Telos worker proposal: Smart Contract for Work Submission and Approval

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Introduction

It is a common workflow in many business areas that a worker is submitting their reports, and the customer is approving or rejecting them.

This worker proposal is aiming to develop an open-source, free to use EOSIO smart contract that would allow automating such workflows. I believe many business applications can be built on top of it, and a few examples are given below.

The worker proposal

This worker proposal is aiming to collect a one-time donation of 80000 TLOS in order to develop a smart contract, as specified below. The smart contract will be released under Apache open-source license, and is expected to be ready within 1 month after the WP approval. Along with the smart contract code, full documentation shall be delivered.

- Anyone will be able to create a new workflow, specifying its attributes as follows:
  - workflow name, up to 12 symbols
  - submitter account (submitter can delegate the submission rights to other accounts)
  - approver accounts
  - approval threshold (minimum number of approval confirmations)
  - veto threshold (minimum number of disapprovals).
- Submitter is sending work evidence to the contract. Each submission event has a timestamp and a JSON string describing the matter.
- One of approvers creates an approval (or disapproval) request indicating the latest event number. The request covers all previous events up to the specified number.

- Other approvers confirm or disapprove the approval request.
- Upon reaching the quorum of approval or disapproval, the process finishes in either of the following stages:
    - If the quorum for approval is reached, the events are erased from contract RAM and the workflow continues further on.
    - If the veto quorum is reached, the event log gets frozen and no new events are accepted. The issue must be resolved in an off-chain action. Once it's resolved, a resolution request is submitted, indicating the range of event numbers that are considered as invalid. After reaching the approval quorum, the workflow resumes into normal operation.

Possible use cases

One of use cases is validation of a foreign blockchain: an oracle would submit block hashes, and a number of approval oracles would do their independent validation.

Inter-blockchain communication (IBC) can also adopt this scheme, letting independent oracles validate the token transfers.

Many business workflows would fit into this model. It is very common that agents are sent out to do some work, and their customer or employer would need to collect the evidence of their work.

About myself

I'm a senior engineer with over 20 years in the industry of software and network engineering. I started working on various EOSIO related projects in June 2018, and I tried to share and publish as much as possible of anything useful for the community. You may find details of my work in my Medium blog and on GitHub:

https://medium.com/@cc32d9

https://github.com/cc32d9

https://github.com/eos-geneva/escrowescrow

https://github.com/eosio-standards-wg

https://github.com/eosio-ecosystem

https://github.com/EOSChronicleProject

The nickname "cc32d9" is the beginning of SHA256 hash from my real name.

You can reach me in Telegram at @cc32d9 or via email: cc32d9@gmail.com

My previous Telos work proposals:

https://chainspector.io/dashboard/worker-proposals/8

https://chainspector.io/dashboard/worker-proposals/28