx cogumelos 1 alheira	1cx cogumelos 1 alheira	1cx cogumelos 1 alheira	€6,60	quinzenal
Quinta do Pinheiral	Maças	Quinzenal	Malapio 1kg	malapio 1kg porta da loja 1kg	malapio 1kg porta da loja 1kg	espriega 1kg malapio 1Kg porta da loja 1kg	espriega 1kg malapio 1Kg porta da loja 1kg	espriega 1kg malapio 1Kg porta da loja 1kg	espriega 1kg malapio 1Kg porta da loja 1kg	Varia	
	Cenoura (previsão)	Pontual			1kg			1kg		€4	
	Farinha de centeio	Trimestral			x						
	Sumos caseiros	Trimestral									
Agrinemus	Compotas e purés de fruta	Mensal	x		x			x			
	Tremoço	Trimestral			X						
	Humus/ Paté	Trimestral									
	Medalhões de Tremoço	Trimestral									
Quinta da Serrinha	Falafel de Tremoço	Mensal	x		x			x			
	Farinha de tremoço	Mensal									
	Azeite	Trimestral					Azeite 5lt			€72,00	
	Azeitonas	Trimestral					Azeitona 1kg				
	Miolo de amêndoa/noz	Trimestral					Amendoa 1kg				
	Queijo de ovelha	Trimestral					queijo de ovelha				
	Vinho verde e rosé	Trimestral					vinagre				
	Cabaz ABC (Abobora, Batata e Cebola)	Quinzenal	x	x	x	x	x	x	x	€35,00	
	Batata	Mensal	x		x			x			
	Cebola	Mensal									
	Abobora	Quinzenal	x	x	x	x	x	x	x		
	(encomenda em separado)	Quinzenal									

13.2.3 Encomendas Co-Produtor

Nome	Observações gerais - informação para todos	Cabaz da Horta (aproximadamente 3kg de	Cabaz da Quinta Entrega quinzenal Cab	Cabaz ABC Entrega quinzenal Cabaz AB	Abóbora, batata e cebola Bio - Entrega qu	Abóbora, batata e cebola Bio - Entrega qu
		Entrega Quinzenal (22€ mês)	Quinzenal			
		Entrega Quinzenal (22€ mês)			1 kg	
		Entrega Quinzenal (22€ mês)				1 kg
		Entrega Quinzenal (22€ mês)				
		Entrega Quinzenal (22€ mês)		Mensal		
	12 de Novembro estamos ausentes	Entrega Quinzenal (22€ mês)	Quinzenal			
	Vou estar ausente no dia 01 de Outubro.	Entrega Quinzenal (22€ mês)			1 kg	1 kg
		Entrega Quinzenal (22€ mês)	Quinzenal			1 kg
		Entrega Quinzenal (22€ mês)	Quinzenal			
	Estarei fora a 23 de dezembro	Entrega Quinzenal (22€ mês)		Mensal		
		Entrega Quinzenal (22€ mês)		Quinzenal		
		Entrega Quinzenal (22€ mês)	Quinzenal			
		Entrega Quinzenal (22€ mês)			2 kg	
		Entrega Quinzenal (22€ mês)		Quinzenal	2 kg	
		Entrega Quinzenal (22€ mês)	Quinzenal			
	Pão só nas datas de 26 de novembro e 10 de dezembro.					
	1 out e 23 de dez sem cabaz. Vou apenas subscrever as restantes entregas. No caso do pão e dos cogumelos, subscrevi 1 por mês. Prete	Quinzenal				
		Entrega Quinzenal (22€ mês)				

14. Team Contributions

- **Hugo(1162086):** Focused on defining the System Features for the AMAP Administrator, contributing to the identification and analysis of Quality Attributes, as well as establishing Internationalization and Localization Requirements. Additionally, he outlined the Processes Adopted for Requirement Elicitation.
- **Ilidio(1191577):** Focused on defining the System Features for the System, Admin, and Non-Authenticated User, developing the Domain Model and specifying Interface Requirements.
- **Paulo(1240481):** Focused on defining the System Features for the Co-Producer, developing Mockups and Data Models, along with defining User Classes and Characteristics.
- **Pedro(1240482):** Focused on defining the System Features for the Producer, and contributing to the Logical Data Model, Data Dictionary, and Reports sections.