

Digital Voter ID – User Interface Design Specification

📘 Document version : 1.0

📅 Date: July 26, 2025

👤 Author : David Tacuri

📁 Repository : <https://github.com/democracyonchain/eulalia-documents>

🖼 Figma UI Mockups :

- Web: [Figma Web UI Link]

<https://www.figma.com/design/2Jlob1tJUv5bAxjOM8wVcx/WEBSITE?node-id=0-1&p=f&t=bo31zdfQrGgauhrO-0>

- Mobile: [Mockflow App Flutter Link]

<https://app.mockflow.com/space/f776cac3bce94e4e89802838307ca06a>

⌚ Scope of the Document

Voter ID system's user interfaces (UI) , including:

💻 React Web Platform : Membership application management, organization management, statistics dashboards, system configuration.

📱 Flutter Mobile App : Citizen Registration Module, Biometric Validation, Political Affiliation and Disaffiliation.

Each interface is documented with: Purpose, UI Components, Validations, Backend Processing , Security, and Navigation.

🌐 Visual Identity and Institutional Colors

Element	HEX Color	Use
Primary	#1e40af	Main buttons, links
Secondary	#2563eb	Highlighted actions
Light background	#ffffff	Main containers

Main text	#1f2937	Base text, headings
Neutral background	#f9fafb	Support areas and edges

Technologies by Component

Component	Language/Framework	Description
Frontend Web	React + TypeScript + TailwindCSS	microfrontend , modular structure
Mobile Frontend	Flutter (Dart)	Native cross-platform app for Android/iOS
Backend API	C# .NET Core (8.0)	RESTful business logic + PostgreSQL
Database	PostgreSQL	Management of citizen entities and affiliation
Blockchain	Aiken (Cardano)	Traceability validation and on-chain verification

React Web Platform

Screen: Web Login

The screenshot shows a web browser window for the "Democracy on Chain" platform. At the top, there's a navigation bar with links for Home, About, Contact, and Login, along with a search bar. The main title "Political Organization Management Platform" is centered above the login form. The login form itself has fields for "Username" and "Password", both with placeholder text. Below the fields are "Register" and "Login" buttons. At the bottom of the page, there are links for Privacy Policy, Terms of Service, Contact Us, and a copyright notice for Democracy on Chain.

📍 Location

Main path of the web system, visible to unauthenticated users.

🎯 Purpose

To allow authenticated access to representatives or operators of political organizations.

⚙️ UI Components

Element	Type of Control	Properties	Description
Qualification	Text	Text : Political Organization Management Platform	Main institutional heading
Caption	Text	Text: Login	Credential entry indicator
Username	TextField	Placeholder : Enter your username	User input field
Password	TextField	Placeholder : Enter your password	Password entry field

Register button	OutlinedButton	Text: Register	Redirects to the registration form
Login button	FilledButton	Text: Login	Send credentials for validation

Validations

Field	Validation Rules	Error message
Username	Not empty	Username es required
Password	Not empty	Password es required

Backend Processing

- Credential validation via POST /api/auth/login
- JWT token generation if valid
- Session management and secure cookies

Security

- Streaming over HTTPS
- Tokens with short expiration
- Prevention of brute force attacks (throttling)

Navigation

Action	Destination	Description
Click on Register	Registration Screen	Redirects to the organization creation screen
Login successful	General Dashboard	Access to the administrative module

Screen: Political Organization Registry

The screenshot shows a web-based registration form for political organizations. At the top left is the logo 'Democracy On Chain'. At the top right is a 'Log out' button. The main title 'Registration of Political Organizations' is centered above a dashed blue border. Below the title, a message reads: 'Please complete the information below to register your organization.' The form fields are organized into sections:

- Name of Organization:** A text input field with placeholder text 'Enter the name of the organization'.
- Type of Organization:** A dropdown menu labeled 'Select an option' with three choices: 'Partido Político', 'Movimiento Nacional', and 'Movimiento Local'.
- ID:** A text input field with placeholder text 'Enter your ID number'.
- Name:** A text input field with placeholder text 'Enter your Name'.
- Phone Number:** A text input field with placeholder text 'Enter your phone number'.
- Email:** A text input field with placeholder text 'Ingresar su correo electrónico'.
- Province:** A dropdown menu labeled 'Select a Province' with two choices: 'Province 1' and 'Province 2'.
- Parroquia:** A dropdown menu labeled 'Select a Parroquia' with two choices: 'Parroquia 1' and 'Parroquia 2'.
- Canton:** A dropdown menu labeled 'Select a Canton' with two choices: 'Canton 1' and 'Canton 2'.

At the bottom of the form are two buttons: 'Cancel' and 'Save'.

📍 Location

Accessible from the main dashboard , 'Register Organization' option.

Purpose

Allow the registration of new political organizations to the system.

UI Components

Element	Type of Control	Properties	Description
Organization Name	TextField	Placeholder : 'Enter name'	Required field.
Type of Organization	Dropdown	Options: Party, Movement	Type selection.
ID	TextField	Numeric	Legal identifier of the representative.
Representative Name	TextField	-	Name of the person registering.
Phone	TextField	Numeric	Contact number.
E-mail	TextField	Email format	Institutional email.
Province	Dropdown	Dynamic list	Geographic location.
Colony	Dropdown	Dynamic list	Geographic location.
Parish	Dropdown	Dynamic list	Geographic location.
Buttons	Buttons	Save / Cancel	Final actions.

Validations

Field	Validation Rules	Error message
Name	Mandatory	Please enter a valid name.
E-mail	Email format	Please enter a valid email address.
Phone	Numeric	Please enter a correct number.
Province/Colony/Parish	Required selection	You must select jurisdiction.

Backend

Processing

- Validation of the organization's prior existence.
- Registration in the PostgreSQL database. - Audit log.

Security

- Requires an authenticated session. -
- Anti-bot validation .
- Logs encrypted in transit with HTTPS.

Navigation

- Upon successful saving, the user is redirected to the review panel.
- Upon canceling, the user returns to the previous panel without saving changes.

Screen: List of Registered Organizations

 Authenticated User Dashboard **Location > Section:**
Reports

Purpose:

To view the list of registered organizations, their authorization status, and access their details.

UI Components

Element	Type of Control	Properties	Description
Qualification	Text	Text: Pre-Registration of Entered Organizations	Listing section header
Board	DataTable	Columns: Organization, Province, Canton, Parish, Date, State, Action	Displays each record entered
Details button	Button	Text: Details	Allows access to complete registry information

Backend Processing

- - GET /api/organizations query
- - Sorting and pagination from backend

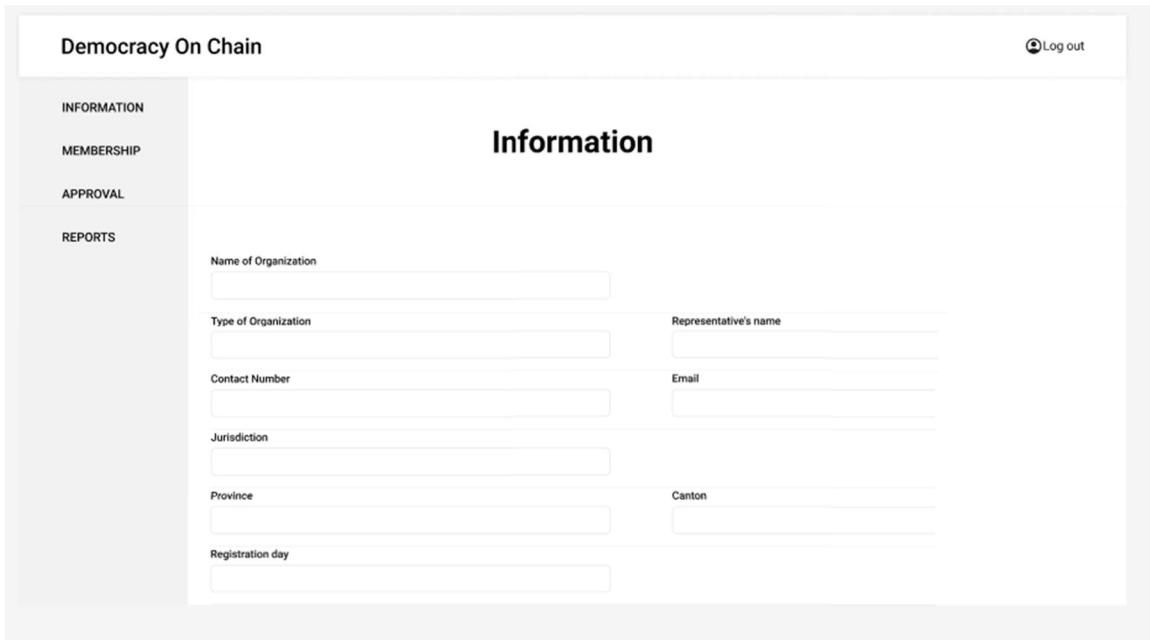
Security

- Access restricted to authenticated users with valid role

Navigation

Action	Destination	Description
Click on Details	Organization Details Screen	Displays full record details

Screen: Organization Information



The screenshot shows a user interface for managing organization information. On the left, a vertical sidebar lists navigation options: INFORMATION, MEMBERSHIP, APPROVAL, and REPORTS. The 'INFORMATION' option is selected and highlighted in blue. The main content area is titled 'Information'. It contains several input fields for organization details:

- Name of Organization
- Type of Organization
- Contact Number
- Jurisdiction
- Province
- Registration day
- Representative's name
- Email
- Canton

A 'Log out' button is located in the top right corner of the main content area.

Location

Left side panel, when clicking on the 'INFORMATION' option.

Purpose

View and edit basic information about the registered political organization.

UI Components

- Text fields: Name, organization type, representative, phone, email, jurisdiction, province, canton, registration date. - Button: No explicit action buttons are visible (autosave or dependent navigation is assumed).

Validations

- All fields must be completed.
- Email must be in a valid format.
- Numeric phone number.

Backend

Processing - Data query and update via REST endpoints . - Validation of organization existence and persistence of changes.

Security

- Requires JWT authentication.
- Only users with authorized roles can view or edit.

Navigation

- From login or dashboard → INFORMATION section.

Screen: Affiliates / Members

Location

Left side panel, 'MEMBERSHIP' option.

Purpose

Display the list of citizens affiliated with the organization.

UI Components

- Table with columns: Number , ID, Name, Membership Date.
- Side navigation panel.

Validations -

- Backend ID format validation .
- Filtering by authenticated organization.

Backend

Processing - GET /api/organization/members endpoint .

- Token authentication and organization ID verification.

Security

- JWT token required. - Only users with an organizational role can access.

Navigation

- From login or dashboard → MEMBERSHIP section.

Screen: Approval

Location

Approval " side section within the organization's user panel.

Purpose:

View the documents submitted by the organization and the status of their approval process.

UI Components

Element	Type of Control	Properties	Description
Qualification	Text	Text: 'Approval'	Main section heading .
List of Documents	Text fields + button	Button: View	Viewing documents uploaded for review.
State	Text	Text: 'In collection of support'	Displays the current status of the approval process.

Validations

Field	Validation Rules	Error message
-------	------------------	---------------

Documents	There must be an attachment for each required document	Mandatory document not uploaded.
-----------	--	----------------------------------

Backend Processing

- Validation of the presence of required documents.
- Secure storage of documents in the backend (with metadata).
- Validation of organizational status. - Associated endpoint : /api/ approval /{organizationId }

Security

- JWT validation for document access.
- Permissions only for the owner organization. - Access control for views and downloads.

Navigation

Action	Destination	Description
Click on View	Document Viewer	Allows you to view the uploaded document.
Return to the side menu	Main Panel	Allows you to return without saving changes.

Screen: Citizen Information

The screenshot shows a user interface for citizen information. At the top, there's a header bar with the text "Auditing and Traceability". Below it, a user profile section displays "User: Juan Pérez" and "Organization XYZ". A "Log Out" button is also present. The main content area includes fields for "Name of Organization" and "Type of Organization", and a search bar labeled "Name" with the placeholder "Enter your Name". A table grid below these fields shows historical records with columns: ID, NAME, DATE, TRANSACTION, and CERTIFICATE. One visible row contains the values: 06031823764, David Patricio Escalante Lema, 03/01/25, a4b687ae926ba.., ce415ab7ee927b..

📍 Location

Accessible from the organization's dashboard or from the side navigation, under the 'Information' option in the administrative panel.

⌚ Purpose

Allow the organization to view general information about the affiliated citizen, including affiliation status, personal details, and historical records.

⚙️ UI Components

Element	Type of Control	Properties	Description
Header: Citizen Information	Text	Size: 20px, Bold	Main title of the section.
Personal Data	Text Grid	Fields: ID, First Name, Last Name, Sex, Date of Birth	Section showing data extracted from the census.
Affiliation Status	Label / Badge	Green color if affiliated, red if not	Indicates the current status of the citizen.
Record History	Board	Columns: Date, Action, Status	Shows previous actions on the citizen.
Button: Back	Button	Text: "Back"	Allows you to return to the previous panel.

Validations

- Modification of information is not permitted.
- Validation of citizen existence. - Consistency of data loaded from the backend is validated .

Backend Processing

- Query the internal backend API `/api/citizen/{id}`.
- Load data from a PostgreSQL database using Entity Framework.
- Check membership status and related historical events.

Security

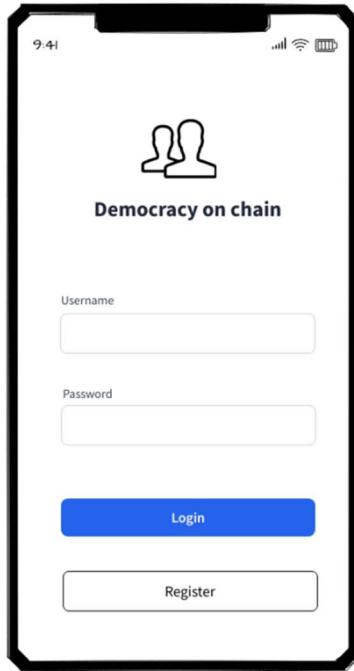
- Access protected by role-based authentication (authorized operators only).
- Endpoint validated with JWT.
- Writing or updating is not permitted from this view.

Navigation

Action	Destination	Description
Click on “Back”	Main panel	Return to the organization's dashboard .

Flutter Mobile App

Screen: Login



📍 Location

Starting the mobile application (Flutter).

🎯 Purpose

Allow authenticated access for users registered in the Digital Voter ID system.

⚙️ UI Components

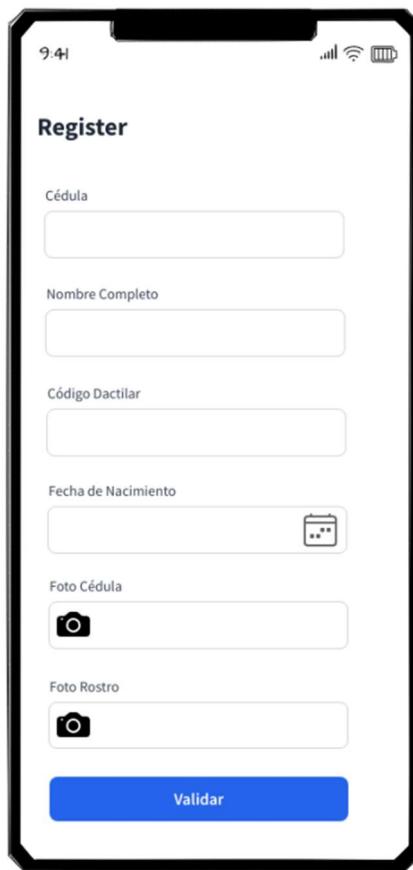
Element	Type of Control	Properties	Description
Top icon	SVG/PNG Image	100x100 px	Visual representation of the identity or user module.
Qualification	Text Widget	Text: ' Democracy on chain '	Name of the system; institutional source centered.
Username	TextField	hintText : ' Username '	Field to enter username .

Password	TextField	hintText : ' Password ', obscureText : true	Password entry field (hidden mode).
Login button	ElevatedButton	Text: ' Login ', Color: #2563EB	Main button to authenticate.
Register button	OutlinedButton	Text: ' Register '	Redirects to the registration form.

Validations

Field	Validation Type	Error message
Username	Not empty	' Username es required '
Password	Not empty	' Password es required '

Screen: Citizen Registration (Register)



Location Accessible from the

login screen using the " Register " button, only for citizens who are not yet registered in the system.

Purpose

To collect and validate a citizen's basic and biometric information for inclusion in the political affiliation system.

UI Components

Element	Type of Control	Properties	Description
Qualification	Text	Text: " Register ", Size: 22px, Weight: Bold	Main header of the registration screen.
Field: ID	TextField	Placeholder : "Cedula", Type: Numeric	Requires 10 digits. Validation required.
Field: Full Name	TextField	Placeholder : "Full Name"	Required field. Only letters and spaces are accepted.
Field: Fingerprint Code	TextField	Placeholder : "Fingerprint Code", Type: Alphanumeric	It must be validated with the citizen registry if it is enabled.
Field: Date of Birth	DatePicker	Format: dd /mm/ yyyy	It is used to validate minimum age (age of majority).
Capture: Photo ID	IconButton / Camera	Icon: Camera 	Allows you to activate the camera or upload an image. Validated by OCR.
Capture: Face Photo	IconButton / Camera	Icon: Camera 	Allows you to capture selfies for facial recognition.

Button: Validate	ElevatedButton	Text: "Validate", Color: Blue (#2563eb)	backend verification processes , including OCR and facial validation.
------------------	----------------	--	---

Validations

Field	Validation Rules	Error message
ID card	Length 10, numeric, valid checksum	"Invalid ID number."
Full Name	Only letters and spaces, minimum 2 words	"Enter your full name."
Fingerprint Code	Expected length (usually 10)	"Invalid fingerprint code."
Date of Birth	Date less than the current date and over 18 years old	"Must be of legal age."
Photo ID	Required, JPG/PNG format	"You must capture a photo of your ID."
Face Photo	Required, active face validation	"You must take a clear selfie ."

Backend Processing

- Verification of duplicate ID cards and fingerprints.
- OCR for legible text in the ID photo.
- Validation of match between photo and census data.
- Biometric comparison between selfie and ID photo (AI).
- Identity hash generation and future integration with Atala PRISM.
- Encrypted temporary storage or upload to IPFS (optional).

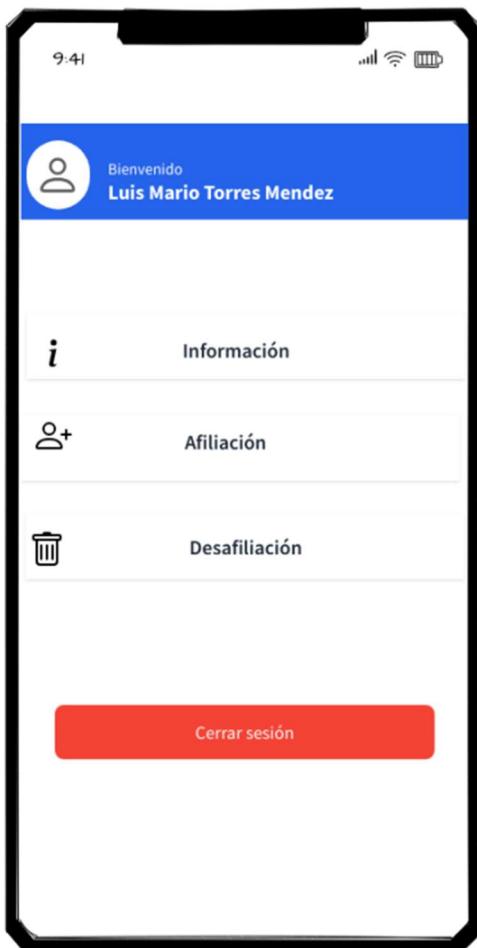
Security

- Encrypted communication (HTTPS).
- AES-256 encryption for temporary images.
- Anti-bot validation to prevent automated registrations.
- Endpoint backend : POST /api/citizen/validate-registration.

Navigation

- Tap on “Validate” → Dashboard (if valid) → The citizen is registered and the session is established.
- Tap Back → Login → Go back without saving anything.

Screen: Citizen Dashboard



📍 Location

After successful login .

⌚ Purpose:

Allow citizens to navigate through the available options: Information, Membership, and Dismemberment.

⚙️ UI Components

Element	Type of Control	Properties	Description
Header	Text	Dynamic text with name	Personalized welcome to the citizen.

Information Button	ListTile	Icon: info	Navigate to citizen data.
Affiliation Button	ListTile	Icon: add	Allows you to join a party.
Unsubscribe Button	ListTile	Icon: delete	Allows you to start the disaffiliation process.
Log Out Button	ElevatedButton	Red	Ends the current session.

Screen: Citizen Information



📍 Location:

From the dashboard > Information.

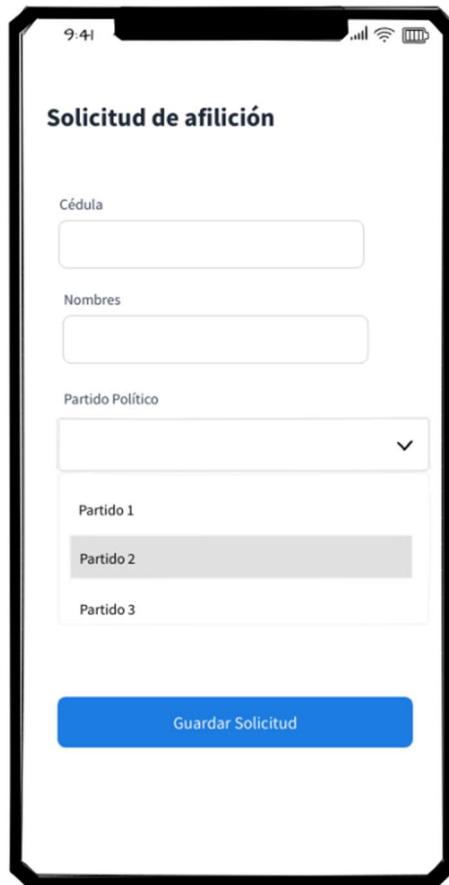
⌚ Purpose:

Display current details and membership history of the citizen.

⚙️ UI Components

Element	Type of Control	Properties	Description
Full name	Text	Dynamic	Full name of the citizen.
ID card	Text	Dynamic	Registered ID number.
Wallet Address	Text	Dynamic	blockchain address .
Current affiliation	Text	Dynamic	Party to which he is affiliated.
Membership history	ListView	3 records in example	Membership history with date and status.
Menu Button	ElevatedButton	Text: 'Menu'	Return to the main menu.

📱 Screen: Affiliation



Location

From the main Dashboard , press the 'Join a party' button.

Purpose

Allow citizens to select a political party and register their affiliation.

UI Components

Element	Type of Control	Properties	Description
Qualification	Text	Text: 'Political Affiliation' Size: 22px Weight: Bold	Main screen header
Dropdown : Matches	DropdownButton	List of enabled matches	Allows you to select a political party
Button: Join me	ElevatedButton	Text: 'Join' Color: Green	Send the membership request to the backend

Validations

Field	Validation Rules	Error message
Game	A valid value must be selected	Select a political party to continue

Backend Processing

Verification that the citizen is not currently affiliated with any party. Registration of the affiliation in the database.

Security

HTTPS, active identity verification, digital signature if applicable.

Navigation

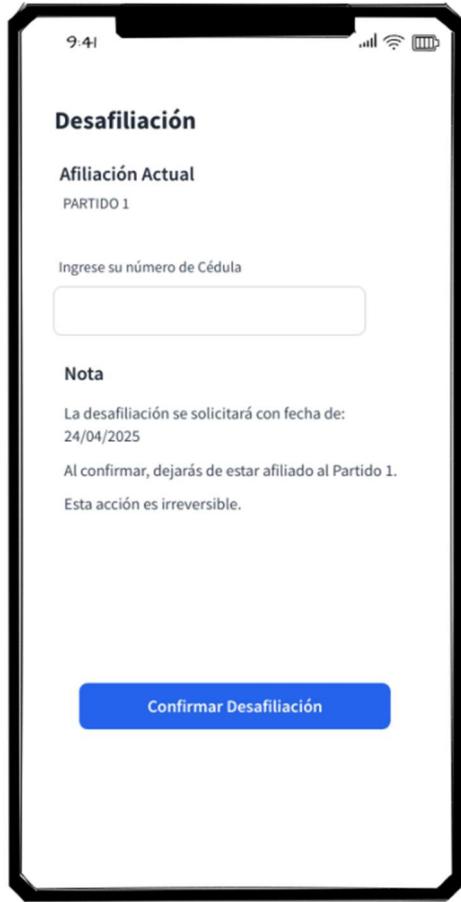
Action	Destination	Description
Tap 'Join'	Confirmation	Visually confirm the membership registration

Tap Back

Dashboard

Return without saving
changes

📱 Screen: Disaffiliation



📍 Location

From the Dashboard , press the 'Unsubscribe' button.

🎯 Purpose

Allow citizens to cancel their current membership.

⚙️ UI Components

Element	Type of Control	Properties	Description
Qualification	Text	Text: 'Disaffiliation' Size: 22px	Header
Informative Text	Text	The name of the current match is displayed	Informs the citizen of his current affiliation

Button: Unsubscribe	ElevatedButton	Text: 'Unsubscribe' Color: Red	Confirm the cancellation action
------------------------	----------------	--------------------------------------	---------------------------------

Validations

Field	Validation Rules	Error message
Confirmation	You must accept the action	Are you sure you want to continue?

Backend Processing

Revokes the citizen's membership. Updates the status in the database.

Security

HTTPS, user JWT token validation, event auditing.

Navigation

Action	Destination	Description
Tap 'Unsubscribe'	Confirmation	Displays successful operation message
Tap Back	Dashboard	Cancel the operation

Screen: Confirmation



Location

Upon completion of a successful membership or disaffiliation.

Purpose

Display a success message to the user.

UI Components

Element	Type of Control	Properties	Description
Icon of success	Icon	Green check icon	Indicates success

Message	Text	Dynamic text according to operation	Reports successful result
Button: Return to the beginning	ElevatedButton	Text: 'Return'	Redirects to the dashboard

Validations

Field	Validation Rules	Error message

Backend Processing

No further processing, just presentation.

Security

HTTPS, active session verified.

Navigation

Action	Destination	Description
Tap 'Back'	Dashboard	Return to the main menu

Screen: Citizen Dashboard

Location

After successful login , first screen visible.

Purpose

Provide a summary of the citizen's situation and quick access to options.

UI Components

Element	Type of Control	Properties	Description
Welcome	Text	Name of the citizen	Personalized greeting
Personal data	ListTile	Name, ID, state	Displays citizen information
Button: Affiliate	Button	Text: 'Join me'	Access affiliation
Button: Unsubscribe	Button	Text: 'Unsubscribe'	Access disaffiliation
Button: View Affiliation	Button	Text: 'View status'	Status query

Validations

Field	Validation Rules	Error message

Backend Processing

Obtaining data from the Citizenship and Affiliation API, rendering buttons by status.

Security

Active session, role-based authorization, XSS protection.

Navigation

Action	Destination	Description
Tap on action buttons	Corresponding screen	Navigate according to the chosen action
Logout	Login screen	End the session

