# ModusEsse (THEmeasure) – Self Intelligence (or QS) on the blockchain.

Founding Paper Draft 1

Introduction

Measuring self intelligence on a peer or peer to peer basis would further the evolution of being. The next wave of Internet decentralization is underway. Currency/banking with bitcoin and others on the way, such a ethereum.org decentralizing Law and peer to peer data storage networks via e.g. maidsafe.net. These utility blockchain technologies fundamentally disrupt and further open up the decentralization frontier of innovation. Individuals are the building blocks of intelligence and the augmenting of this intelligence can be achieved by self measuring using sensors to put more of life on the record. Problem complexity for an individual and as a collective means the discovery of new knowledge and its application is becoming increasingly difficult. Current technology aims to solve the complexity by centralizing data in data centers and by centralizing problem solving algorithms (increasingly AI, artificial intelligence in nature) in the hands of centralized bodies, corporate or government. ModusEsse provides a decentralized Autonomous Application Environment to allow individuals to measure their life and share self intelligence peer to peer to address complex collective problems. Measurers take sensor data and extract meaning to augment self intelligence. The measurers require an incentive signal from the individual to reward complex problem solving. An EsseCoin will be the reward mechanism. Historically, wealth, health and wellbeing are not measured directly, proxy 'value' mechanisms like money are used along with centralized trust institutions. EsseCoin decentralizes the capture of sensor, measurers and blockchain utilities to produce a bottom up fabric for individuals and society to evolve.
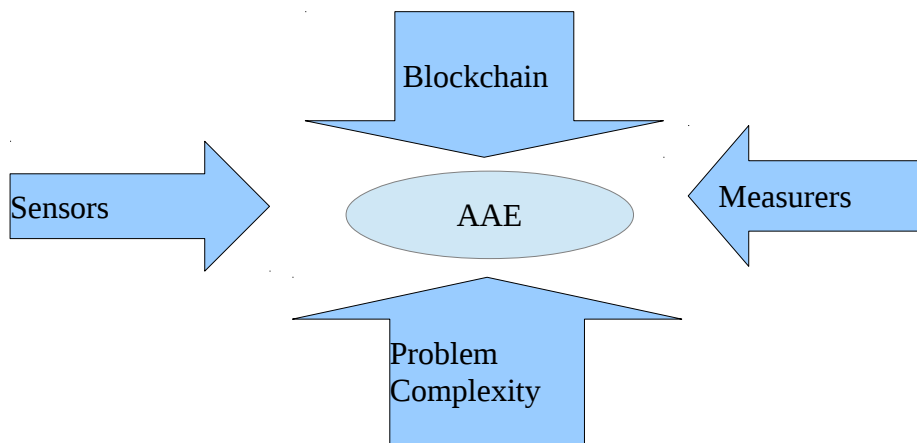
EsseCoin

The cryptocurrency for the ModusEsse decentralized network.
Pronounce 's'

Proof of data - Solving the subjective value problem (bitcoin mining prime numbers)
Money of any type, fiat or crypto is a proxy value. It does not directly measure value or record reality. EsseCoin is different, it is backed by data (of reality). Putting a value on data when each individual can measure the same data differently is the fundamental problem the esseCoin is addressing. In short how can we trust the underlying data tied to the esseCoin?

Solving 'gaming the system' problem (bit coin double spend)
Tied to existing human monetary and contract systems e.g. fiat or bitcoin with elasticity in pricing

Seeding esseCoins

Relative and Absolute Value

Incentives:
Individuals – augment intelligence, freedom, accuracy of reality, simulation of the future.

Measurer - (miner/farmers) sensors, ML, AI, AGI: Essie coin [attention value of beings will guide and motivate further evolution of algorithms/sensors to solve more complex problems.]

AAE Protocol Technology
Introduction Autonomous Application Environment Protocol (see technical paper)

AAE core Protocol

Adoption evolution
The decentralization of money, the decentralization of law, the decentralization of intelligence.

Key Existing market/environment factor pre esseCoins

Case studies
Examples:

1. Self example
1.1 Individual with a personal trainer & gym membership (wellbeing)
An individual joins ABC gym, the contract concluded on the ethereum platform. In addition to access to the gyms facilities they conclude a Peer to Peer Ethereum contract with a personal trainer. This 'smart' contract adapts to measurement feedback data points. For each of these data points an agreed sensor mechanism is used, pictures taken, weight, body fat, pulse rate, and the Personal trainer sets target goal they 'guarantee' to deliver. The timing of assessment is also detailed. The individual also

agrees on the contract to follow the activities recommended by the trainer. They include reference to their own personal tracking e.g amiigo wearable data.

The smart contract is set live. The individual has chosen to setup an AAE tool and enter into other smart contracts with a range of measurer applications, e.g. bone mass, mental wellbeing, sleep analysis. A smart contract is also entered into with storage and CPU utility service e.g. maidsafe.net. Their chose display devices is via HTML5 websites. A smart contract to share data collected in the gym by the gym owner and individual is also agreed.

The personal trainer also sets up an AAE container. This manages all the smart contracts between them and the gym and all the individual customers. They ask for access to personal data to be shared by a set of Measurer services that assist with generating personalized exercise programmes. They use a bitcoin smart contract to pay the gym for being a privilege provider at their facility.

The gym owner has a bitcoin smart contract to pay the rent to their landlord as well with rented sports equipment and built in sensors. They use a AAE to provide data utility services give back data to the individuals and to provide feedback to sensor manufacturers and Measurers.

The personal training activities proceed day by day and the chosen weekly agreed mechanism trigger payment points. The data captured is used to incentives the personal trainer and their support Measurers to further improve the assessment contract. The same data fuels sensor innovation to measure more accurately.

This is a finite well being contract and the close of the contract, data and value is shift across all parties via EsseCoins.

1.2 Individual chiropractor (health-pain)
(based on personal experience) 20 years ago a burning pain started to be experienced during long distance walks but then disappeared. 10 years ago this burning neck shoulder pain became more frequent and over the last 2 years it felt like the pain was becoming constant and chronic. As a QS'er you try a combination of exercises and try to understand what is causing the pain, poor computer posture and long hours at, injuries in other parts of the body reducing the frequency of swimming training and a re-ignited passion for playing the violin for hours on end. Any cause and affect there or is it just getting old? As the exercises seemed to work and then not and then an acute pain affect sleep night after night the result was a series of panic attacks. Another individuals knowledge was sought. I decided a chiropractor was a better choice than the physiotherapist I had tried a couple years earlier. Through friends recommendation and web search I concluded on paying for an assessment that lead to 10 treatments and an ongoing monthly checkups. A pain questionnaire is used as the 'success' feedback mechanism between the practitioner and me. The treatments and more important exercise routine has reduced the chronic status of the pain but the battle goes on figure out the underlying cause.

What I could do via an AEE. Replace the pain questionnaire with a smart contract. I have taken weekly photo of my posture pre starting and during the treatments. I got told X muscle are short. So, OK, I put that on the record, agree a sensor to measure the muscle length e.g. via photo and then time period to measure those. In time a 3D scanner sensors would increase accruancy of position of individual muscles and bones and be available in home and during chiropractor treatments.

2. Research knowledge PtoP

Scientist new AI algorithm (cancer)
A cancer researcher with 25 year career, starting out at an University research lab before spending, 8 years in a commercial company before moving to lead a team at the UK's largest cancer charity research effort on skin cancer. Aware of quantified self and their own slow progress and limited access to computer modeling resources, sensors and staff, takes the bold move to put their molecular chemistry and cell biology knowledge on the blockchain via a smart contract. Other University, commercial and charity researcher admire the bold move and act like wise. The machine learning and AI community developers come aware of this new knowledge that needs to be programmed and applied. Likewise, the wearable sensor hardware innovators start a number of crowd funding campaigns to provide new sensors that will more accurately provide data to process.

3. Sensor
New sensors for monitoring X (sensor)
The current generation of wearable sensor require a physical touch between an individual and the sensor to measure O2 levels. The accuracy of measurement is not as high as expected. A tinkerer working on monitoring the human body electromagnetic field for pulse rate with out touch releases the electronic code and hardware spec. on a smart contract. A startup entrepreneur pickups on this innovation and sees a way to apply it to O2 levels.

4. Measurer
Prediction Machine learning Open source code e.g. http://prediction.io/ A QS'er, developer and self taught data scientist downloaded a copy of Prediction IO to perform personal data experimentation. They chose to run the code in an AAE on their own data only. After, weeks and months the algorithm is tweaked to provide actionable activities and foods to improve their sleep quality. Would this ML work for others? They reach out to a friend and enters into a PtoP smart contract and the code is synced via the two AAE's. The sleep predictions come out for his peer friend are favorable. Word gets out and the app spreads peer to peer. The smart contract between friends include the opensource code, sensor used and visualization utilities. The initial developer knows there is still more progress to made and maybe the aggregation of all the peers data running the app. would lead to more improvements in sleep and a better scientific understanding of the science of sleep.

They put out a smart contract request to share data, explaining this would involve running experimental code and be a secure AAE module. 60% of the network using the starting app sign the contract. New progress is made. Word gets out to the existing sleep scientific community and to one University researcher in particular that researches in the area and that had signed up the basic self sleep code app. They believe their knowledge made into a app could help conclude the next frontier. They reach out to the core developer and they agree to work together along with a 3 other coders. A new smart contract is put out to the Peer network and 30% agree to participate in the updated app. This leads to fundamental new understanding of sleep, all those in the network update their apps and sensors. A range of knowledge is produced including mediation techniques to chemical(drug medicine) to boost sleep quality and thus daily awake time intelligence for the individual improves dramatically.

Community
Core founders
Core developers
QS
Machine learners
Existing crypto

Sensor (kicker starts to DIY)

Funding
Issue of EsseCoins through a crypto public offering, accepting, Bitcoin, Ether or Safe Coins.

Govern-ship
Opensource foundation, building on Lunix, bitcoin, ethereum style.

TimeTable

September-December 2014 – founding documentation, technology road map, core team build.

January-June 2015 – built of prototype Protocol

July-September 2015 – build of first application

October 2015 – CryptoIPO of EsseCoins

March 2016 – beta release of ModusEsse protocol.

September 2016 – Full 1.0 protocol release