Sky11

Economy of Things

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Sky11 is an innovative software infrastructure backed by a new crypto-currency. Its first use is to make any object unforgeable thanks to a cutting edge microchip which allows users to verify its origin and authenticity via an ad-hoc smartphone application. These simple core services, will create a unique ecosystem, neutral, and worldwide decentralized for the Economy of Things, which will benefit to all users and economical actor aiming to join it. An unlimited number of additional services can be plugged into it in a modular manner.

Eleven is an strong tamper-proof anti-counterfeiting technology for the Internet of Things (IoT), as well as a framework for managing these things.

Sky (⏲) is the token that fuels the Eleven framework.

Together they form Sky11, the magic formula that enables the Economy of Things (EoT), for P2P, B2C and B2B markets related to physical goods.

[Read IBM Institute for Business Value's Executive Report on EoT]

Anti-counterfeiting

Eleven ensures the anti-counterfeiting of physical objects with a combination of 3 strong and independent layers of high and low tech, that makes it the most secure and reliable anti-counterfeiting technology available today.

Ecosystem

For the benefit of every participant of the Sky11 ecosystem, and for the value of the Sky token, essential requirements for growing a fair, stable, healthy and strong ecosystem will be met, thanks to:

- Open Source

Eleven's code as well as all related software and toolkits will be made available for free to anyone as Open Source.

- Decentralization

In order to guarantee economic freedom to everyone Sky11 operates on a blockchain with smart-contracts, there is no central authority to grant or restrict access to the ecosystem.

- Standardization

In order for the Eleven framework to meet industrial requirements as well as flexibility, every type of services will be independent from each other and standardized as REST APIs. Service providers can then make their services available to anyone by registering them along with the corresponding service type, smart-contract and Sky cash-flow. In the same manner, any person or application can transparently browse, subscribe, unsubscribe and pay services on-the-fly. New types of services can be added according to the needs of the ecosystem. Some core services such as registering objects, property swap, etc. will not be modular like services but hardcoded into the core smart-contract of the framework.

Services for users

Anti-counterfeiting

Objects are uniquely identified with hi-tech NFC microchips supporting PKI (crucial requirements for blockchain logistics, and smartphone integration for end users) and/or low-tech QR Code (of which cloning attempts are detected with geographical scanning inconsistencies). These two indicators are sealed into the objects (or their packagings if too small), and irreversibly destroyed if opened or tampered with (sealing and/or packaging). These two layers of security are enforced by a third layer of visual inspection, when an object is scanned, original pictures from the manufacturer can be fetched, so the user can perform an extra check of unique random patterns (paint splash, colored fibers, glitter dust, hologram, etc.) and tampering attempts.

For more details about the technology visit the website of our partner Checkoin.

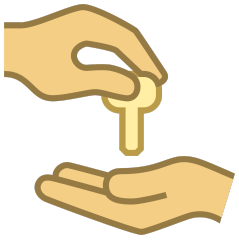
Origin

The universal information provided by the Eleven framework about objects is their origin. The trust of the identity of the origin is a core base feature of Eleven. But it does not mean that the origin can be trusted, this depends on the origin's reputation, user knowledge, appreciation, due diligence or third party services of audit, certification and ethics.

Ownership

The default ownership method is the physical possession of the object in the owner's hands. Which is great for privacy and objects that are meant to circulate from hand to hand (cash, gold, silver, offline crypto cold wallets, etc). However in some cases an object can have its owner registered on the blockchain, thus nonetheless objects cannot be counterfeited, but they can't be stolen for resale either. In the same way as for cryptocurrency wallets, physical objects are owned by those having the corresponding private keys. Eleven wallets do not only hold ownership of Sky tokens, but ownership of physical goods. Ownership can simply change hands when the former owner validate the new owner's key, via Eleven's smart-contract, which irreversibly swaps the keys.

Sale



Swapping ownership is a simple operation when giving an object. However it can be a little more tedious in the case of a sale, especially for distance selling. For such cases Eleven's smart-contract proposes an escrowing option when swapping owner keys of a object.

Alice wants to sell her bag to Bob by postal service for 10. Bob provides his new public key to the smart contract along with the 10. The 10 remains held by the smart contract and ownership assigned to Alice until Bob validates it. So Alice has the guarantee that the Skies are available, but must send the bag in order to receive them. Same for Bob, he must validate the transaction when receiving the bag in order to get the ownership, which triggers the transaction of the 10 to Alice's wallet.

The developer of the application used for the transaction can take a fee, a simple business model to distribute free applications while having steady income, which can be applied to many of the Eleven's services.

In order to handle exchange rate volatility, Alice or Bob can use a stable amount expressed in Earth (see the "Stability" chapter below), or subscribe to standardized third party insurance on-the-fly (see the "Insurance" paragraph below). Or set a minimum amount in Skies, and subscribe to a third party service to complete the transaction in fiat currency, off-Eleven.

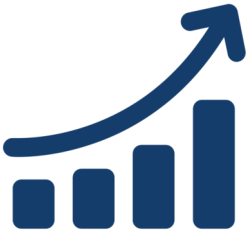
Privacy

Sky11 puts individual freedom and privacy as its number one priority. Hand to end circulation of goods leaves no undesired tracking data behind, no transaction needs to be recorded, the hand to hand exchange is the transaction. In the case of private keys of ownership, their are entirely anonymous.

However, if owners wish so, they can make their identity public, for fame, or prove that some object belonged to a famous person. Persons having the object in their possession can also attach messages and pictures to it, so the life of the object can be browsed by the new owners.

Additional personal data management and KYC services can be proposed, then limits on privacy are left at the discretion of the users, optionally backed by ethical audit services.

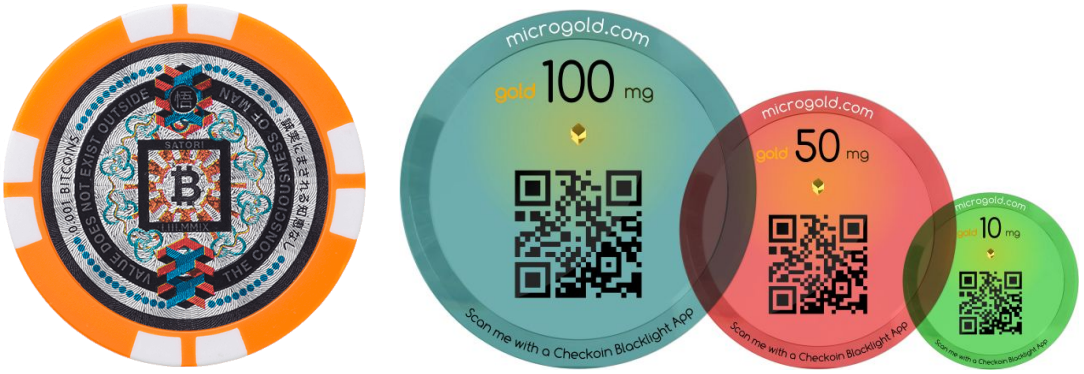
Value



Once the crucial authenticity information of an object is validated, many extra informations and services can be proposed, the most obvious being the value of the object. To do so, the first type of service proposed by Eleven is the real-time estimation of an object. Anyone can propose their standardized REST API biddings to traditional marketplaces and exchanges, for any type of object (like other services they are payable via built-in Sky cash-flow, and prices exclusively expressed in Sky). So scanner applications can display real-time estimation of the object (converted back to fiat or any value system chosen by the user). As anyone can also tag any object with a buy/sell amount, in the long run prices will be evaluated directly from the Sky11 blockchain instead of traditional marketplaces.

Cash

Therefore any object used as a value vector (e. g. precious metals, crypto cold wallets, etc.) can be used as cash by the average Joe, the exact amount can be matched with fiat penies and banknotes. This also enables objects that can circulate from hand to hand to be used as cash, barter, sale, etc.



Stability ⍢

Stabilizing the volatility of a cryptocurrency is very tedious. Sky11 does not pretend to solve this problem, however it will leave the door open for any third party services to propose their own stabilization mechanisms, as alternatives to the use of “raw Skies” for validating the payment of the smart-contracts. Sky11 proposes a simple alternative input/output Sky cash-flow, associated to a dynamic conversion ratio of a stable referential unit, named Earth (⍢). It is up to the users and services to use and implement it. Competition and innovation is open between different Earth, which can also be stabilized by baskets of multiple Earth ratios.

Exogenous Earth can be proposed based on external values (Gold Earth, Euro Earth, etc.). Endogenous Earth can also be proposed, as we know the total number of Skies in circulation, the total number of objects registered on Eleven and their value, we can have an simple and accurate reference to estimate the value of the ecosystem. Hybrid Earth can also be evaluated from assets registered on Eleven that are also generally used as a value referential (e.g. gold coins).

The holding of any referential assets, and their on-the-fly conversion for Skies required to validate the smart-contract is left to each Earth’s third party services. They just need to plug to the Eleven built-in mechanism, which simply makes the process transparent and standardized.

Custody

Thanks to anti-counterfeiting microchips, any entity that has physical access to an object can prove anytime that they are in possession of the object. This allows custody services to be proposed to object owners, vault for precious metals, cave for vintage wine bottles, museum for pieces of art, etc. Thanks to their private keys, owners can remotely interrogate their property through the Eleven's standardized channel of communication provided by the custody. The trustee can automatically (or manually with its smartphone) establish communication between the object and its owner in order to check its presence (and optionally temperature, humidity, etc.), as well as receiving Skies via the standardized cash-flow, for the services (vault stock, transportation, maintenance, etc.), or pay the owner (e.g. piece of art lending that attracts visitors to the museum).

Bearer bonds

Ownership of an object is performed via the owner's private key, which can be digitally stored in an Eleven wallet, or sealed in another physical object as a bearer bond (plastic coin, plastic card, hi-tech banknote, etc.). Thus, non-transportable objects can be traded like cash, while being hold in a custody service. In the same manner cryptocurrencies' cold wallets can be made, with the difference that once the private key being unsealed, it gives access to a virtual good instead of a physical good.

Marketplace

Having access to the public database of all registered objects (except encrypted records), allows any entity to browse and propose services upon it. Such as marketplaces for classified advertising, buying/selling bids (helpful for value estimation), etc.

Audit

Eleven framework works upon blockchain services that require no trust between entities. However, everyone can't be an expert on every domain, that's why audit services can be proposed to curate reputations (of objects, manufacturers, custody services, etc.), so users can choose their source of reliable and verified information about the objects they scan.

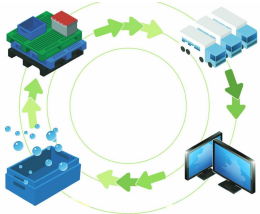
Logistics

Sky11 first goal is to be an popular ecosystem, by the people for the people, more oriented towards P2P and B2C. However, intra-industrial and B2B capabilities are also tremendous. That why standardized services for big logistics, production, ERP, etc. will be proposed (product line, transportation, stock, etc.).

Insurance

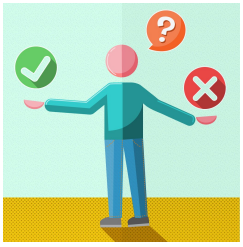
At any level of the ecosystem entities can propose insurance services, for the object itself, the sale of the object, tamper doubts, Sky's volatility, private key loss, etc.

Recycling



Objects that can be recycled can have their logistics (drop off, transportation, material selection, customer's reward Sky's cash-flow, etc.) integrated as services. As well as returnable packagings (e.g. secured cold wallets with only electronic sealing and electronic secret information can be reset).

Ethics



Object types can be curated and evaluated according to certain criterias and audits to match some ethical requirements (ecology, privacy, halal, kosher, fair trade, etc.), then this information proposed as a standardized service for ethical consumerism to users.

Advise

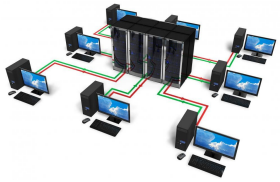
Standardized services of additional information related to scanned objects can be proposed. Such as health warnings, advises, user manuals, events, local legislation (e.g. taxes or customs for precious metals), etc.

After-sales

Standardized after-sale services including transportation, drop-off, refunding, etc. can be linked to the object by the manufacturer, or any third party entity selling additional after-sale services.

Services for the ecosystem

Servers



Eleven's core components will be hosted on an existing blockchain (Ethereum, Rootstock, and later on a dedicated blockchain). However large data that can't be hosted on a blockchain (images, videos, etc.) or not worth paying fees for (geolocation scan records, messages, bids, etc.) will be distributed/replicated on low latency hosting services, that can require payment for their use, standardized in terms of API and cash-flow like any other Eleven service.

Internationalisation

Object description, manual, etc. are standardized according to Eleven's specifications, therefore internationalization third party services can be proposed to the manufacturers or users in order to get their information aligned with their local languages and habits.

Analytics

Some sophisticated algorithms might developed for fine tuned information (e.g advanced geolocation consistency analysis for QR Code validation, big data price estimation, etc.) and provided as a service via Eleven's standardized REST APIs.

Interoperability

The essential information required for an object to benefit from Eleven's services is it's microchip's public key and manufacturer's identification. Several IoT blockchain may provide such information, therefore third-party services can port this information in order to register the object on Eleven, with a simple tap from the owner's smartphone. Then the object can transparently join the Sky11 ecosystem as any other object, and benefit from its advantages and services.

Security

Security companies can provide solutions in case of bugs, attacks, hacks, etc. to other members of the ecosystem, in order to automate breakpoints, updates or other safeguards for containing the impact of such hazards.

Non-profit organisation

The Initial Coin Offering (ICO) and development of the Sky11 ecosystem will be managed by the “Sky11” non-profit organisation, established under the French law of 1901 association.

Token

The Sky token will be proposed as an advanced ERC20 token, with the extra possibility to move the tokens to a dedicated blockchain.

The total amount will be of ⛢77,700,000.

- 10% for the team.
- 10% for early investors.
- 10% for the Sky11 non-profit organization.
- 10% for bounty hunters.
- 60% for the public Initial Coin Offering (ICO).

At first Eleven will run upon an smart-contract able blockchain (likely to be Ethereum or Rootstock), but leaves the door open to move its services, objects and monetary mass to another one, and possibly dedicated one (e.g. KissChain), in case. To do so a null address will allow wallet holders to make their token and objects move to the new chain. If such a migration happens, an extra supply of ⛢33,300,000 will be gradually minted for the minters (minters are like miners for Bitcoin, but for PoS blockchains such as KissChain).

Early investors

Visit sky11.io if you wish to benefit from the pre-sale of the first tokens at the discount price of €0.5 per Sky instead of €1.

Team

- Jean-Michel Billaut, advisor.
- Stanley Claisse, crypto lawyer.
- Carole Fabre, digital strategy, competitive intelligence.
- François Gatto, IoT.
- David Haik, co-founder.
- Camille Harang, co-founder, conceptor.
- Olivier Hugot, IP lawyer.
- Benoît Huguet, crypto consulting.
- Romain Lafforgue, crypto expert.
- Morgan Phuc, crypto consulting.
- Christopher Villegas, crypto exchange.
- *Suoma Nony*, lead blockchain developer.