PROJECT DEVELOPMENT AGREEMENT

NAME OF THE PROJECT	Ship Intrusion System Using 3 axis Accelerometer
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PROJECT ID	ELRMD059046
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DESCRIPTION –

Detecting waves generated by a small boat model using 3 axis accelerometer connected to Arduino Uno. Sending the data detected to laptop by a wireless module. Comparing the data detected with a data already stored.

Points to ponder -

1. In the ideal state the water will be having silent/uniform waveform.
2. The device will record the waves from a particular distance.
3. The motion of boat will have a particular range in order to generate waves in particular range.
4. The data can be sent using Bluetooth/Wi-Fi either by Http post or any other feasible method.

APPLICATION –

1. Whenever the boat will pass through water, waves will be created. Wave's unit/range will be created using the device.
2. The device will wirelessly send the data to the system/database.
3. The localhost system will have a web based control panel that can be used to show reporting of the data and further analyze the activities in the water.
4. The data can be used to compare the identified boat and unidentified boat using their specific wave creation power based on their velocity.

HARDWARE MATERIAL –

2 arduino Uno, An ADXL335 (accelerometer), 2 XBees (for wireless sending data), jumper wires (fly leads).

SOFTWARE MATERIAL –

An Arduino IDE, X-CTU (to configure XBees), PLX-DAQ (to compare detected value with stored value in excel and make a graph for analysis).

DEVELOPMENT PROCESS –

Steps:

1. We have 2 sides one is Transmitting end and another is receiving end.

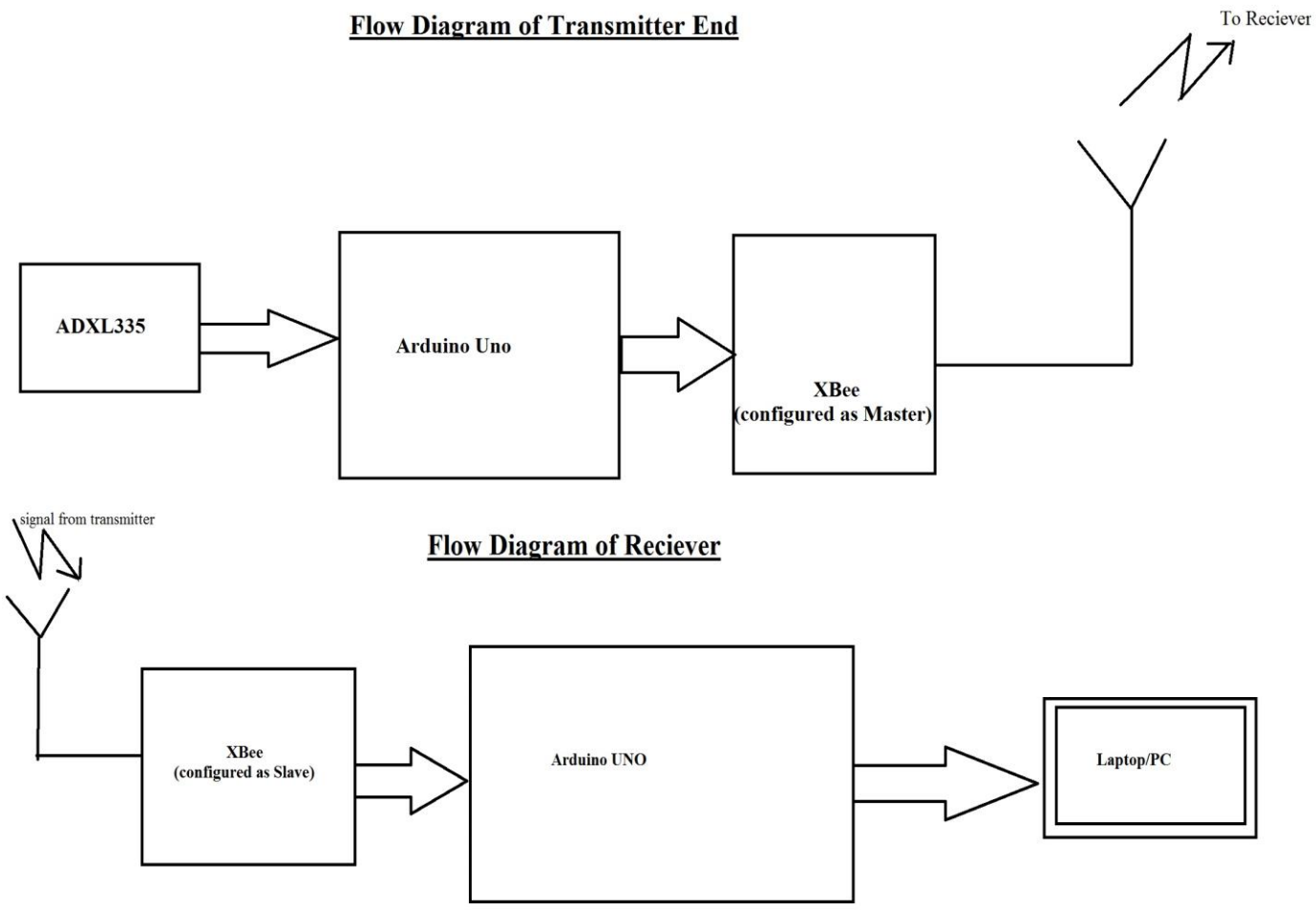
2. At transmitting end we connect ADXL335 accelerometer module and 1 XBee (which is configured as Master) with 1 Arduino Uno.
3. And at receiver end we connect another XBee (which was configured as a Slave) to an arduino which is connected to PC/laptop (Xbee gets data from master and receives it on serial of 2nd arduino which is serially connected with PC/Laptop).

TESTING PROCESS –

Firstly, if the boat/ship passes through, then it will generate wave. The accelerometer (which is fixed on water to detect wave) will detect the wave and gives the change in value w.r.t its initial value (when no boat/ship had passed or say it's ideal position in water) of x-axis, y-axis and z-axis to arduino. Using code in Ardunio the values of x, y and z-axis will now send to receiver through XBee.

At the receiver end, XBee gives value (numerical) to arduino. Again our arduino code will enables us to store the value obtained in Excel sheet. Through PLX-DAQ software in excel, it will plot a graph between already stored data and recent data to compare and helps in identification of identified boat and unidentified boat.

FLOW DIAGRAM –



** Note:

1. We can use also Bluetooth module, Wifi Shield, RF module or ESP8266 wifi module instead of XBee.