**I/We Claim:**

1. A method for processing a blockchain transaction, comprising:

at a blockchain node of a blockchain for processing the blockchain transaction, receiving a transaction request, the transaction request indicating at least a transaction initiator, transaction content and a transaction recipient of the transaction;

computing, based on the transaction content, a transaction fee for processing the transaction;

determining whether the transaction initiator is a sponsored user of the transaction recipient; and

in response to determining that the transaction initiator is a sponsored user of the transaction recipient, determining a payment account from which the transaction fee is deducted.

2. The method according to claim 1, wherein determining whether the transaction initiator is a sponsored user of the transaction recipient comprises:

in response to determining that the transaction request further indicates signature information of the transaction recipient, determining that the transaction initiator is the sponsored user of the transaction recipient.

3. The method according to claim 2, wherein the signature information of the transaction recipient is generated and added to the transaction request by a management device of the transaction recipient signing the transaction content with a private key of the transaction recipient in response to determining that the transaction initiator is a sponsored user of the transaction recipient based on a sponsor relationship between the transaction initiator and the transaction recipient stored at the management device.

4. The method according to claim 3, wherein the signature information of the transaction recipient is generated and added to the transaction request by a management device of the transaction recipient signing the transaction content with a private key of the transaction recipient further in response to determining that credit balance of the transaction initiator is greater than or equal to the transaction fee.

5. The method according to claim 1, wherein determining whether the transaction initiator is the sponsored user of the transaction recipient comprises:

determining whether the transaction initiator is the sponsored user of the transaction recipient based on a sponsor relationship between the transaction initiator and the transaction recipient recorded on the blockchain.

6. The method according to claim 5, further comprising:

in response to determining that the transaction initiator is not a sponsored user of the transaction recipient, determining whether balance of a first account of the transaction initiator is greater than or equal to the transaction fee; and

in response to determining that the balance of the first account of the transaction initiator is greater than or equal to the transaction fee, determining the first account of the transaction initiator as the payment account.

7. The method according to claim 1, wherein determining a payment account from which the transaction fee is deducted comprises:

determining whether there is a sponsor account associated with the transaction recipient;

in response to determining that there is a sponsor account associated with the transaction recipient, determining whether balance of the sponsor account is greater than or equal to the transaction fee; and

in response to determining that the balance of the sponsor account is greater than or equal to the transaction fee, determining the sponsor account as the payment account.

8. The method according to claim 7, wherein determining a payment account from which the transaction fee is deducted further comprises:

in response to determining that there is not a sponsor account associated with the transaction recipient or in response to determining that the balance of the sponsor account is less than the transaction fee, determining whether balance of a second account of the transaction recipient is greater than or equal to the transaction fee; and

in response to determining that the balance of the second account of the transaction recipient is greater than or equal to the transaction fee, determining the second account of the transaction recipient as the payment account.

9. The method according to claim 8, wherein determining a payment account from which the transaction fee is deducted comprises:

in response to determining that the balance of the second account of the transaction recipient is less than the transaction fee, determining whether balance of a first account of the transaction initiator is greater than or equal to the transaction fee; and

in response to determining that the balance of the first account of the transaction initiator is greater than or equal to the transaction fee, determining the first account of the transaction initiator as the payment account.

10. The method according to claim 9, further comprising:

in response to determining that the transaction content indicates a transfer transaction to transfer a transfer amount of cryptocurrency from the transaction initiator to the transaction recipient, determining whether balance of a third account of the transaction initiator is greater than or equal to the transfer amount; and

in response to determining that the balance of the third account of the transaction initiator is greater than or equal to the transfer amount, transferring the transfer amount of cryptocurrency from the third account of the transaction initiator to a fourth account of the transaction recipient.

11. The method according to claim 10, wherein the first account and the second account correspond to a first type of cryptocurrency, the third account and the fourth account correspond to a second type of cryptocurrency, and the first type is different from the second type.

12. The method according to claim 9, further comprising:

in response to determining that the transaction content indicates a transfer transaction to transfer a transfer amount of cryptocurrency from the transaction initiator to the transaction recipient, determining whether balance of the first account of the transaction initiator is greater than or equal to the transfer amount; and

in response to determining that the balance of the first account of the transaction initiator is greater than or equal to the transfer amount, transferring the transfer amount of cryptocurrency from the first account of the transaction initiator to the second account of the transaction recipient, wherein the first account, the second account and the transfer amount of cryptocurrency corresponding to a first type of cryptocurrency.

13. The method according to claim 1, wherein determining a payment account from which the transaction fee is deducted further comprises:

determining whether credit balance of the transaction initiator is greater than or equal to the transaction fee based on credit information of the transaction initiator recorded on the blockchain; and

in response to determining that the credit balance of the transaction initiator is greater than or equal to the transaction fee, determining the payment account from which the transaction fee is deducted.

14. The method according to claim 4 or 13, wherein the credit information indicates at least a credit limit and a used credit, and the credit balance is determined by

credit balance = credit limit – used credit.

15. The method according to claim 14, wherein the credit information further includes a credit restoring rate and a height of blocks, the credit restoring rate indicating an amount of credit to be restored by each block being passed, the height of blocks indicating a number of blocks passed from last time that the transaction recipient pays the transaction fee for the transaction initiator, and the credit balance is determined by

credit balance = credit limit – used credit + height of blocks * credit restoring rate.

16. The method according to claim 4 or 13, wherein the credit information indicates at least a credit payment number limit and a used credit payment number and the credit balance is determined by

credit balance = credit payment number limit – used credit payment number.

17. A method for managing a blockchain transaction, comprising:

at a management device for managing the blockchain transaction, receiving a request from a transaction initiator of the transaction, the request indicating at least the transaction initiator, transaction content and a transaction recipient of the transaction;

determining whether the transaction initiator is a sponsored user of the transaction recipient; and

in response to determining that the transaction initiator is a sponsored user of the transaction recipient, forming a transaction request by generating and adding signature information of the transaction recipient to the received request, the signature information indicating that a transaction fee for a blockchain node of a blockchain processing the blockchain

transaction is allowed to be deducted from a payment account associated with the transaction recipient.

18. The method according to claim 17, wherein determining whether the transaction initiator is a sponsored user of the transaction recipient comprises:

determining, based on a sponsor relationship between the transaction initiator and the transaction recipient stored at the management device, whether the transaction initiator is a sponsored user of the transaction recipient.

19. The method according to claim 17, wherein forming a transaction request by generating and adding the signature information to the received request comprises:

determining whether credit balance of the transaction initiator is greater than or equal to the transaction fee based on credit information of the transaction initiator stored at the management device; and

in response to determining that the credit balance of the transaction initiator is greater than or equal to the transaction fee, generating and adding the signature information to the received request by signing the transaction content with a private key of the transaction recipient.

20. The method according to claim 19, wherein the credit information indicates at least a credit limit and a used credit, and the credit balance is determined by

credit balance = credit limit – used credit.

21. The method according to claim 20, wherein the credit information further includes a credit restoring rate and a height of blocks, the credit restoring rate indicating an amount of credit to be restored by each block being passed, the height of blocks indicating a number of blocks passed from last time that the transaction recipient pays the transaction fee for the transaction initiator, and the credit balance is determined by

credit balance = credit limit – used credit + height of blocks * credit restoring rate.

22. The method according to claim 19, wherein the credit information indicates at least a credit payment number limit and a used credit payment number, and the credit balance is determined by

credit balance = credit payment number limit – used credit payment number.

23. A device for processing a blockchain transaction, the device comprising:

a memory configured to store one or more programs; and

a processing unit coupled to the memory and configured to execute said one or more programs to cause the device to perform the method according to any one of claims 1-16.

24. A device for managing a blockchain transaction, the device comprising:

a memory configured to store one or more programs; and

a processing unit coupled to the memory and configured to execute said one or more programs to cause the device to perform the method according to any one of claims 17-22.

25. A non-transitory computer readable storage medium on which machine executable instructions are stored, the machine executable instructions, when executed, causing a machine to perform the method according to any one of claims 1-22.

26. A computer program product which is tangibly stored on a non-transient computer readable medium and comprises machine executable instructions, the machine executable instructions, when executed, causing a machine to perform steps of the method according to any of claims 1-22.