

# Smart contracts Must Docs

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## Introduction

Must Docs was developed for you to manage your personal information in a decentralized way, safely and easily.

The app was created to save user data on the Blockchain and give the user the power to control their own data.

The application is developed with a smart contract architecture, created to save and manage user data and the relationship between users and validators.

- Secure storage of personal information
- Safely validated information
- Authorized validators
- Published owner-approved certificates

## Smart Contracts

Must Docs smart contracts are Ownable and Role-Based Access Control.

The Ownable module provides a basic access control mechanism, where there is an account (an owner) that can be granted exclusive access to specific functions.

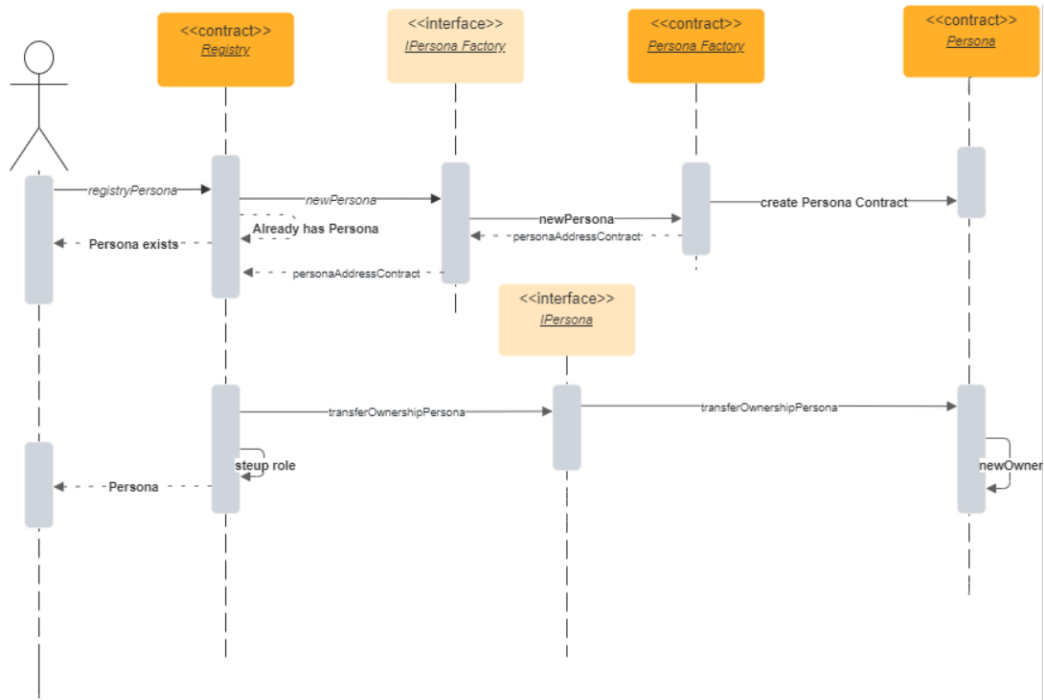
The Access Control module allows you to implement a role-based access control mechanism.

The Registry smart contract is responsible for maintaining the ecosystem of roles. It communicates with the Factories Persona and Validator interfaces to create new records.

All his communication is done through the smart contract interfaces.

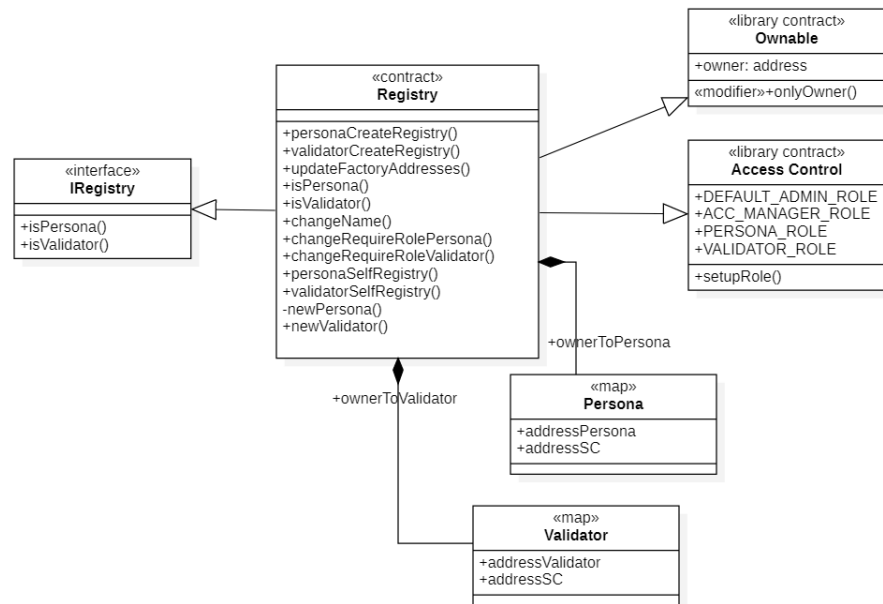
This way it facilitates the update process if necessary.

Below is a demonstration of the communication between smart contracts to create Persona contract:



## Registry

The Registry smart contract is responsible for creating Persona and Validator by communicating through the Persona Factory and Validator Factory interfaces.



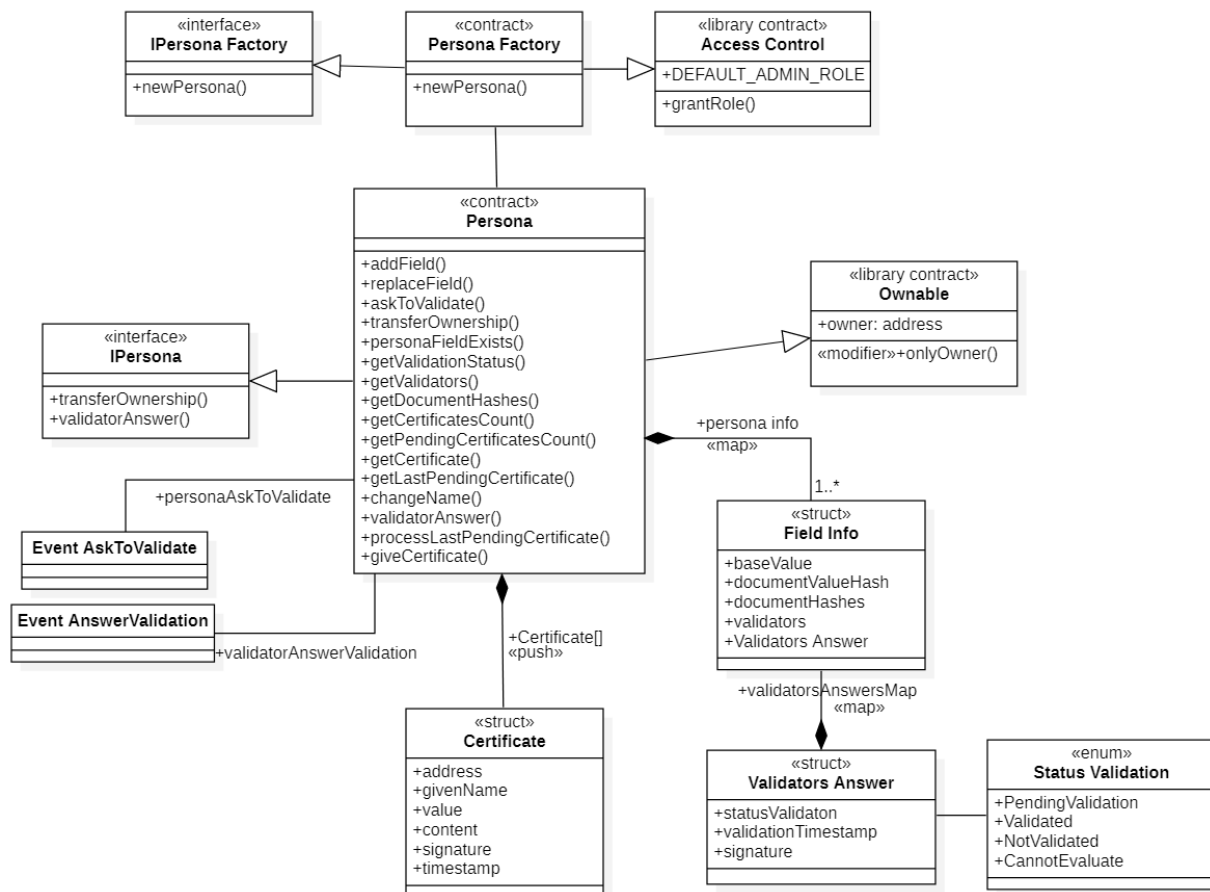
## Functions

Function	Parameters	Description
personaCreateRegistry	address, name	Check if the address is already registered as a Persona, if not, ask Persona Factory to create the Persona smart contract and add the address to the Persona role.

validatorCreateRegistry	address, name	Check if the address is already registered as a Validator, if not, check with the Validator Factory if the address has permission to create the Validator smart contract, if the address has permission, the Validator smart contract is created and added to the Validator role.
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## Persona

The Persona smart contract is responsible for adding Persona registries and certificates, managing the access of the authorized validator to Persona registries and thus validating the information.



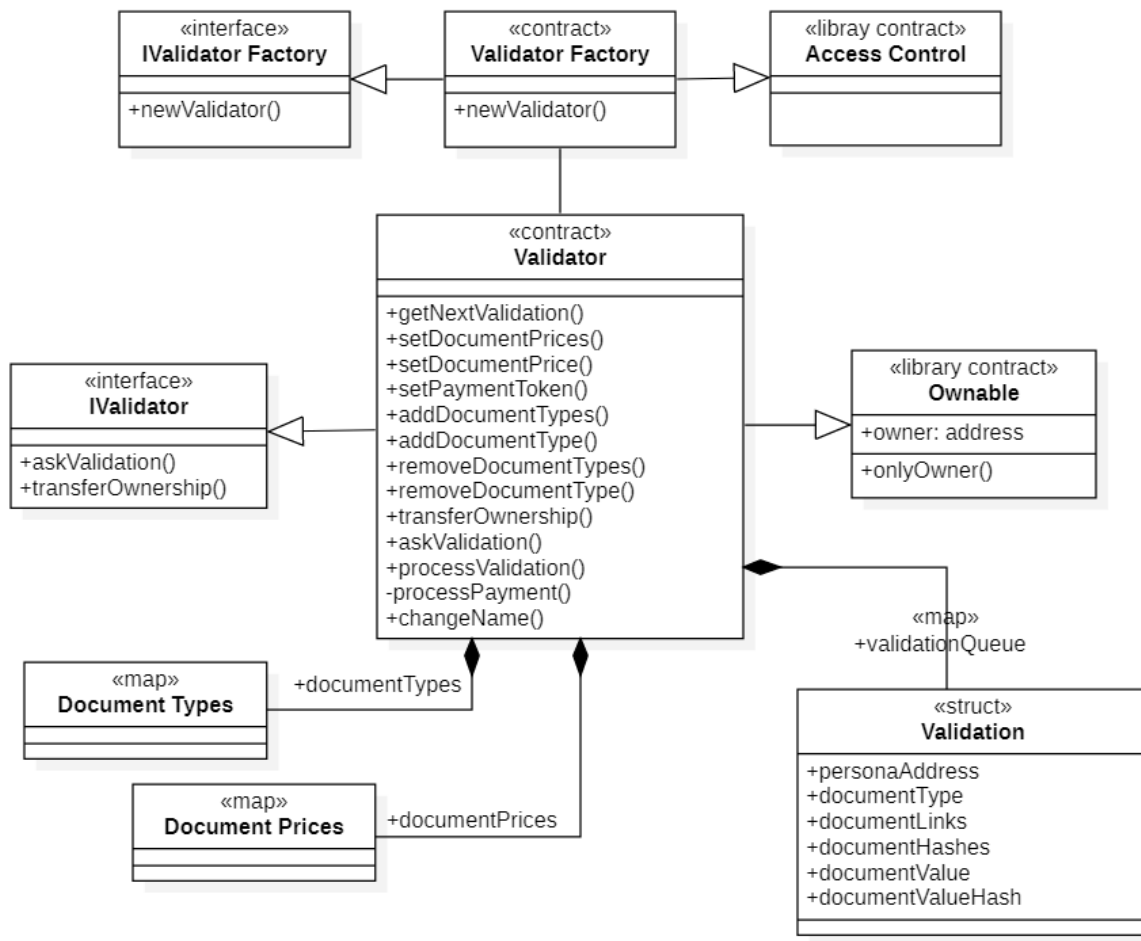
## Functions

Function	Parameters	Description
addField	onlyOwner documentType, documentValueHash, memory documentHashes	The Persona contract owner can add registry in your smart contract.
replaceField	onlyOwner documentType, documentValueHash, memory documentHashes	The Persona contract owner can change the validator of your registry in your smart contract.

askToValidate	onlyOwner validatorAddress, documentType, memory documentLinks, memory documentValue	The Persona contract owner can define the validator of information in your smart contract and ask to validate your registry.
validatorAnswer	documentType, status, timestamp, memory signature	The authorized validator can use this function available in the Persona interface to select one of the options: Not Evaluated, Validated, Not Validated for Persona registry.
giveCertificate	givenName, value, content, signature	Add a new pending Certificate.

### **Validator**

The validator's smart contract is responsible for storing the record queues for the validator to validate and the validator service configuration.



## Functions

Function	Parameters	Description
setDocumentPrices	onlyOwner memory _documentTypes, memory _documentPrices	Configures the amount to be paid per document type.
setPaymentToken	onlyOwner address token	Configures the currency to be accepted for payment.
addDocumentTypes	onlyOwner memory _documentTypes	Adds types of documents that the validator is able to validate.
removeDocumentTypes	onlyOwner memory _documentTypes	Removes documents from the list of documents suitable for validation.
askValidation	onlyOwner	Adds a record to the validator's pending queue to be validated.

	documentType, documentLinks, documentHashes, documentValue, documentValueHash	
processValidation	status, memory signature	The validator accesses the queue and responds to validation