Extending Cross-Blockchain Token Transfers
Porting of a Smart Contract Solution to Bitcoin Script, EOS, or Tron

1 Motivation

In the TAST project, we are researching various questions within blockchains and smart contracts. We have developed two protocols for transferring tokens between blockchains, a task which is so far unexplored in other research.

We have built a reference implementation using Solidity, in order to showcase how these transfers can be implemented using Ethereum. We have successfully performed transfers between private Ethereum blockchains, and are now expanding our platform to also include other types of blockchains.

Our current development prototype is conceptually portable to any blockchain featuring smart contracts. While variants without smart contracts are also envisioned, for this thesis topic, we foresee the implementation of our token transfer protocol on other smart contract platforms, including but not limited to Bitcoin Script, EOS, or Tron.

2 Work Description

- Analysis of candidate blockchains for implementing cross-blockchain token transfers.
- Selection of one blockchain as a smart contract platform for the new implementation.
- Implementation of a smart contract, based on the existing Solidity reference implementation.
- Evaluation of the new implementation with regards to aspects including speed, cost, and security.

3 Further Information

Start: Immediately (might also be later)

Basic Requirements: Knowledge in the blockchain field is required; experience with smart contracts is very helpful; eagerness to gain knowledge in new technologies

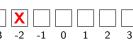**TAST Website**: http://www.infosys.tuwien.ac.at/tast/

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	Conceptual (Analytical)							Empirical (Simulation)								Practical (Implementation)								Literature Work						

Distributed Systems Group
Faculty of Informatics
Privatdozent Dr.-Ing. Stefan Schulte, s.schulte@infosys.tuwien.ac.at
www.infosys.tuwien.ac.at