

# ABSTRACT

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This Master's Degree Thesis describes the development and implementation of a blockchain-based Chain of Custody for digital evidences.

The developed system has three main components or subsystems. On one hand, we have a permissioned blockchain (different from well-known public blockchains like Bitcoin or Ethereum, which are permissionless) in which a smart contract is executed. This smart contract allows us to add new evidences' hashes to the chain. Thanks to the hash of every proof, we can check later if the evidence has been modified or not. To implement this permissioned blockchain I have used the Hyperledger Fabric framework and to define the smart contract I have used the tool Hyperledger Composer.

On the other hand, there is a file repository where the copies of those evidences are stored.

Finally, a web application has been built using. Thanks to this one, the different entities involved in the chain of custody process can intervene in it. Using credentials, each user of the web application can visualize a list of cases in which they participate. Every case has a set of evidences and those evidences are transferred between the participants. All this process of exchange of digital evidence is registered in the permissioned blockchain.

## Keywords

Chain of Custody, blockchain, evidence, trusted timestamping, permissions, Hyperledger, smart contract, Business Network, file repository, web application, Angular, Firebase.