

CLAIMS

1. A blockchain-based workflow node certification method, comprising:

step S101: establishing, by a certification party, a general workflow template, the general workflow template comprising a plurality of workflow nodes each having an audit attribute for
5 indicating whether the workflow node needs to be certified;

step S102: establishing, by the certification party, a general data template based on the general workflow template, the general data template defining data needing to be collected and transmitted in a workflow execution process;

step S103: instantiating the general data template and the general workflow template; and

10 step S104: acquiring a current workflow node in the instantiated general workflow template, determining, based on the audit attribute, whether the current workflow node needs to be certified, if yes, certifying, by a centralized certification party, data needing to be received or sent by the current workflow node defined in the general workflow template and a data template defined in an instantiating process, and depositing certification, by a blockchain, for the data
15 needing to be received by the current workflow node and the data template received in the instantiating process, wherein the certification and certification deposition for the data template are the certification and certification deposition for specific data in the data template.

2. The blockchain-based workflow node certification method according to claim 1, wherein the general data template has uuid, name, version, languageType, contentType, required,
20 validation, and content fields, the uuid field is configured to define a unique identifier of the general data template, the name field is configured to define a name of the general data template, the version field is configured to define a version of the general data template, the languageType field defines a language type implementing the general data template, the contentType field defines a data type, the required field defines whether the data is required, the validation field is
25 configured for logical validation, and may contain a validation script or link to external services to determine whether a data format is correct, and the content field may be nested with other data templates.

3. The blockchain-based workflow node certification method according to claim 1, wherein step S104 comprises:

step S1041: acquiring a current workflow node in the instantiated general workflow template, determining, based on the audit attribute, whether the current workflow node needs to
5 be certified, if yes, proceeding to step S1042, and if no, proceeding to step S1044;

step S1042: acquiring the instantiated current workflow node, acquiring data needing to be received or sent, which is defined in the general workflow template by the current workflow node, and a data template defined in an instantiating process, and sending the data and the data template to the certification party for certification audit;

10 step S1043: after passing the certification audit, performing, by the certification party, Hash calculation on the data and the data template to obtain a Hash value, and sending the Hash value to the blockchain for certification deposition;

step S1044: determining whether the current workflow node is an end node, if yes, ending the method, and if no, proceeding to step S1045; and

15 step S1045: setting the current workflow node as a next workflow node, and proceeding to step S1042.

4. The blockchain-based workflow node certification method according to claim 3, wherein after the blockchain completes the certification deposition and synchronization, the certification party obtains an ID of the certification deposition operation, and associates the ID with original
20 data.

5. A blockchain-based workflow node certification device, comprising:

a general workflow template module, configured to establish, by a certification party, a general workflow template, the general workflow template comprising a plurality of workflow nodes each having an audit attribute for indicating whether the workflow node needs to be
25 certified;

a general data template module, configured to establish, by the certification party, a general data template based on the general workflow template, the general data template defining data

needing to be collected and transmitted in a workflow execution process;

an instantiating module, configured to instantiate the general data template and the general workflow template; and

a certification and deposition module, configured to acquire a current workflow node in the
5 instantiated general workflow template, determine, based on the audit attribute, whether the
current workflow node needs to be certified, if yes, certify, by a centralized certification party,
data needing to be received or sent by the current workflow node defined in the general workflow
template and a data template defined in an instantiating process, and deposit certification, by a
blockchain, for the data needing to be received by the current workflow node and the data
10 template received in the instantiating process, wherein the certification and certification
deposition for the data template are the certification and certification deposition for specific data
in the data template.

6. The blockchain-based workflow node certification device according to claim 5, wherein
the general data template has uuid, name, version, languageType, contentType, required,
15 validation, and content fields, the uuid field is configured to define a unique identifier of the
general data template, the name field is configured to define a name of the general data template,
the version field is configured to define a version of the general data template, the languageType
field defines a language type implementing the general data template, the contentType field
defines a data type, the required field defines whether the data is required, the validation field is
20 configured for logical validation, and may contain a validation script or link to external services
to determine whether a data format is correct, and the content field may be nested with other data
templates.

7. The blockchain-based workflow node certification device according to claim 5, wherein
the certification and deposition module comprises:

25 a first determination sub-module, configured to acquire a current workflow node in the
instantiated general workflow template, and determine, based on the audit attribute, whether the
current workflow node needs to be certified;

a certification sub-module, configured to acquire the instantiated current workflow node, acquire data needing to be received or sent, which is defined in the general workflow template by the current workflow node, and a data template defined in an instantiating process, and send the data and the data template to the certification party for certification audit;

- 5 a deposition sub-module, configured to perform, by the certification party, Hash calculation on the data and the data template after passing the certification audit to obtain a Hash value, and send the Hash value to the blockchain for certification deposition;

a second determination sub-module, configured to determine whether the current workflow node is an end node; and

- 10 a setting sub-module, configured to set the current workflow node as a next workflow node.

8. The blockchain-based workflow node certification device according to claim 7, further comprising an association sub-module, configured to obtain, by the certification party, an ID of the certification deposition operation after the blockchain completes the certification deposition and synchronization, and associate the ID with original data.

- 15 9. A blockchain-based workflow node certification system, comprising:

a processor, configured to execute a plurality of instructions; and

a memory, configured to store the plurality of instructions,

wherein the plurality of instructions are configured to be stored by the memory and loaded by the processor to perform the blockchain-based workflow node certification method according

- 20 to any one of claims 1-4.

10. A computer-readable storage medium, storing a plurality of instructions therein that are configured to be loaded by a processor and perform the blockchain-based workflow node certification method according to any one of claims 1-4.