UNATTENDED GROUND SENSOR SYSTEM (UGS)

HOW TO START SYSTEM?

- Turn on the MEG.
- Connect the MEG by Ethernet port
- Turn on the laptop (C2I sys)
- Open the Terminal by clicking on Terminal Icon on C2I Laptop or in search window enter Terminal and click on Terminal Icon to run it.
- Enter the following command to start the C2I Service (already mentioned on C2I laptop as well)
    ./start.sh
- The above command will run the system and now open Firefox and there is bookmark on Firefox click on that or enter the following URL
localhost:8080/cnc/login
- Login to application with the specified username/password (ugs/ugs).
- Click on Configuration Tab and select MEG Connection.
- MEG default IP is already entered in the field. Simply click on Check button to verify the communication between C2I and MEG.
- If **"MEG is not connected. Please check the MEG is powered ON, or the cable connection with MEG is OK or entered IP address is valid IP address of MEG."** Message appears then it means MEG is not connected properly or not powered on. Check the cable connection and power supply to MEG.
- If message appears **"MEG is connected"** then it means communication with MEG is Ok.
- Turn on the sensor to check the communication. (If any popup appears on C2I screen then everything is Ok and system is ready to deploy in field.

HOW TO DEPLOY?

- Deployment of UGS is very important and should be quite tricky. With limited number of sensors we need to cover the maximum vulnerable area. So for deployments always choose the most threaten area. Placement of sensors is another aspect and very important. PIR dots on top of sensor should point towards the vulnerable path and zone.
- All sensors are equipped with GPS module. Wherever you want to deploy the sensor simply turn-off your sensor and take it to the required location and turn-on the power button. Sensor will automatically detect the current GPS location and send GPS coordinates to the C2I laptop. C2I system will automatically place the sensor on actual location on map by using GPS coordinates.

- o **PIR NODE DEPLOYMENT**
  - o Normally we have 3 PIR with each sensor node. Each PIR node covers a specific area and we need to point out this node towards vulnerable area.

- o **MW NODE DEPLOYMENT**
  - o MW is combination of PIR and Microwave. MW and PIR both should face towards the vulnerable area.

- o **SEISMIC NODE DEPLOYMENT**
  - o Seismic sensor covers more area than other sensors. It works on vibrations in ground and it should be deployed on vulnerable area not on path but on one side of path.

HOW TO RECHARGE BATTERY?

- Recharging connector is already there on the sensor. Simply connect the sensor with Charger. Charging light on charger will show the indication that sensor is being charged.
- In case charging connector is not working then open the screws of sensor node
- Open the white box
- Unplug the battery
- Plug-in the charged battery (spare) to sensor so that there should not be any down time.
- Bring back the battery with you on post and plug it into charger with power solution.
- Red light should indicate to make sure that charging is in progress.
- When green light on, it means charging is complete and unplug the battery from charger.
- Now your battery is ready to replace with any sensor.

PRECAUTIONS.

- C2I laptop and all other components are sensitive and breakable components. Keep all components very secure and safe from any kind of shock or dust/water.
- Do not plug anything other than UGS items into power solution.
- Sensor node can be placed in sunlight but PIR sensor node (black eye on sensor) should not face the sun directly.
- Power station is purely designed for UGS system only. It is dependent on sun light and get the power from light. For long time rainy season it may power down as well. Keep the Power station at dry space and keep it secure from any kind of water or rain.
- C2I laptop is indoor use only and keeps it top of Power Sta.

- No USB/CD/DVD is allowed to plug-in with C2I laptop.

TROUBLESHOOT.

- If alert is not being received refresh the Firefox by F5 button on keyboard of C2I or click the refresh icon of Firefox.
- Check that MEG device is powered on or not.
- If MEG is already powered on then check the Ethernet cable is connected or not.
- To verify the communication between between C2I and MEG go to "Configuration" tab on UGS application and cliekc on "MEG Connection". Default IP Address of MEG is already entered. (just in case change of IP Address of MEG enter MEG IP) and click on Check button.
- If **"MEG is not connected. Please check the MEG is powered ON, or the cable connection with MEG is OK or entered IP address is valid IP address of MEG."** Message appears then it means MEG is not connected properly or not powered on. Check the cable connection and power supply to MEG.
- If message appears **"MEG is connected"** then it means communication with MEG is Ok.
- Now check the python service is running on C2I system with following command in terminal

  ps –x | grep python
- If main.py is displaying as one entry in result of above command then it means service is running. If main.py is not being displayed then restart the C2I laptop.
- Python service should run in background to receive alerts.
- If project URL is not working or showing error message on Firefox then you need to check the Tomcat (Server) is running or not. To run the Tomcat server open the Terminal and enter the following command.
  ./startup.sh
- The above command will start the tomcat and now check again in Firefox that application is working or not.
- Just in case of any problem simply restart the whole system. First unplug the power cable of MEG and plug it again. Then restart the C2I laptop and follow the instructions to start the application.