EA3 Functional requirements, Non-functional requiretement, Use-cases

Functional Requrements	Name	Descruption	Type
F1	Order managemnet	The system provides functionality for order management, such as creating an order, manipulation with an order based on the order's stare, and cancelling the order. The system can't delete an order.	Functionality
F2	Shipping confirmation	The system has functionality for confirming the delivery state only. The system doesn't have functionality for advanced delivery management, such as claim management or delivery tracking. The system optionally support third party integration, where it is possible to provide additional information (link for third party website)	Functionality
F3	Buyers protection	The system has buyers protection policy. That means, the payments cannot be windraw from system before both sites accept the competness of commitments.Otherwise the system excalate system holsd the payment while the autohity make a decision.	Functionality
F4	Intervention of authority	The system can be intervened by authority (government, legal judgment, ministry), but only on a special frozen state. In a frozen state, can also intermediate an authorized entity. The authorized entity is specified in the system.	Functionality
F5	Providing information	The system provides public information about orders but covers personal data. Anyone can see all orders from the store and orders from a specific customer. But customers have to be anonymized (no personal information revealed to unauthorized entities)	Functionality

Non-Functional Requrements	Name	Descruption	Type	
N1	Public acces	The system is publicly accessible, with the requirement that the user has to have a supported browser or application to interact with javascript and crypto wallet (Metamask).	Accesability	
N2	Public availability	The system has no granted accessibility. Accessibility is based on access to Ethereum network and acces providers. System is independent from falling the acces provider (store hosting). Universal acces point is not included.	Availability, Dependency on other parties	
N3	Deployment to online store solution, Store aviability	The system can be provided as a plug into online store solutions. The pre-programmed solution is not included. The online stores have to provide defined API by the system. The deployed environment has to support JavaSript and has a connection to the Ethereum network.	Deployment	
N4	Documentation of the smart contract	Smart contract has an public documentation. In documentation is described the interaction with it.	Documentation	
N5	Maintainability of application	The application software is possible to maintain by plug-in updates.	Maintainability	
N6	Maintainability of smart contract	The smart contract is not possible to update. Smart contract is necessary to deploy a new contrac in case of the law change.	Maintainability	
N7	Open-source	The software is provided as open-source.	Licence	
N8	Law regulations	System support law codex of the specified country but only to the date of last change. The smart contract is necessary to deploy a new contract in case of the law change and ban the old one. This act is the responsibility of the regulator or responsible entity.	Regulation	
N9	Privacy policy	The system respects the protection of personal data with the exception of the right to be forgotten. The orders are not possible to delete, but the customer is anonym from the public site of view. The store can see details about the customer to create an invoice, and another law described reasons. Deliverer has access to delivery information.	Privacy	

N10	Platform compatibility	System is compatible with all platforms supporting acces requirements.	Compability	
N11	Usability	The system has a similar behaviour as classical payment methods thought intermediary. In every state, the user knows the possible next steps.	Usability	
N12	Device support	The system is supported on all devices supported access requirements N1.	Device	
N13	Identification	The user is identified by his account ID and password is his private key for signing the transactions.	Security	
N14	Cost	Users (customers, online stores, and deliver) is paying a transaction fee for every change of order's state. Providing information is free.	Cost	

Use case	Name	Description	Pre-conditions	Post-conditions	Is extended by	Roles
UC1	Log in	The user can log in to the system through his crypto wallet (Metamask).	Ethereum account, Crypto wallet with sign in functionality			Public
UC2.1	Product details	Product details is list of all products from odrer. For all procusts are porovided this information: Name, PriceWithTax, Tax, Fundable, Description				Customer, Store, Deliverer
UC2.2	Customer details	Customer details are customer name and billing information (street adress, City, State/Province, ZIP/Postal code or equivalent, Phone number, E-mail). Not all information are mantatory.				Customer, Store
UC2.3	Store details	Store details ate merchant account address, merchant name, registration address, authority identification.				Customer, Store, Deliverer
UC2.4	Deliverer details	Deliverer details are the company account address, deliverer, who took goods from the shop and deliver, who gave goods to a customer. Optionally, when returning goods company account address, deliverer took goods from the customer and deliverer, who gave goods to a store.				Customer, Store, Deliverer
UC2.5	Delivery details	Delivery details are the street adress, city, state/province, ZIP/postal code or equivalent, phone number, e-mail and shipping date.				Customer, Store, Deliverer
UC2.6	Payment details	Payment details are cost of goods, delivery cost, tax rate, tax price in total, payment in total (goods + delivery including tax), additional costs (gas fee).				Customer, Store
UC2.7	Order state	It displays information about the state of the current order. The stages can be created, paid, accepted, cancelled, delivered, completed, product are sent back, returned products are delivered, proposal for settlement, frozen, refunded.				Customer, Store
UC3.1	Create order	User or online shop create and order with mandatory attributes. Mandatory attributes are merchant account address, customer account address, delivery method. Follow list of product with these attributes name, priceWithTax, tax, foundable, description. And last payment details cost of goods, delivery cost, tax rate, tax price in total, payment in total (goods + delivery including tax), additional costs (gas fee). The hight storage information can be provided as link and hash for keeping integrity. The details ate specified in the function description.		OrderStare = Created		Customer, Store
UC3.2	Pay for order	Customer pay for the order payment in total cost plus gas fee consumed by the transaction. This gas fee is added additional cost attribute in order.	OrderStare = Created	OrderStare = Paid	UC1, UC2.X	Customer
UC3.3	Accept the order	Store accept the order.	OrderStare = Paid	OrderStare = Accepted	UC1, UC2.X	Store

UC3.4	Cancel the order	Store or Customer role can cancel the order with optional description for cancellation reason.	OrderStare = Paid / Created	OrderStare = Canced	UC1, UC2.X	Customer, Store
UC3.5	Confirm given	The sender confirms the given shipment. It is possible to confirm only the whole product list, not only parts.	OrderStare = Accepted		if role = store or role = customer UC1, UC2. X, if role = deliverer UC1, UC2.3. UC2.4, UC2.5	Customer, Store, Deliverer
UC3.6	Confirm receivement	The recipient confirms the given shipment. It is possible to confirm only the whole product list, not only parts.	OrderStare = Accepted or OrderStare = Shipped	OrderStare = Shipped or OrderStare = Deliveder	if role = store or role = customer UC1, UC2. X, if role = deliverer UC1, UC2.3. UC2.4, UC2.5	Customer, Store, Deliverer
UC3.7	Product returns	Customer selects the returnable product, which wants to return. This returned selection is possible only once and can be returned only product with refundable = true attribute.	OrderStare = Delivered, in order is refoundable product	OrderStare = Product are sent back	UC1, UC2.X	Customer
UC3.8	Confirm product receivement	The store confirms that he received the products.	OrderStare = Procuct are sent back	OrderStare = Returned product are delivered	UC1, UC2.X	Store
UC3.9	Settlement proposal	Store make a proposal for settelent. It provides the reason for the proposal and the amount.	OrderStare = Returned product are delivered	OrderStare = Proposal for settelement	UC1, UC2.X	Store
UC3.10	Accept settlement proposal	The customer sees the reason for the proposal, amount and final returned price (full payed price - proposal amount) + gas fees if the customer returned every product. He accept this proposal.	OrderStare = Proposal for settelement	OrderStare = Refoundation	UC1, UC2.X	Customer
UC3.11	Decline settlement proposal	The customer sees the reason for the proposal, amount and final returned price (full payed price - proposal amount) + gas fees if the customer returned every product. He decline this proposal.	OrderStare = Proposal for settelement	OrderStare = Frozen	UC1, UC2.X	Customer
UC3.12	Judgment for settlement	Authority sees every information about the order (all UC2.X views) and decide the result of the frozen order. It fills returned amount for the customer and for the store and the description for the decision. This amount is sent back to the customer and store account.	OrderStare = Frozen	OrderStare = Refoundation	UC1, UC2.X	Authority
UC4.1	Public information of store orders	It displays the list of the store's orders and the status of the order.	Log in		UC1	Public
UC4.2	Public information of customer orders	It displays the list of the customer's orders and the status of the order.	Log in		UC1	Public
UC5.1	Order list	It displays the list of the orders of the user and the status of the order, and basic information such as total price and store/customer address. It is possible to display more details about the concrete order.	Log in		UC1	Customer, Store
UC6	Upgrade contract	The authority can change the address of the smart contract in the network (Migrate the contract).	Log in		UC1	Authority
UC7	Store management	The store can manage the order delivery methods and other information about the store as contact information. The store can not change its address.	Log in		UC2	Store

UC8	Delivery management	Delivery can change provided delivery methods.	Log in		UC3	Deliverer