# Digital Voter ID – User Interface Design Specification

📘 Document version : 1.0

📅 Date: July 26, 2025

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📂 Repository : https://github.com/democracyonchain/eulalia-documents

🖼️ Figma UI Mockups :

- Web: [ Figma Web UI Link] https://www.figma.com/design/2JIob1tJUv5bAxjOM8wVcx/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

Interfaz de usuario gráfica, Texto, Aplicación

El contenido generado por IA puede ser incorrecto.

**🧭 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

Interfaz de usuario gráfica, Aplicación

El contenido generado por IA puede ser incorrecto.

## 🧭 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. |
| Canton | 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/Canton/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**

Interfaz de usuario gráfica, Aplicación, Teams

El contenido generado por IA puede ser incorrecto.

**🧭 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

Interfaz de usuario gráfica, Aplicación

El contenido generado por IA puede ser incorrecto.

## 🧭 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

Interfaz de usuario gráfica, Texto, Aplicación

El contenido generado por IA puede ser incorrecto.

## 🧭 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 )

Interfaz de usuario gráfica, Texto, Aplicación

El contenido generado por IA puede ser incorrecto.

**🧭 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

Interfaz de usuario gráfica, Aplicación

El contenido generado por IA puede ser incorrecto.

**🧭 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

Interfaz de usuario gráfica, Aplicación

El contenido generado por IA puede ser incorrecto.

**🧭 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

Interfaz de usuario gráfica, Aplicación

El contenido generado por IA puede ser incorrecto.

## 🧭 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

Interfaz de usuario gráfica, Texto, Aplicación, Chat o mensaje de texto

El contenido generado por IA puede ser incorrecto.

## 🧭 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

Interfaz de usuario gráfica, Aplicación

El contenido generado por IA puede ser incorrecto.

## 🧭 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 |