

Abstract

According to one perspective, the invention provides a technical arrangement to calculate, register and/or apportion costs and/or generate income in proportion to the current ownership of an asset. One or more embodiments also comprise a novel technique for generating cryptographic sub-keys. Thus, one benefit provided by the invention is that it allows the secure distribution of costs and income for an asset registered and maintained on the Blockchain. In turn, this increases the capability of such assets to meet the real-world needs of various entities such as the asset itself and investing parties. In one embodiment the invention provides a computer-implemented system for controlling a transfer made via a blockchain in respect of an asset, the system comprising an asset having a plurality of private cryptographic keys, each private key being associated with an owner of the asset; a registry comprising a plurality of public cryptographic keys wherein each public key corresponds to a private key in the asset's plurality of private keys, and is associated with a redeem script hash that can be identified within an unspent blockchain transaction; a smart contract comprising at least one rule relating to the automated generation of one or more blockchain transactions to enable a transfer to be made in respect of the asset; and a computing agent arranged to evaluate and/or execute the at least one rule of the smart contract. In some embodiments, a hierarchy of computing agents is managed by a master agent to carry out the asset related tasks defined in the smart contract. The master and subordinate agents communicate to execute discrete tasks.

Figure 1.