PRECISION aGRICULTURE   
**date: 19TH sep, 2018**

# Overview

## Abstract

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|  | Precision Agriculture (PA) is the use of Information Technology (IT) in agriculture. The basic purpose to use Precision Agriculture is to have more yield, sustainability and productivity from the same field using IT. Different sensors are used to monitor the crop in every aspect like nutrients in soil, moisture, humidity, temperature of the crops and surrounding. In our project temperature and moisture of soil as well as sun exposure is being measured. The data gained is sent to the communication hub. Communication hub consists of two parts i.e. gateway and uplink. Gateway collects the data from all the sensors in the field at one point and uplink/upload to the database. Communication hub also dictates a water valve based on the real time soil readings which fulfil water needs of the plant whenever necessary. The Data gained in the database is then analyzed by Decision Support System (DSS) and steps are taken accordingly. Future predictions can be made based upon the historic data collected. Also If any area in the field is known to be affected based on the readings of sensors, remedial actions are taken in specified area which reduces time as well as resources. |

## Objective

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|  | The main objective to use precision agriculture is to increase the yield and efficiency of the field and save resources which are being wasted. Consequently more productivity on small area of field in order to meet the increasing demand of food.  Water is essential for the growth of field. Large acres of agricultural field requires lot of water which means wastage is also greater in this sector. PA ensures to save water by supplying water to only those areas where needed. This limits the wastage of water.  About one third of food is wasted during the production of agricultural food each year globally. It also affects the economic sector. PA can be helpful to reduce the food wasted during cultivation and harvest process.  Drones and GPS can also be used for aerial monitoring which provides real time images and data of the field. This lead to identify the healthy and unhealthy crops and irrigation and drainage problems.  Additionally, nutrients sensing technology can be used to identify the particular fertilizer needs of certain crops for healthy growth and thus saving the extra amount of fertilizer which is usually wasted. |

## Block Diagram For Data Flow:

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## 

Water Valve

## Probe

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| --- | --- |
|  | **Components:**   1. **Arduino uno** 2. **Temperature Sensor (lm35)** 3. **Humidity Sensor (DHT11)** 4. **Photoresistor** |

## Communication Hub

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|  | List business processes or systems which will be impacted by this project and describe how they will be affected. |

## Field Valve

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|  | Describe any specific components that are excluded from this project. |

## Database

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| --- | --- |
|  | Describe how you plan to implement the project. For example, will all parts of the project be rolled out at once or will it be incremental? What will be included in each release? |

## User Interface

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| --- | --- |
|  | Include recommendations that lead to your proposed solution. Summarize what you’re proposing to do and how you’re going to meet the goals. You’ll be able to expand on the details within the ‘Our Proposal’ section. |

# Approval and Authority to Proceed

We approve the project as described above, and authorize the team to proceed.

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| Name | Title | Date |
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| Approved By |  |  | Date |  | Approved By |  |  | Date |