

My Health Data

Section 1: Summary

Use Case Summary			
Use Case ID:	HLC-006	Use Case Type:	<i>Vertical</i>
Use Case Title:	My Health Data	Is Use Case supporting SDGs	<i>Yes</i>
		Domain:	<i>2 Healthcare</i>
Status of Case	<i>Proof Concept</i>	Sub-Domain	<i>a – Pharma b – Biotechnology c – Medicine</i>
Contact information of person submitting/managing the use-case	<i>Valeria Queiroz</i> <i>Idealizer</i> <i>E-mail address: valfqueiroz@gmail.com</i> <i>Telephone number: 55 21 99327-5080</i> <i>Social media: https://myhealthdata.github.io/</i> <i>Web site: www.myhealthdata.com.br</i>		
Proposing Organization	<i>My Health Data, Brazil</i>		
Short Description	<i>My Health Data is born, with the purpose of constructing a system where patient is the sole detector of his/ her data, a system which enables not only unified repository, but, above all, ease of access and portability, once the information holder is the user and not the third party.</i>		
Long description	<p><i>My Health Data using the Blockchain technology, we invite everyone, through our interactions, to create a health data network, in which we will be the agents capable of generating solutions, which bases should be:</i></p> <ol style="list-style-type: none"> <i>1. Empowerment of people, where the individual is not the patient, but the agent, the generator and the owner of their information;</i> <i>2. User centralized data generation capable of providing the network with reliable and faithful information;</i> <i>3. Generation and transmission of consistent information, capable of assisting in medical, pharmaceutical and wellness research and remunerating the parties involved;</i> <i>4. Creation of an "anti-fragile" system, supported by multiple nodes of the network, encryption, anonymity and database not corruptible and, at the same time, generic capable of adapting to multiple situations, people and cultures easily;</i> <i>5. User-focused solution, in which the Individuals will always be at the forefront of institutions, whether they are governments or for-profit entities.</i> 		

SDG in Focus (when applicable)	<i>1 – No Poverty</i> <i>3 – Good Health and Well-being</i> <i>5 – Gender Equality</i> <i>8 – Decent work and Economic Growth</i> <i>9 – Industry, innovation and infrastructure</i> <i>17 – Partnership for the goals</i>		
Value Transfer:	<i>Data, tokens</i>	Number of Users:	<i>0</i>
Types of Users:	<i>Patients, Partners (hospitals, clinics, doctor office, laboratories)</i>		
Stakeholders	<i>Government, Researchers, ...</i>		
Data:	<p>In My Health Data the information is always stored under this primary key and with the permission of the key owner. The system, based on the patient's permissions, controls access to medical records, permits the inclusion, removal and reading of medical records by the patient or third parties, makes the sale of such data available to third parties, where negotiation is done directly between interested parties, but always preserving the identity and anonymity of those who make them available.</p>		
Identification:	<i>Identification mechanism and rules; ability of participants to be anonymous, etc.</i>		
Predicted Outcomes:			

Overview of the Business Problem or Opportunity
<i>The platform that consists of a smart contract that not only validates operations, but also stores and creates a patient-centred health data network that can be used in a variety of applications such as academics surveys, hospitals, laboratories and the pharmaceutical industry.</i>
Why Distributed Ledger Technology?
<i>Due to the characteristics of the DLT, such as immutability, transparency, security, distribution, verifiable, technology can take these characteristics to medical data ensuring safety, ensuring that the patient knows who is accessing their data and ensuring universal access from anywhere in the world, anytime.</i>

Section 2: Current process

Current Solutions
<i>If there are existing systems which automate the above business problem/opportunity.</i>

Existing Flow (as-is)		
Step	User Actions	System Actions
1.	<p><i>The patients information have been spread out in different silos, which are Labs, hospitals, doctor offices.</i></p> <p><i>As consequence, the patient does not have access to all his/her information when needed, mostly when they are sick.</i></p> <p><i>This decentralization generates the lack of interoperability and lack of control over health information, that causes a fact known as asymmetry of information.</i></p>	<p><i>Decentralization of health data in different silos, such as hospitals, clinics, laboratories, doctors offices.</i></p>
2.		

Process scheme (as-is)

Data and information (as-is)		
Data	Type	Description
1	<i>Documents: There is no pattern</i>	<i>Documents and data spread out in different silos.</i>
2	<i>Payment transactions</i>	

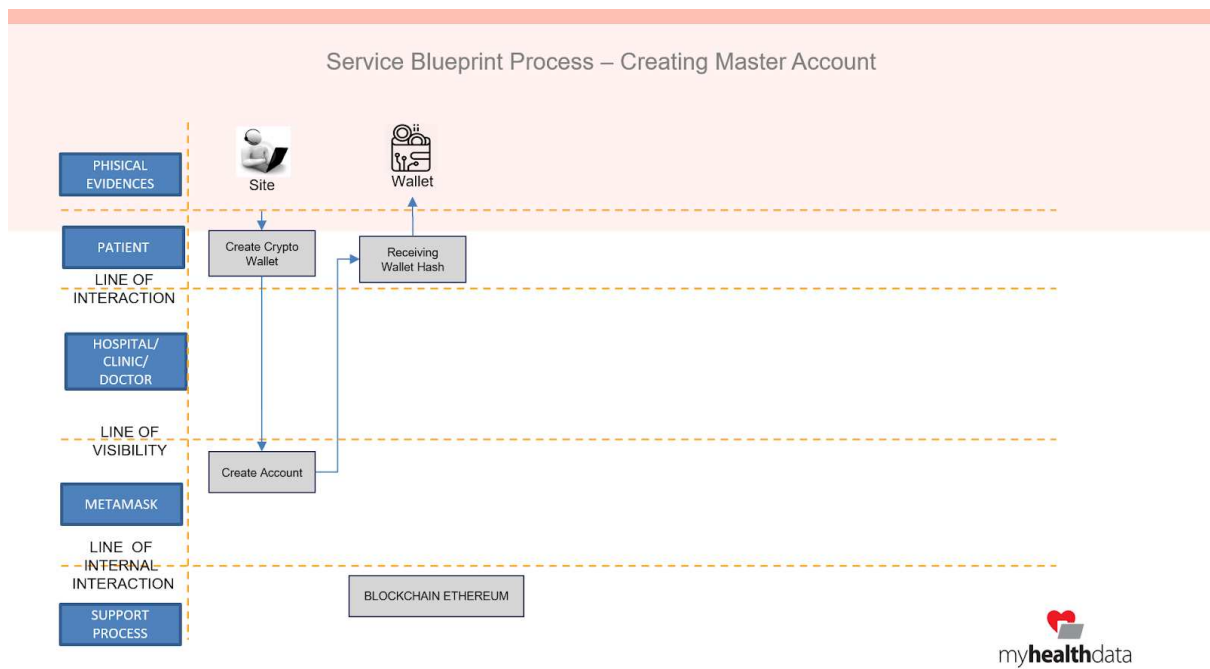
Participants and their roles (as-is)		
Actor	Type/Role	Description
1	<i>Patient</i>	<i>Patient has no control or possession over his/her health data.</i>
2	<i>Hospital/Clinic/Doctor Office</i>	<i>Health data are stored in a decentralized way, each entity storing it their respective silos.</i>

Other Notes
<i>Any assumptions, issues</i>

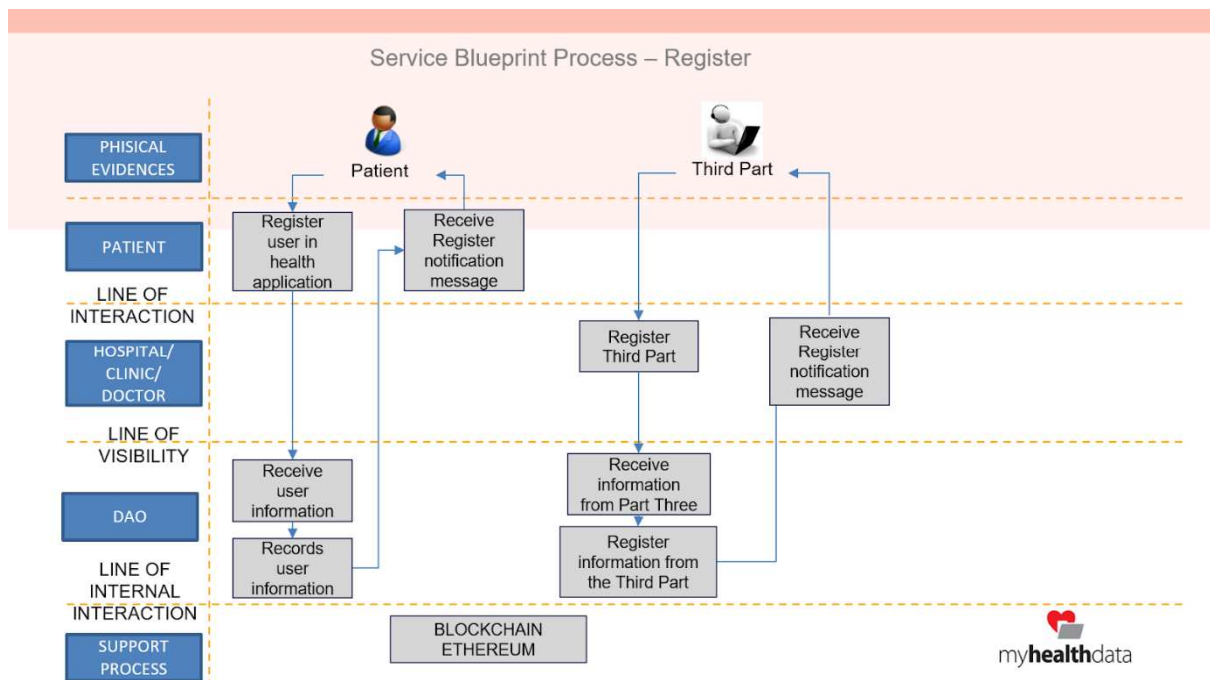
Section 3: Expected process

Expected Flow (to-be)		
Step	User Actions	System Actions
1.	<p>My Health Data proposes, through the empowerment of the patient, making them the sole owner of their medical data, solving the above mentioned problems of information silos, interoperability and asymmetry of information, having developed, for that purpose, a smart contract, published in the blockchain Ethereum network, which is capable of providing a patient-centered medical data repository system, having as primary key its Ethereum account.</p> <p>The My Health Data smart contract has been structured in a way that any entity can develop applications on it, as long as the information is always stored under this primary key and with the permission of the key owner (the patient). Thus, the system, based on the patient's permissions, as described above, controls access to medical records, permits the inclusion, removal and reading of medical records by the patient or third parties, makes the sale of such data available to third parties, where negotiation is done directly between interested parties, but always preserving the identity and anonymity of those who make them available.</p>	<p>Install and create a Metamask application and access https://abezzerrademenezescavalcanti.github.io/saudechain</p>
2.		
Process scheme (to-be)		

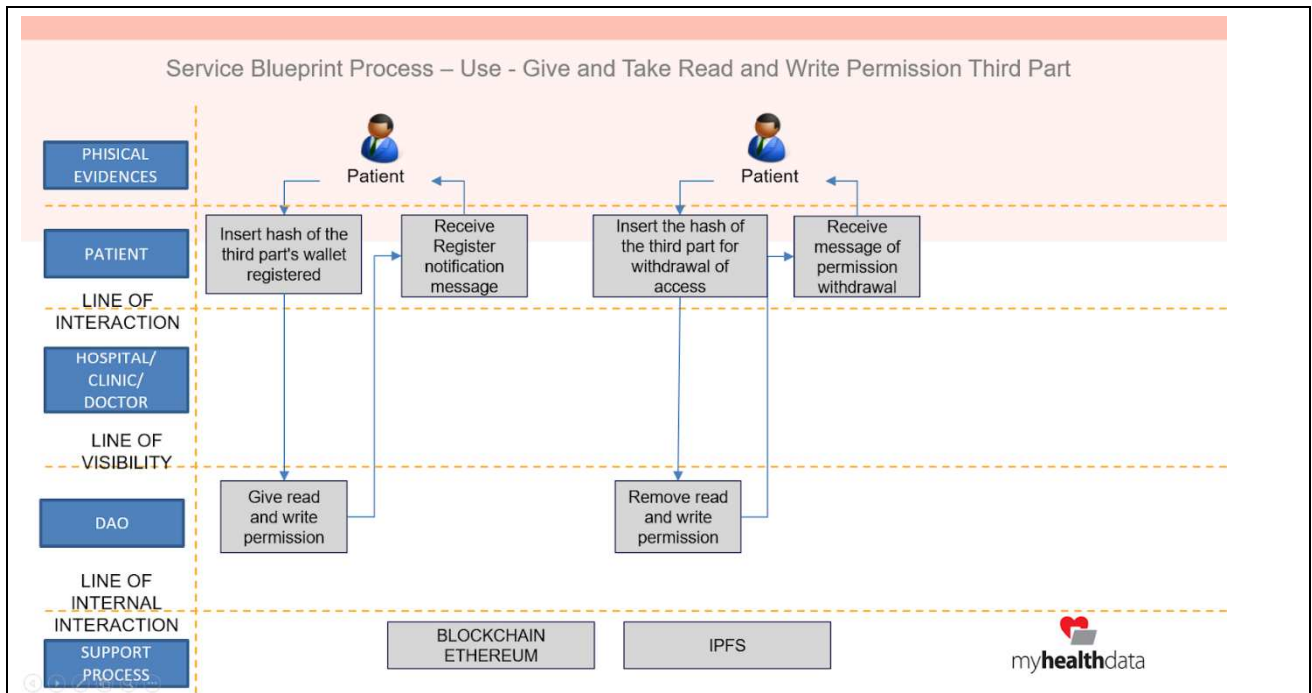
Master Account Creation



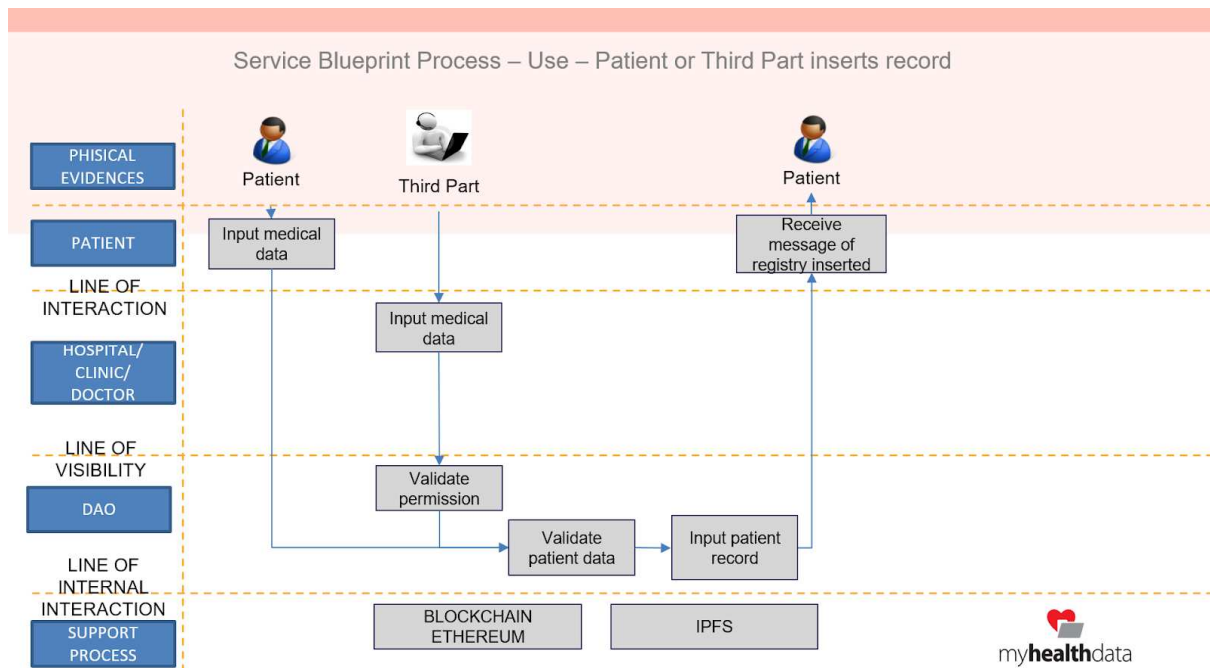
Patient and Third Part Registration



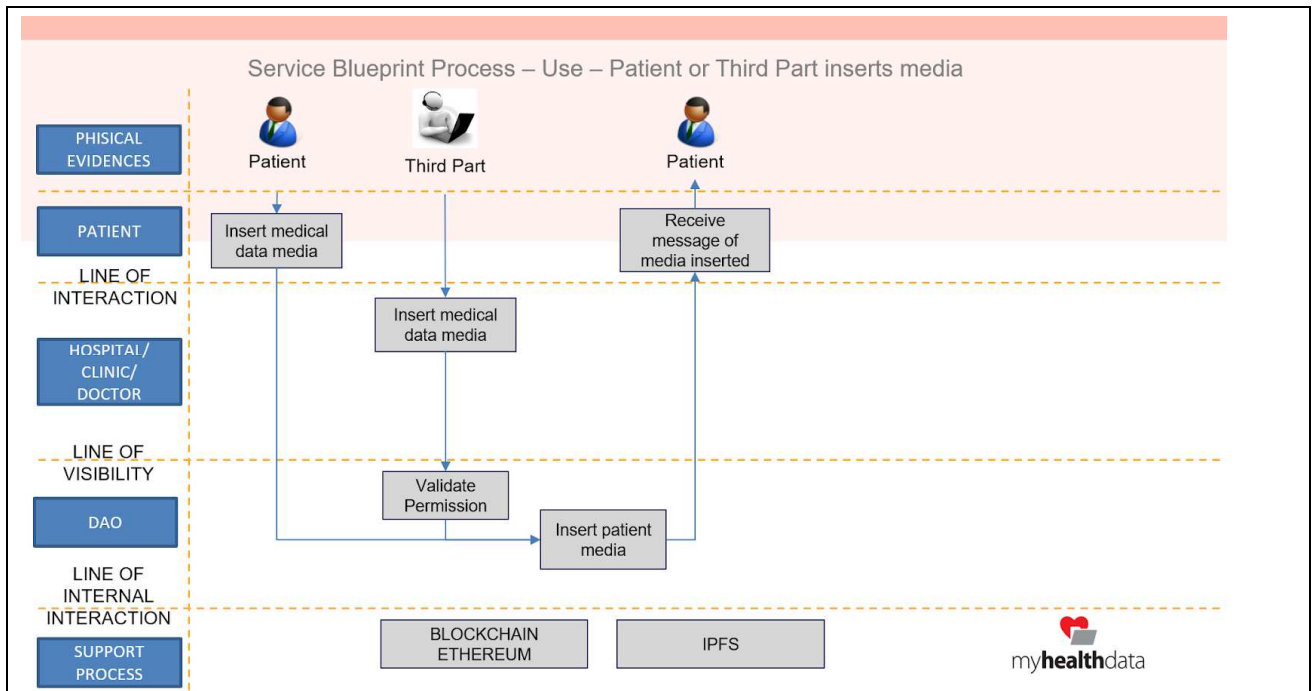
Use - Third Part reading and writing permission



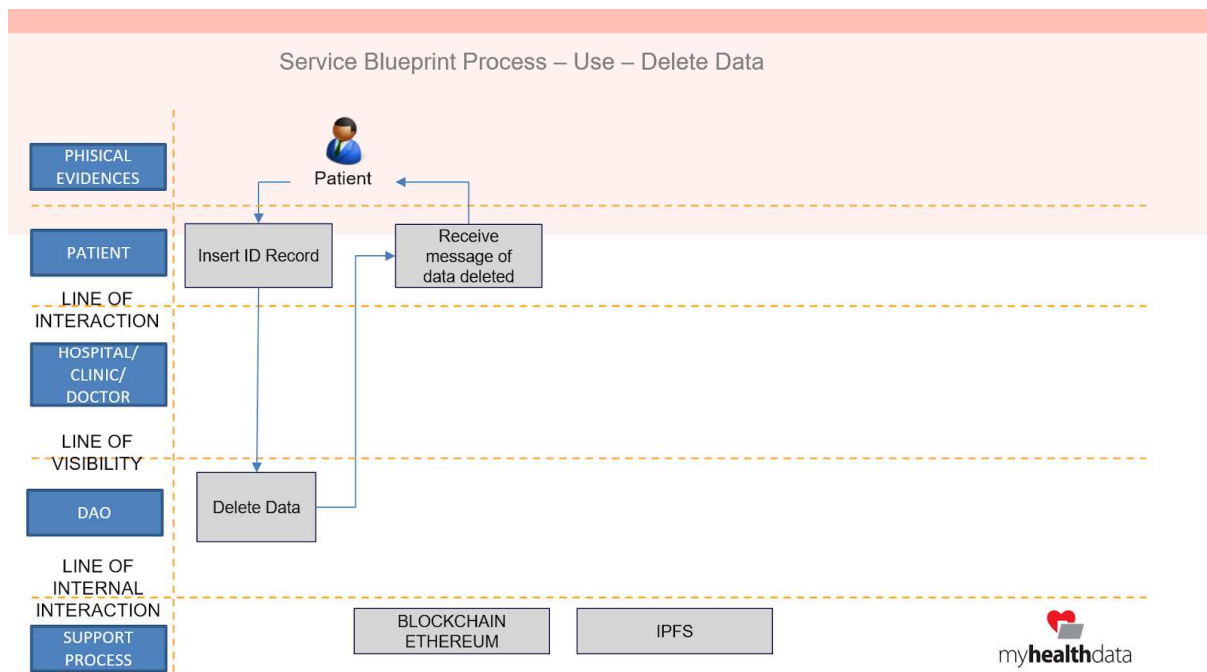
Use – Patient or Third Part inserts record



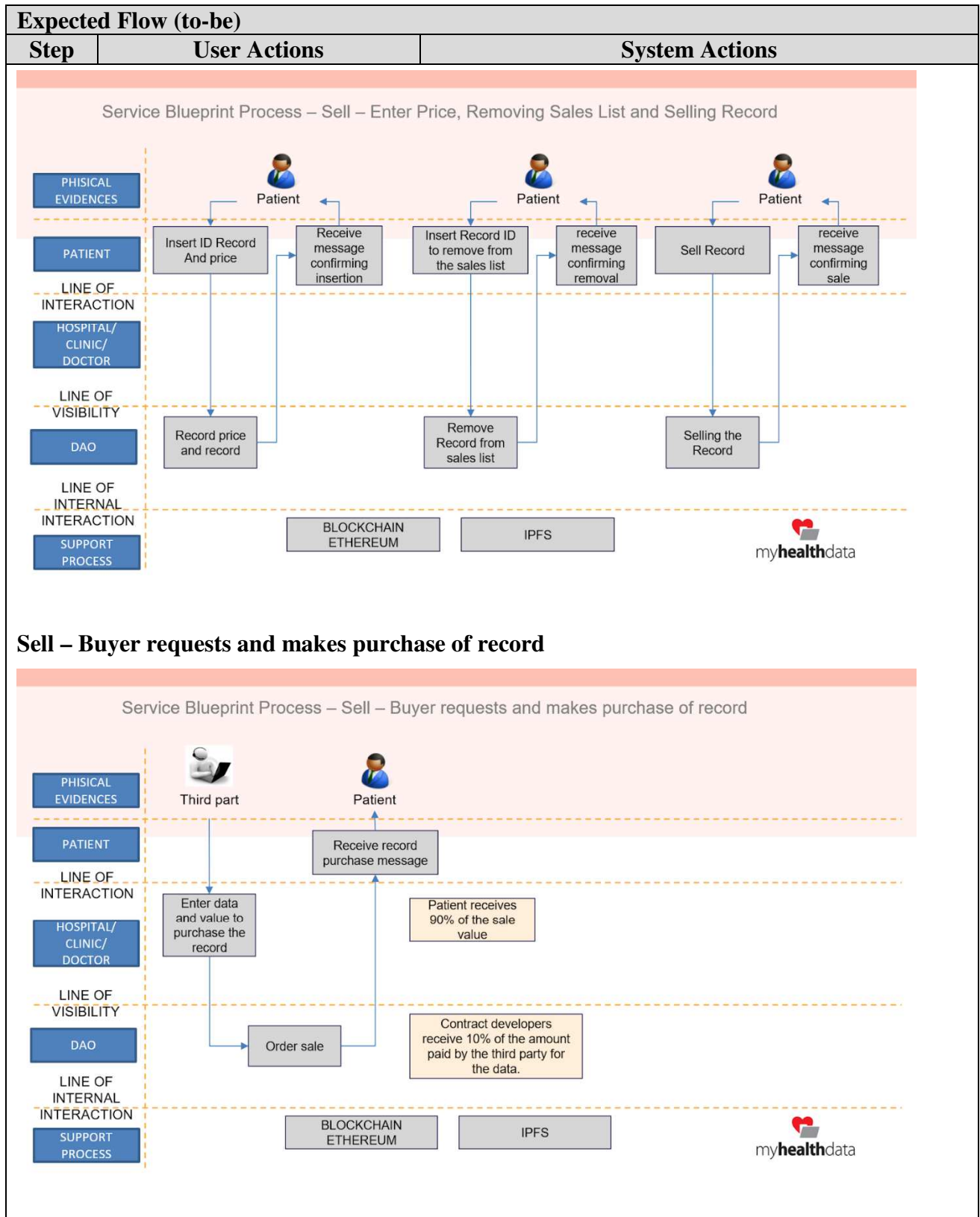
Use - Patient or Third Part inserts media



Use - Delete Data



Sell – Enter Price, Removing Sales List and Selling Record



Participants and their roles		
Actor	Type/Role	Description
1	Patient	Patient can create register, give third party permission to read and insert data, sale permission and delete data.

Participants and their roles		
Actor	Type/Role	Description
2	<i>Hospital/Clinic/Doctor Office</i>	Receive permission from patient to read and insert data and buy data.
3		

Data and information		
Data	Type	Description
1	<i>Documents</i>	
2	<i>Payment transactions</i>	

Security and privacy
1.

Main Success Scenario + expected time line
<i>Description of DLT-based solution, which potentially will be created</i>

Conditions (pre- or post-)
1.

Performance needs
<i>What potential performance specs (frequency of use, transactions per second, confirmation time, sync time, etc.) are expected. What scalability, interoperability, reliability, accessibility needs exist.</i>

Legal considerations
<i>For each issue, please describe the name of the legal act containing the identified barrier, what is the negative impact and a proposal to overcome this negative impact.</i>
1.

Risks
<i>Legal, business and technical risks related to use case</i>

Special Requirements
<i>Business and technical requirements of use case</i>

External References and Miscellaneous

List of references for standards or well-defined mechanisms if any of requirements calls for the implementation of a standard or protocol or other well-defined mechanism. If the use case needs non-standard consensus mechanisms or cryptographic tools, such information should be included here. Also such section may be used to provide more information regarding the use case including links to any kind of related materials, terms and descriptions or any other related information.

Other Notes
Any assumptions, issues