EASE OF FARMING & AGRICULTURE BY USING COMMUNICATION ON THE MOVE AND SMART SHELTERS

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Abstract: *Agriculture plays a vital role in the Indian economy. Over 70 per cent of the rural households depend on agriculture as their principal means of livelihood. Agriculture, along with fisheries and forestry, accounts for one-third of the nation's GDP and is its single largest contributor. 75 per cent of India's population depends on agriculture. So we required an efficient system to support agricultural industry in all aspects technically, commercially and financially. So they can enhance overall productivity and make their livelihood easy and secure.*

Keywords: *Smart Shelters, COTM, IOT, Farming, Agriculture.*

1. INTRODUCTION TO PROBLEM:

As Farming and Agriculture is highly dynamic and environment driven industry and there are various factor like soil, water, land, pesticides, weather condition which effects the overall productivity of corps. People involved in this profession are technically less aware of tricks and techniques of efficient farming.

1.2 Problem Statement:

Understanding the corps and farming environment is one of the main factors for efficient farming with proper information and available resources in market. Condition of farming industry can be improved. Govt. has also implemented many policies and framework to support farming and agriculture industry nationwide. But due to lack of information farmers miss the opportunity to avail their share.

1.3 Problem Solution:

To support farming and agriculture there should be some support system which can guide farmers about environmental conditions, soil health, resource availability, corps health, weather forecast, rain forecast etc. and it should be easily accessible to common man to resolve their query.

2. OBJECTIVE:

Objective of Proposed Smart Shelter system is to provide end to end technical and commercial support to farmers and agricultural individuals.

3. PROPOSED SYSTEM:

Proposed Smart Shelter system is to provide end to end technical and commercial support to farmers and agricultural individuals. In smart shelters we are going to use a truck like van furnished with Auto-track able satellite antenna in integration with terrestrial network. Communication on the move is a concept to provide

seamless connectivity in rural parts of nation using satellite communication as main link in integration with other terrestrial network. proposed Van will also equipped with latest test equipments which can be used to measure various farming parameters like corps health, soil health, weather forecast, fertilizer requirement, water level and quality, rain prediction etc. smart shelters are suppose to provide maximum support to farmers regarding any of their farming related query.

Figure 1: Smart Shelter Van

Apart from various environmental test equipments Smart shelter will be equipped with Communication terminal, video conferencing unit, weather prediction units etc. By using Smart Shelter one can access all Govt. farming related e-services like kisan portal, accessing bank account, Kisan credit card, update or change any data or information. Individuals can register their complaints and query regarding Electricity / water / Farming / Seeds / fertilizers to higher authorities using smart shelters.

4. FEATURE OF SMART SHELTER:

Smart Shelter: Smart Shelters are portable van like vehicle enabled with high precision farming test equipments to perform various tests activities:

- **COTM:** Communication on the Move is concept of seamless/uninterrupted communication over satellite. The main reason of shifting from terrestrial telecom network to satellite network is to avoid network outages. As we go into remote part of country we face terrestrial network outage. Now in today's era all the information is available over internet or clouds so if we gets disconnected from internet we are less accessible.

- **E-Services:** It enables individual to access their various Govt. accounts & schemes provided by Govt.

- **Video Conferencing facility:** Smart shelter can be connected Network control center where various domain experts are located and guide the individuals on different aspects.

- **Public Addressing System:** Smart Shelter are equipped with HD quality video wall and Audio system to provide Audio-visual assistance to farmers regarding farming and related domain. PAS has capability to address 100's of people in single sitting.

- **Evaluation & Testing:** various test instruments can be mounted on shelter for testing and report generation.

Figure 2: Services can be availed by smart shelter in rural areas

- **Banking Services:** Smart shelters are capable to provide banking access to farmer specific account.

- **Forecasting Services:** smart shelter van has access of forecasting data directly from different agencies like meteorological and environment department and share the appropriate with user segment.

5. BLOCK DIAGRAM:

COTM (Communication on the Move) network forms a constellation of smart shelters connected with Network control centre at central location. The coverage range of COTM network is Communication can be done in star as well as mesh topology and backhaul can be enhanced by using terrestrial telephone network.
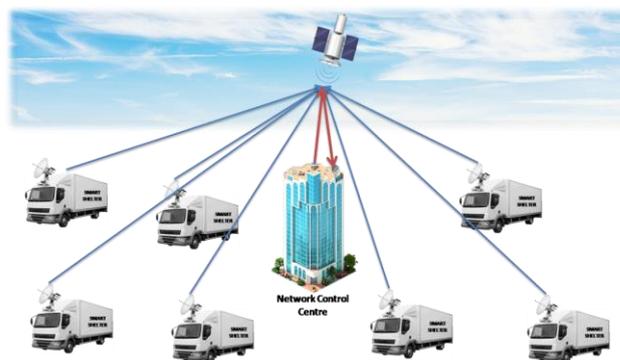

Figure 3: Connectivity of Smart Shelter with Network control centre

We can deploy smart shelter van in any demographical area either in city, village or nomad land it can have data access to cloud and internet. Network control centre using satellite links act as primary support hub for all smart shelters locating anywhere in state.

Figure 4: Basic subsystem of smart shelter

Smart shelters are consist of multiple subsystems like Smart Phones, wifi, Public Addressing system, Test equipments including connectivity with cloud/Internet which can assist farmers with lot of information and real time data.

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6. IMPROVEMENTS & EXPENSION:

Once the primary phase of smart shelters to assist farmers is implemented successfully then there is lot of potential to expand the support services in other verticals also like fertilizer booking, grain pickup booking, and other e-services. Animal husbandry and fishing can also have great scope of expansion.

7. CONCLUSION:

Smart shelters are the one stop solution for farmers and agricultural individuals who can avail seamless assistance from top advisors and industry experts in their domain apart from farming assistance they can also avail govt. scheme benefits, soil, minerals, demographic, weather test reports on farming at single smart shelter. Smart shelter also enables farmer to contact domain expert sitting at network control center over video conference so their doubts get resolved.

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