INTERNSHIP ACTIVITIES

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OVERVIEW "INSTANLY PRE-VERIFIABLE PRE-SHARED KEY EXCHANGE FOR CYBER PHYSICAL SYSTEM"

1. **Purpose** : The system is projected to be implemented in a WEB-BASED SCADA system for industry machines.

2. **Connectivity :** The connection link is using Bluetooth *Depends on the version of the Bluetooth.

3. **Malicious Attempt :** The preventif attempt is forgery and eavesdropping.

4. **Security Aspect :** Depends on the security of a blind signature scheme and DH (Diffie – Hellman) key exchange.

OVERVIEW PROPOSED SCHEME AND IMPLEMENTATION [1] "INSTANLY PRE-VERIFIABLE PRE-SHARED KEY EXCHANGE FOR CYBER PHYSICAL SYSTEM"
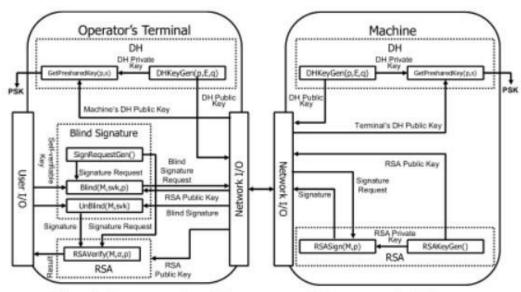
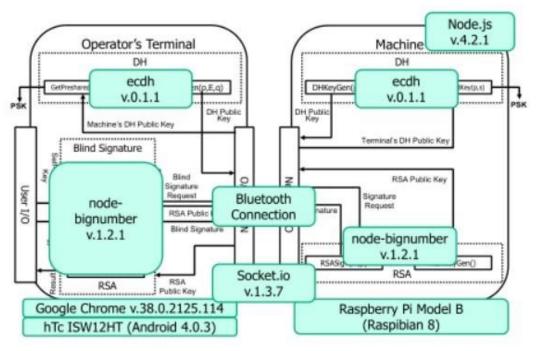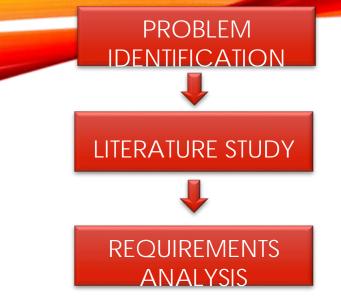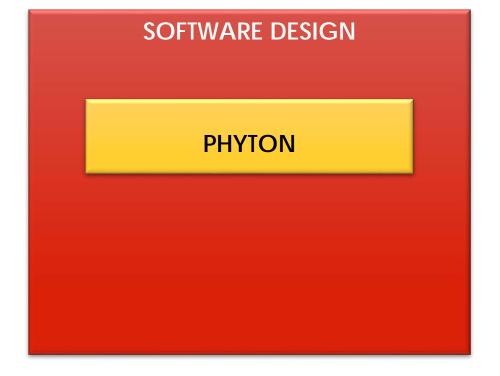Fig. 1 System Architecture of Proposed Scheme
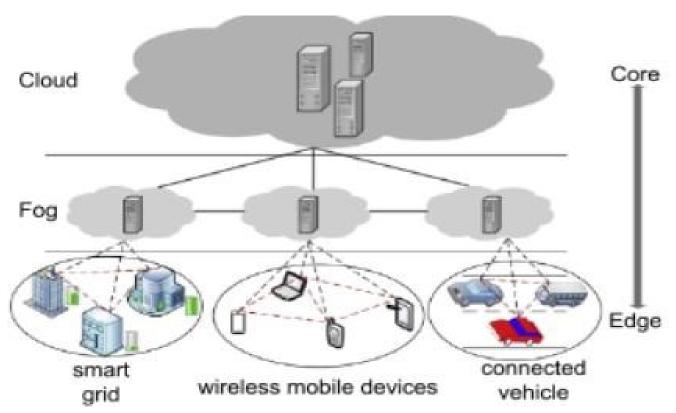

Fig. 2 Implementation of Proposed Scheme

PROPOSED ACTIVITY

1. Conducting Fog Computing

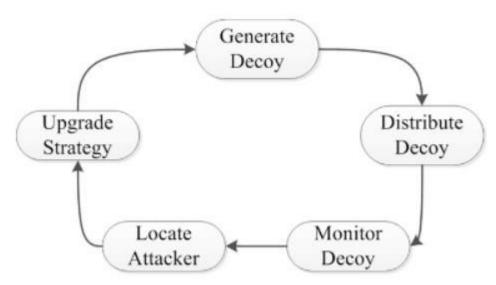In practical applications, an emerging wave of internet deployment requires mobility support and location awareness. To meet these requirements, a new platform like Fog Computing is designed in.[2] Specifically, the fog is a cloud close to the "ground", and it enables applications on billions of connected devices, which are already connected in the internet of things [IoT], to run directly at the network edge.

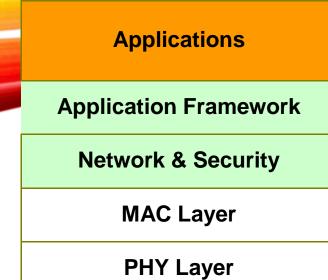# FIG 3. FOG COMPUTING STRUCTURE

PURPOSE : FOG COMPUTING

- Fog Computing [3] consists of 3 key technologies (1) Belivable decoy generation and distribution technology. (2) Data leakage sensing, defending and tracing technology. (3) Anomaly behaviour modelling and mining technology.

ZIGBEE

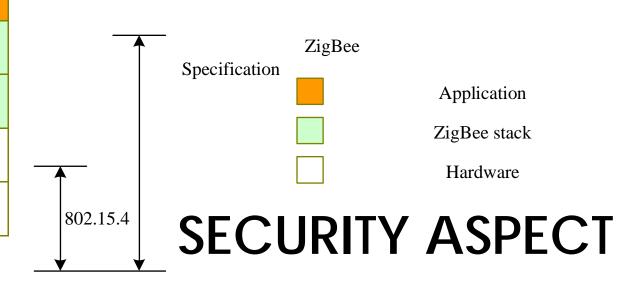The IEEE 802 Standard is a set of networking standards for both wired and wireless network. The Most Known Wireless specifications include 802.11 (Wi-Fi), 802.15.4 (ZigBee) and 802.15.1 (Bluetooth). Currently the focus on IoT and wireless sensor / actuator communication. It needs an efficient power management plan, a low cost of production and needs to support a great number of mobiles node in a simple way. [4]

ZIGBEE/802.15.4 ARCHITECTURE

Applications
Application Framework
Network & Security
MAC Layer
PHY Layer

ZigBee
Specification

802.15.4

Application

ZigBee stack

Hardware

SECURITY ASPECT

REFERENCES

[1]   kohei ISOBE, Masami MOHRI, Yoshiaki SHIRAISHI, (2016) "Instantly SelfVerifiable Pre-Shared Key Exchange for Cyber-Physical Systems", in IEICE Technical Report ICSS2015-69(2016-03).

[2]   F.Bonomi, R. Milito, J.Zu, S. Addepalli, (2012) "Fog Computing and its role in the internet of things", in : Proceeding of the first edition of the MCC Workshop on Mobile Cloud Computing ACM 2012, pp 13-16.

[3]   Fei Huayu, He Jun, Wang Menglin (2016) "Research on Fog Computing Based Active Anti-Theft Technology" 8th International Conference on Advances in Information Technology, IAIT 2016, 19-22.

[4]   Amar Abane, Mehammed Daoui, Samia Bouzefrane (2017) "NDN-overZigbee : A Zigbee Support for Named Data Networking" Future Generation Computer System https://doi.org/10.1016