

# BlockchainAs a Service (BaaS) Framework for Government Funded Projects e-Tendering Process Administration and Quality Assurance using Smart Contracts

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**Abstract :** Government funded projects require the use of bidding via tenders , this process is tedious and leads to corruption as there is very less transparency . This paper proposes a solution using Blockchain as a Service for easy and transparent administration of public projects which allows various stakeholders to scrutinize the entire process .

**Keywords—**Blockchain, Voting , Ledger, Smart Contract.

## I. Introduction :

The functioning of government projects usually involves the process of issuing tenders [1] and selecting the company which quotes the lowest with consideration of their track record. This system has a lot of flaws as the bidding may be sometimes rigged, government officials demand bribes, bribes are paid to disclose other contractors' bids , and threats to other contractors.[2]. The current system does not have a feedback loop from the citizens who are the users of the services. Hence this paper proposes an architecture built on top of blockchain which ensures that the bidding is done in a truly private manner by using smart contracts which ensures that contract goes to the deserved contractor. The end users of the infrastructure are usually neglected and they have to use various methods and cross hurdles to make their voices heard about the poor quality of infrastructure. This platform ensures that the data of every contract is made public and the citizens can vote on various issues which ensures scrutiny of the work done by the government.

## II. Motivation:

The process of acquiring and completion of projects issued by the government is a very tedious process involving a large number of entities and paperwork. Although the process is being digitized there are a number of pitfalls such as corruption and no feedback mechanism to ensure that the work done is upto the standards. The current system has a provision for citizens to ask for information such as RTI [3] but the process is very hard to follow up as the authorities will forward requests to different departments, as the citizens will not know the correct department to forward the

request to. This process is also very time consuming and the sheer amount of paperwork that the authorities go through consumes a lot of time and money. The contractors who also bid for a particular project are not paid on time even though the work is completed which further drives them to bribe various officials to get their payment. Even if the work is completed in a proper manner the contractors need to bribe external certification authorities to get their approval. All these factors finally affect the general public.

### A. Secure Bidding and Easy to Use Platform

This platform allows the contractors to easily cast their bid for a particular project issued by the government. Every contractor will have a unique identity given to them via their private key [5]. They can then use their private key to sign and cast their bid for a particular project .The identity and the verification of the bid can be done using the public key of the contractor [6] . This ensures that until the time of the results of the blind bidding on the blockchain is done no one can disclose the contents of the bid sent by the contractor. Hence this solution will help the contractor who deserves the opportunity to get the contract.

### B. Citizens Can Rate the Work of the Government

Using this platform the citizens can directly report problems which ensure that the work done by the contractor is up to the mark. This ensures that the credibility of the contractor is taken into account the next time the bidding happens. The reputation of each contractor will be displayed on a public ledger along with the amount paid by the government for the entire contract. This ensures that the citizens are aware of the entire project from start to finish. The public can now freely vote on issues without wasting time on requesting information from the government about various documents which are stored in legacy systems or sometimes without any form of digitization. Various issues can be highlighted to the different authorities by using the power of the general public and the proposed platform will ensure that their voices are heard and they cannot be tampered with or removed.

### C. Contractor Can Receive Payments on Time

The main issue with government projects in many countries is that even after the work is completed the contractors do