

IMPLEMENTING LOGIC GATE FUNCTIONALITY USING A BLOCKCHAIN

ABSTRACT

The invention presents a solution in which blockchain Transactions are created to implement the functionality of a logic gate. The invention may be implemented on the Bitcoin platform or an alternative blockchain platform. The transaction includes a locking script which comprises instructions selected so as to implement the functionality of a logic gate such as OR, AND, XOR, NOT and so on. In some examples, the instructions may be provided in a hashed form. When the script is executed (because a second transaction is attempting to spend the output associated with the locking script) the inputs will be processed by the conditional instructions to provide an output of TRUE or FALSE. The second transaction is transmitted to the blockchain network for validation and, if determined to be valid, it will be written to the blockchain. Validation of the second transaction can be interpreted as a TRUE output. Thus, the locking script of the first transaction provides the functionality of the desired logic gate. The invention provides numerous advantages and can be used in a wide variety of applications, such as for the implementation of control systems and processes.

Fig. 1