

# Cloud centric IOT Framework for Crowd Management

K.Thasleema<sup>1</sup>, Mr.Wilson Thomas<sup>2</sup>

<sup>1</sup>PG Student, Department of Computer Science and Engineering, Madanapalle Institute of Technology & Science, India.

<sup>2</sup>Assistant Professor, Department of Computer Science and Engineering, Madanapalle Institute of Technology & Science, India.

*Abstract: The Internet of Things (IoT) is an acronym for network of virtual nodes able to sense, compute, and communicate with other objects. Many services and applications are being developed on IOT architecture. We propose, a cloud-enabled service model which will access IoT. Recent studies have proposed IoT architecture implemented as Inet-centric and obj-centric. We proposed Auction mechanism with md5 algorithm. The IoT applications developed on the cloud, called the Cloud-Things architecture. The trustworthiness of the crowd management is improved by the Secure Communication Channel between the Cloud Server, users and crowd management Authority. We ensure only authorized users may participate in crowd management service. SCC is an enforcement framework for preventing malicious attacks.*

Key terms: Crowd management, Sensing-as-a-service, Auction theory, Internet of things, Indexing and ranking.

## 1. INTRODUCTION

The Internet of Things is a recent communication prototype that envisions a near future, in which the objects of everyday life will be set with microcontrollers, transceivers for digital communication, and appropriate protocol stacks that will make them able to correspond with one another and with the users, becoming a basic part of the Internet. The IoT concept, hence, aims at making the Internet even more immersive and pervasive. Furthermore, by enabling easy access and interface with a wide variety of devices such as, for instance, home appliances, surveillance cameras, monitoring sensors, actuators, so on, the IoT will encourage the development of a number of applications that make use of the potentially enormous amount and variety of data generated by such objects to provide new services to citizens, companies, and public administrations. This model indeed finds application in many different domains, such as home automation, industrial automation, medical aids, mobile healthcare, elderly assistance, intelligent energy management and smart grids, automotive, traffic management, and many others. Built-in sensors in mobile campaign can influence the performance of IoT applications in terms of energy and communication overhead savings. Therefore, Sensing-as-a-Service (S2aaS)

## 2. EXISTING SYSTEM

In vacant system user may cheat with false auctions in user centric and local searches, may raise vulnerable. Users submitting false information may cause more problems in public-safety than the users submitting higher bids. Thus, the malicious users are selected because of their minimum bids,

and they may send altered data to public-safety-authority. In this way, public-safety-authority may request different types of sensor data like temperature, noise, motion, and image sensing data provided to the crowd which consists of people who have gathered for a particular event.

### Limitations:

- User may cheat with false auctions
- Users may submit false information
- Higher vulnerability

## 3. PROPOSED SYSTEM

In this framework sensor nodes submit their data to cloud storage as a service, then the cloud server will initiate data mining tools to discover the knowledge. Sensing-as-a-Service (S2aaS) is developed as the front-end access to the cloud-centric IoT, where mobile device submits their sensed data on payment basis. In this thesis, we present a cloud enabled IoT based crowd management system for public-safety using S2aaS with trusted-crowd sourcing. Cloud-Centric IOT framework for Crowd management initiates the public safety authority to accumulate data from a selective region for crowd management. Crowd means a large group of people who have gathered for an event. Public-safety-authority can use data of the smart phones And Sensing auction-based user-centric incentives by introducing reputation-awareness and trustworthiness of the smart phone users.

### Advantages:

- This vulnerability can be addressed by a reputation-aware crowd management scheme for a truthful and trustworthy
- Services for smart-cities, transport systems, and public-safety in smart-city management can be effectively improved through the cloud integrated IoT.

### Algorithm:

- 1: BEGIN
- 2:  $\{U \leftarrow \varphi\}$
- 3:  $i \leftarrow \operatorname{argmax}_u \in U$

4: for  
5: CMA ENCR  
6: then hash code  
7: cp DECR  
8: then VERIFY  
9: end for  
10: for  
11: *update* (*w*)  
12: end for  
13: return (*W*,  $\Phi$ ,  $\Omega$ , *R*)  
14: End

#### 4. IMPLEMENTATION

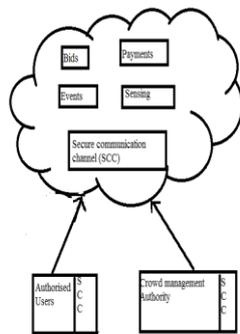


Fig: System framework

Cloud centric IoT architecture has following layers in proposed framework,

- Object Management
- Crowd Management Authority
- Cloud Computing Platform
- Social networking
- Users

##### a) Object Management:

Objects have central role in TSCM, objects are digital representation of information that communicated and processed via Internet. These objects submits sensing task request to the cloud platform and receives sensing data of corresponding task.

##### b) Crowd Management Authority:

It submits sensing task requests to the cloud platform and receives the sensing data of the corresponding tasks once the auction is completed in the cloud. Indeed, sensing task requests also include the value of each task so that the cloud platform can manage the auction by jointly considering the utility of the crowd management authority, as well as the user's utility.

##### c) Cloud Computing Platform:

Maintains a user database where objects, sensing tasks and associated events are stored. This middleware enables a seamless exchange of object information between different supply participants. Cloud centric IoT framework processes functionalities for service management and service composition. The data exchange and information integration is done by this Platform. Maintains a user database, where user's reputations, bids, payments, sensing tasks, and associated events are stored. Furthermore, the cloud platform interacts with social networking services in order to detect candidate users and collect sensing data. Huge amount of data will need to be stored and processed throughout an event; hence TSCM over Hadoop Map Reduce framework can be a feasible solution for implementation.

##### d) Social Networking:

Is considered to be the sensor data publisher layer in the cloud-centric IoT for crowd management. Furthermore, social network services can cooperate with the cloud platform in retrieving the users who are present at a particular location to attend a particular event. Moreover, S2aaS data such as bids, payments, and sensing data are also published over social network, whereas the above applications enable fast detection of the smart phone users who may take part in the S2aaS auction.

##### e) Users:

Denote a subset of the crowd in a particular region, which is aimed to be monitored by the public safety authority. A user, who agrees to publish his /her sensing data on the sensor data publisher layer of the IoT architecture, installs the s<sup>2</sup>aas application on his/her smart phone. Two types of users are considered in this scenario. The first type of users bid and publish their sensor data truthfully (i.e., non malicious users) whereas the second type of users bid lower than their costs in order to guarantee being selected, and publish altered sensing data in order to lead to disinformation at the public safety authority.

#### 6. Result Analysis

Here the X-axis represents the no of users who are participating in auction. The Y-axis represents the bid values of the represented users.

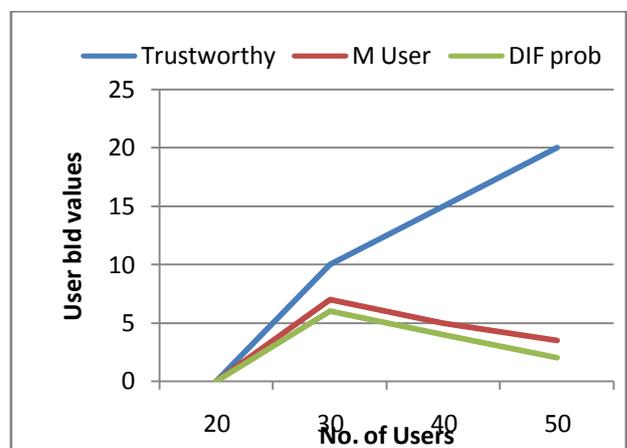


Fig 2: Performance Graph

## 7. CONCLUSION

When compare with vacant now we increased trustworthiness and performance based upon the user reputation. Moreover, the imbursement made to the nasty users who aim at disinformation probability can be decreased. We propose the Auction mechanism with md5 algorithm to increase trustworthiness. An agenda enabled by a scalable cloud to provide the capacity to operate the IoT, the structure allows networking, computation, storage and visualization themes split thereby allowing self-sufficient growth in every sector but complementing each other in a shared environment.

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