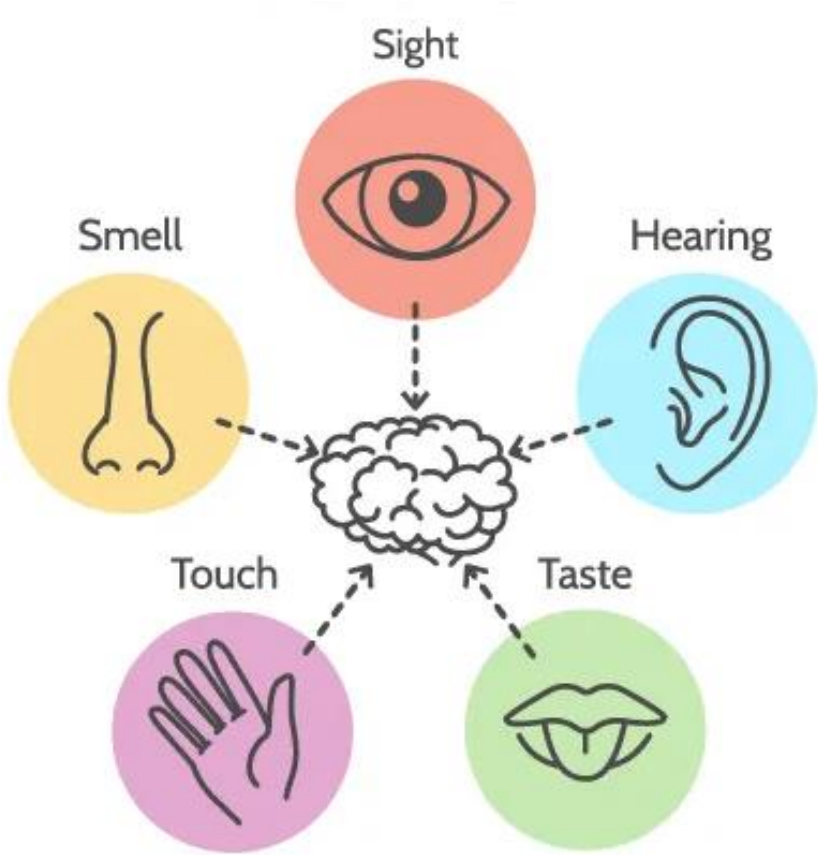
Internetul Lucrurilor

Condiționare semnal

Senses

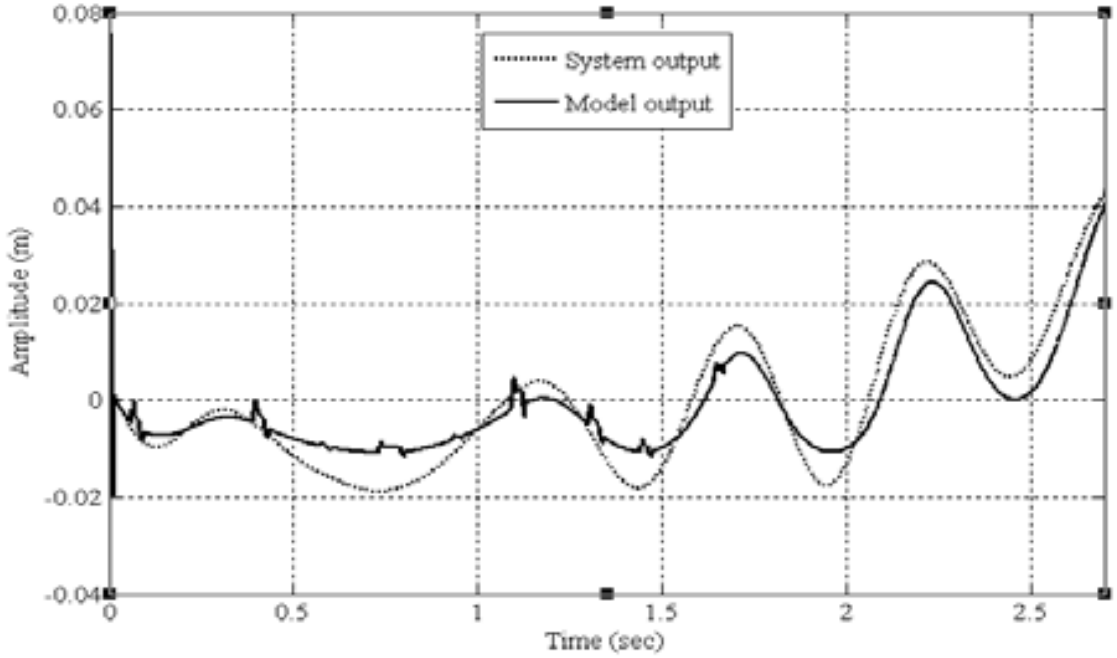


Informație

X, Y, a,b,c – Simboluri literale

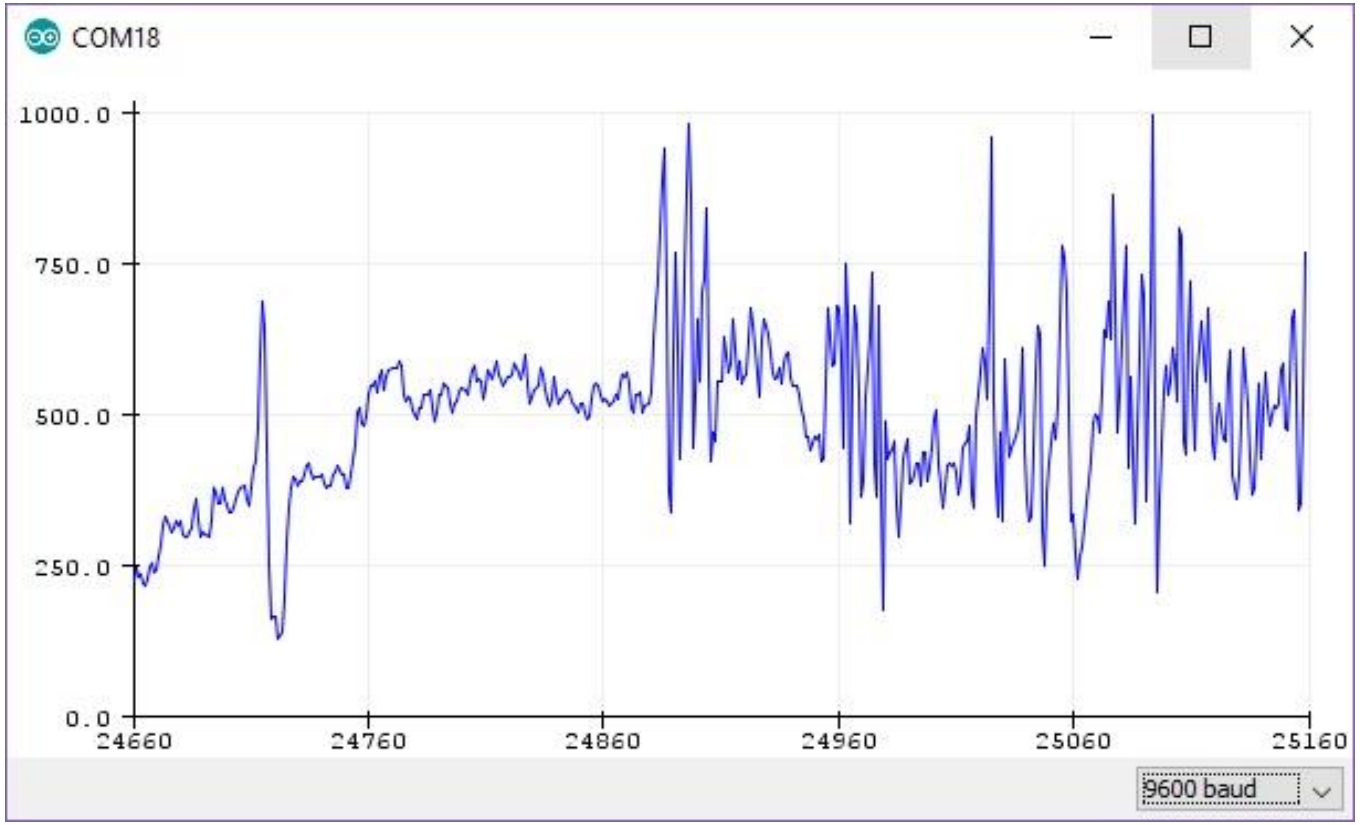
35, 42, 32.7
simboluri numerice pentru a defini o cantitate Є N, R

70 km/h, 50 V, 25 °C
Informație – date cu sens



Semnal - Evoluția Informației in timp

Achiziție Semnal



AnalogInOutSerial | Arduino 1.8.12 (Windows Store 1.8.33.0)

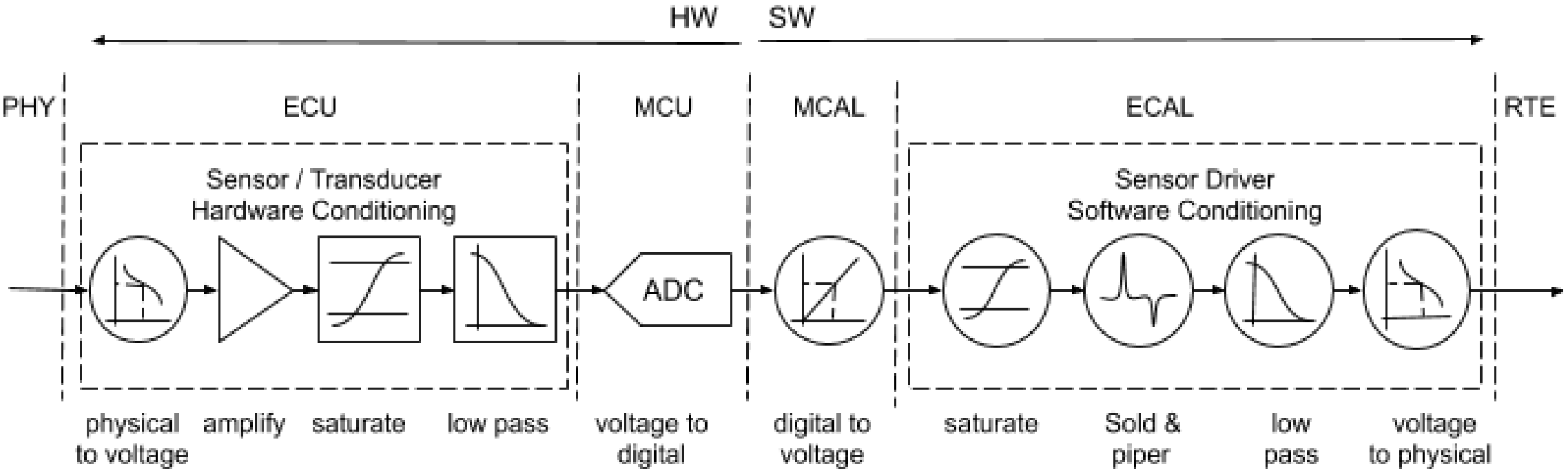
File Edit Sketch Tools Help

AnalogInOutSerial

```
void setup() {
  // initialize serial communications at 9600 bps:
  Serial.begin(9600);
}

void loop() {
  // read the analog in value:
  sensorValue = analogRead(analogInPin);
  // map it to the range of the analog out:
  outputValue = map(sensorValue, 0, 1023, 0, 255);
  // change the analog out value:
  analogWrite(analogOutPin, outputValue);

  // print the results to the Serial Monitor:
  Serial.print("sensor = ");
  Serial.print(sensorValue);
  Serial.print("\t output = ");
  Serial.println(outputValue);

  // wait 2 milliseconds before the next loop for the anal
  // converter to settle after the last reading:
  delay(2);
}
```

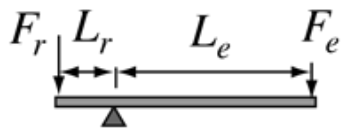
1 Arduino Uno on COM5

Achiziție Semnal

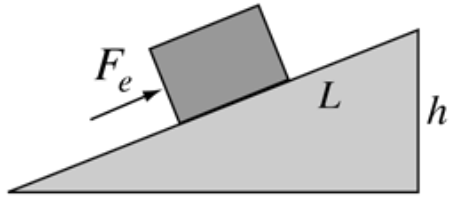


Operații mecanica

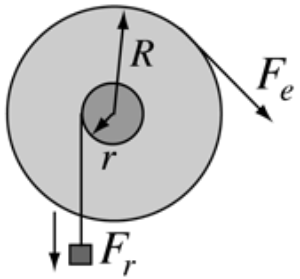
ideal mechanical advantage - IMA



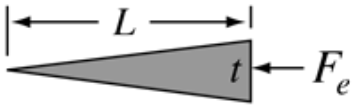
Lever $IMA = \frac{L_e}{L_r}$



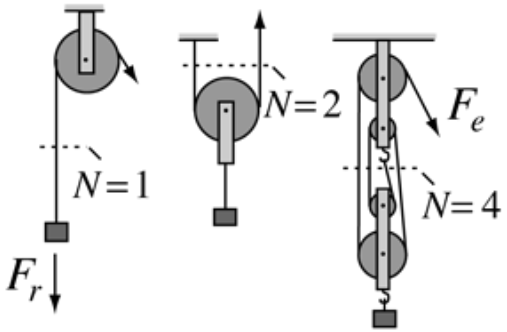
Incline $IMA = \frac{L}{h}$



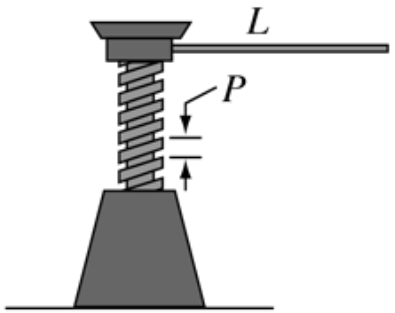
Wheel and axle $IMA = \frac{R}{r}$



Wedge $IMA = \frac{L}{t}$

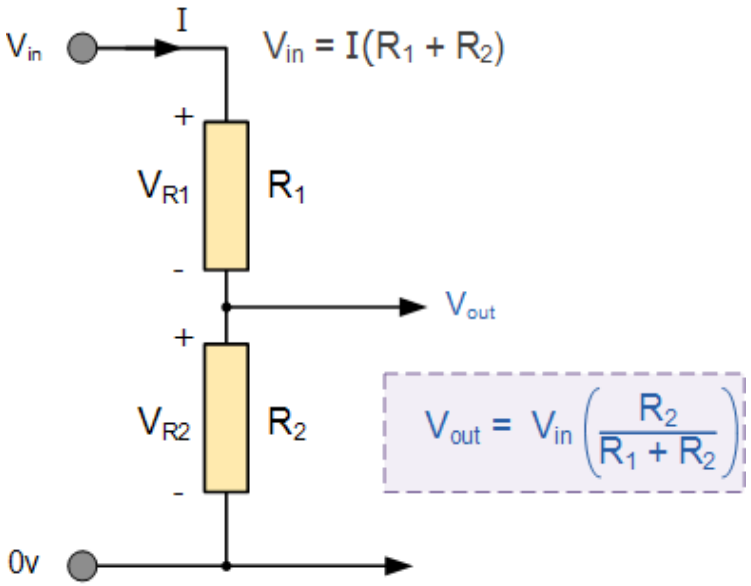


Pulley $IMA = N$

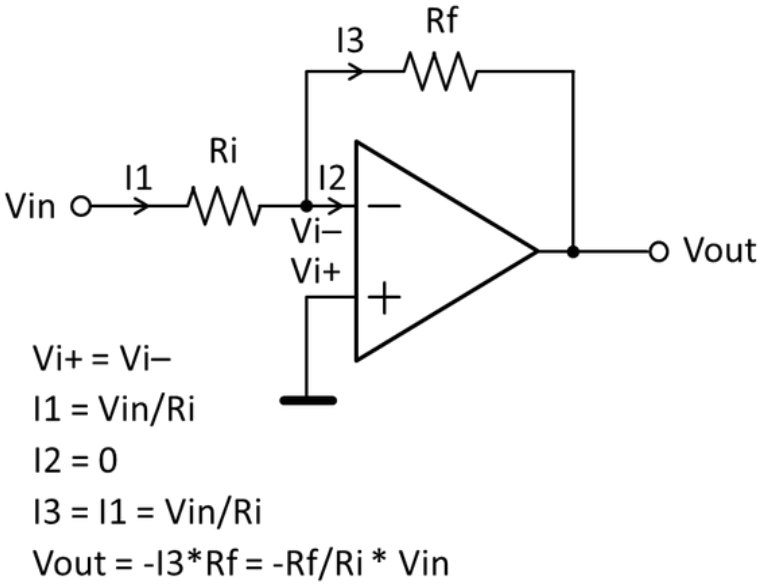


Screw $IMA = \frac{2\pi L}{P}$

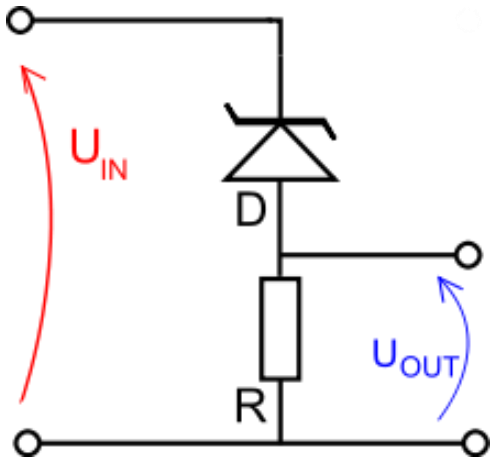
Condiționare HW - Amplificare/Atenuare/Saturare



Atenuare
(împărțire)

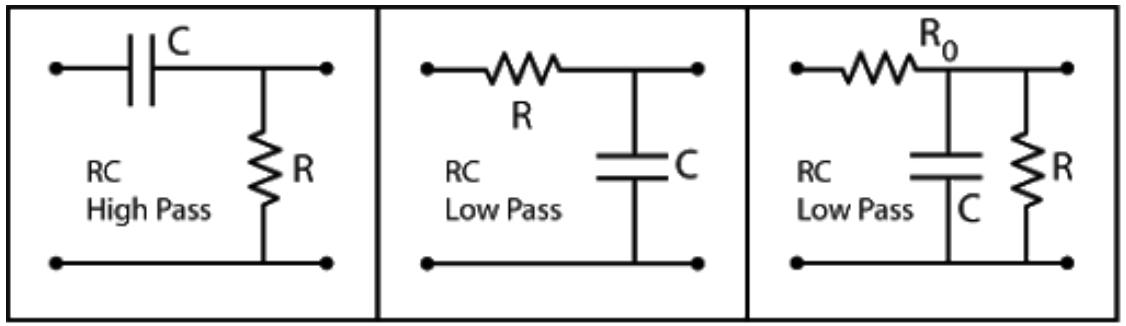


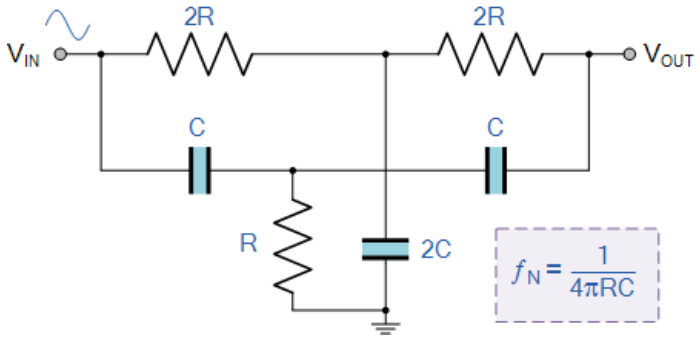
Amplificare
(înmulțire)

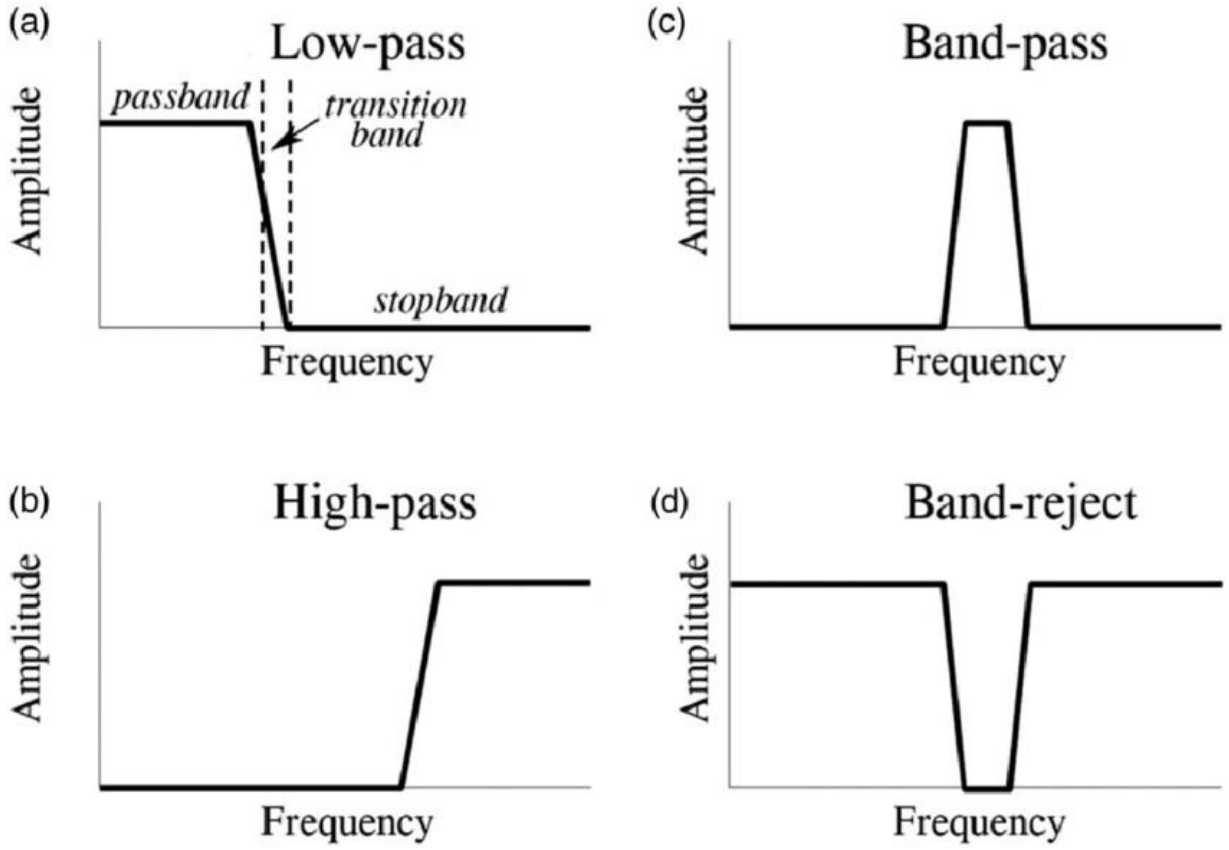


Saturare (taiere)

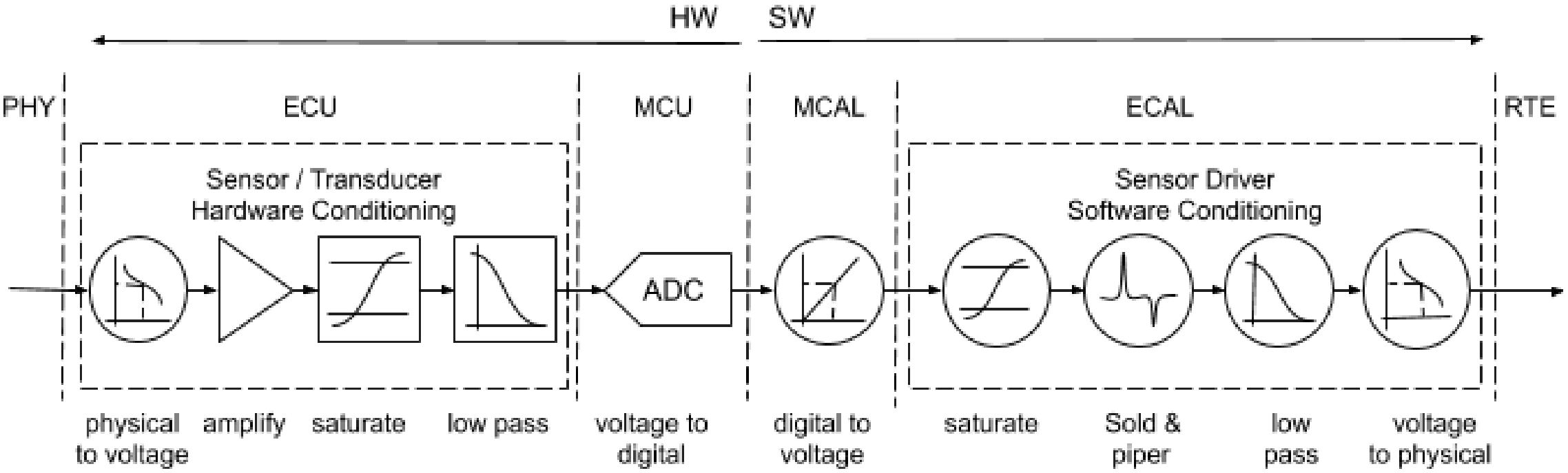
Condiționare Hardware - Filtrare



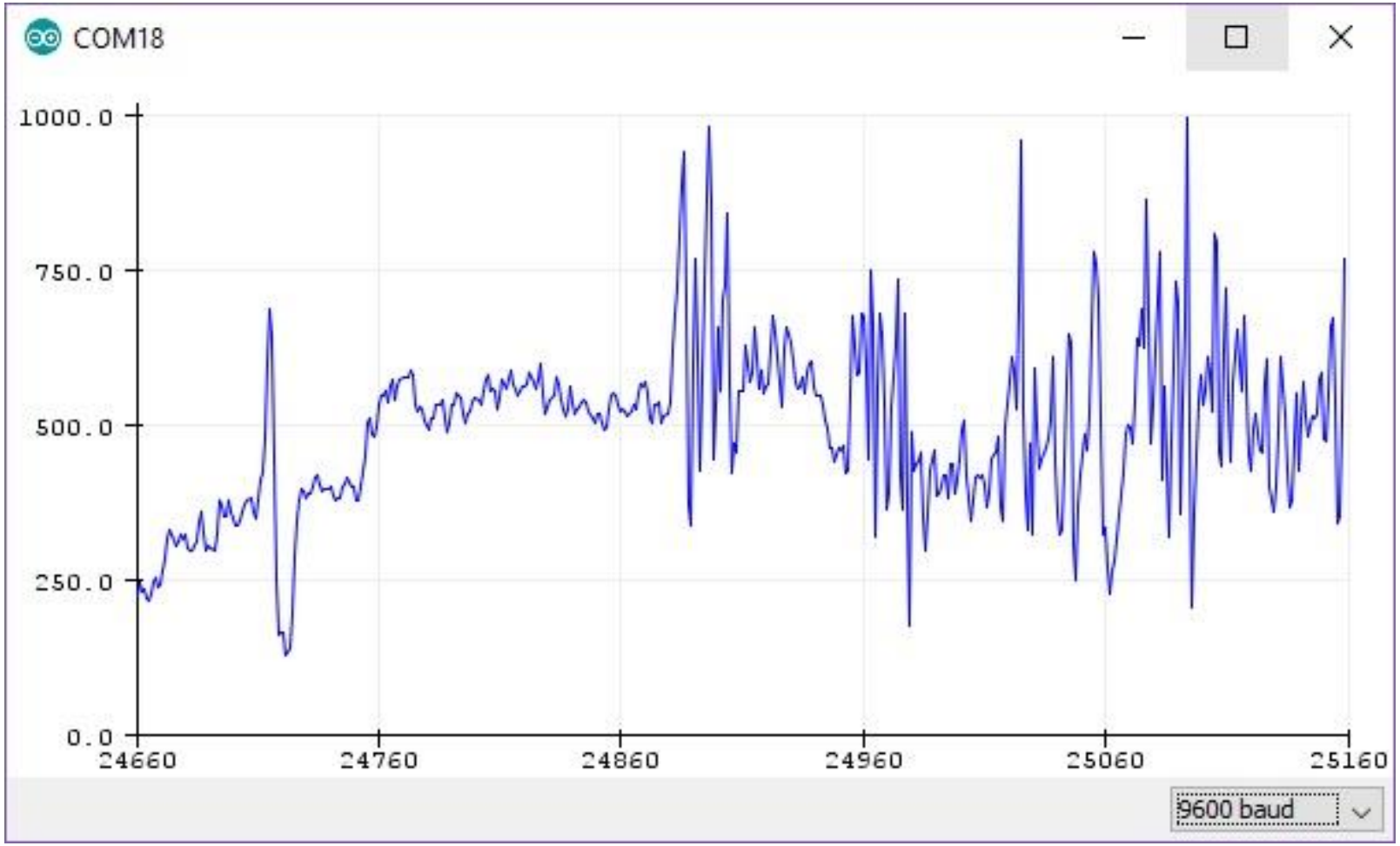




Achiziție Semnal

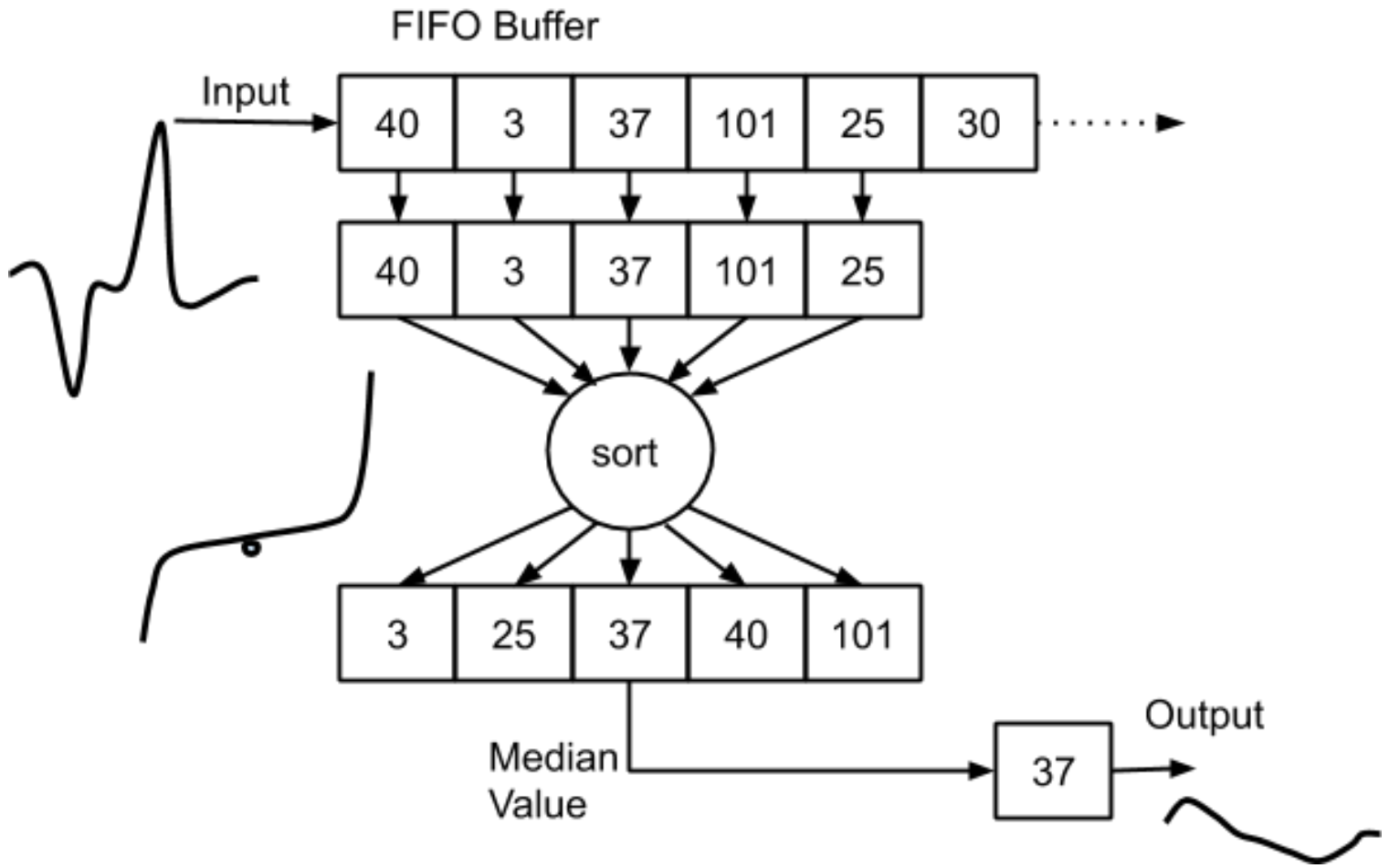


Achiziție Semnal



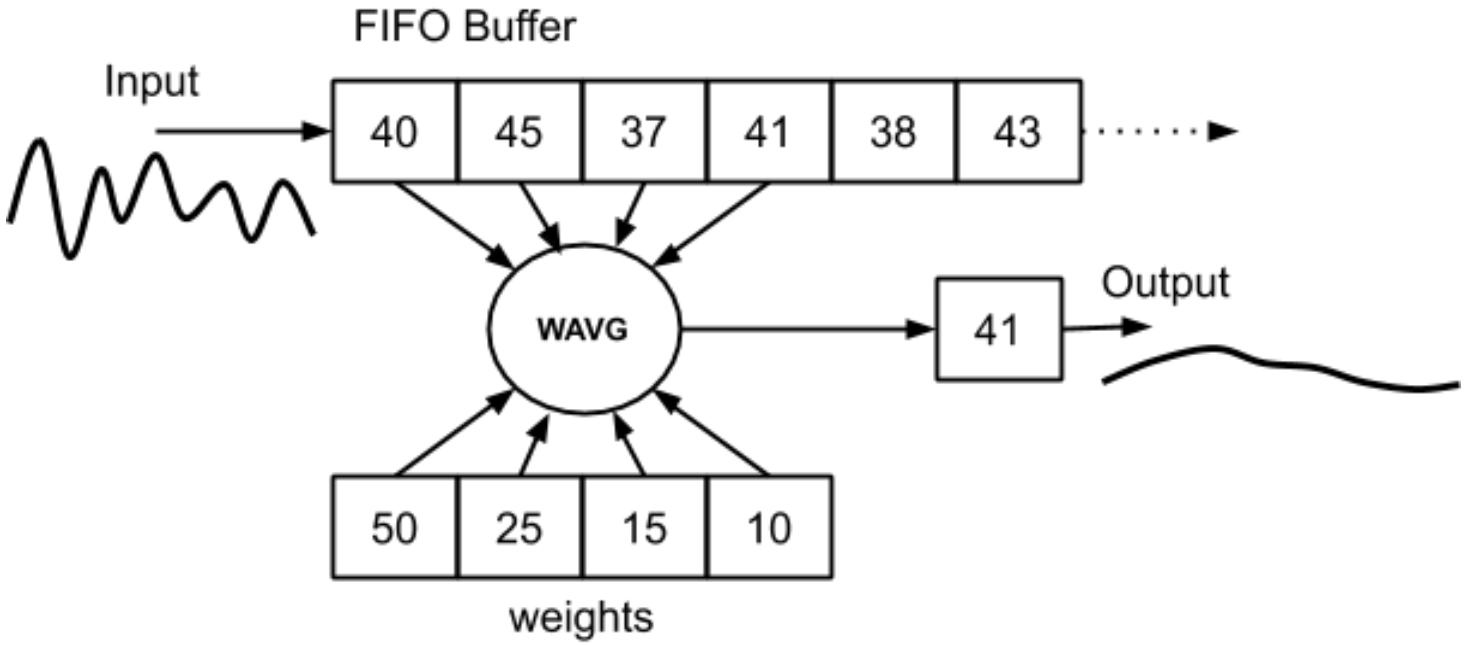
Condiționare SW - Sare si piper

- Statistic
- Median
- Sare si piper
- Impulsionar



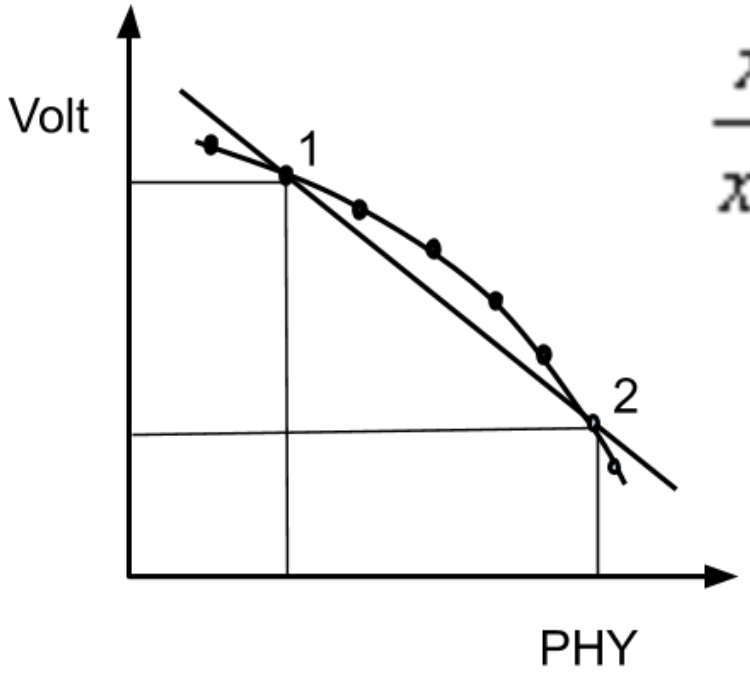
Condiționare SW – Mediere ponderat

- Trece jos
- Netezire
- Zgomot alb
- Gausian
- Mediere

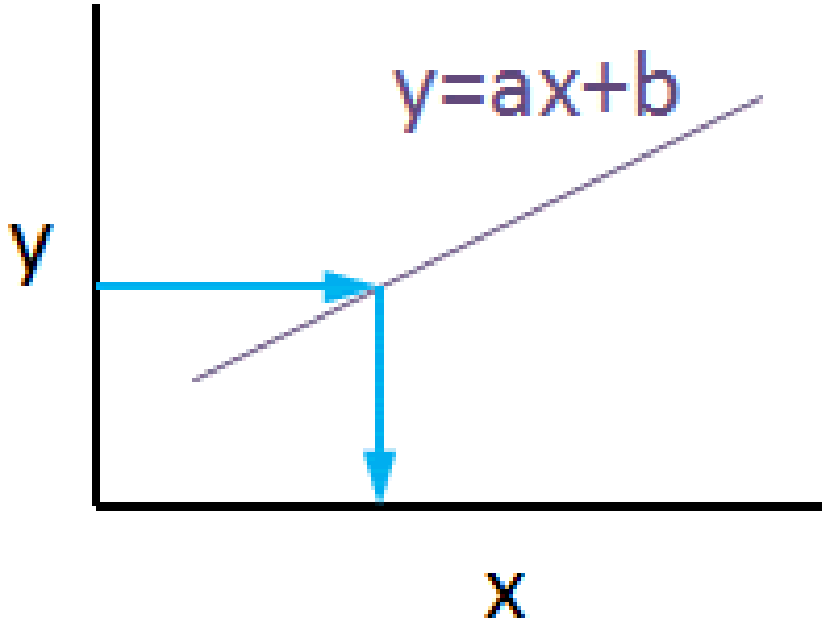


$$M(X) = \frac{x_1 n_1 + x_2 n_2 + \ldots + n_k a_k}{n_1 + n_2 + \ldots + n_k} = \frac{\sum_{i=1}^{k} x_i n_i}{\sum_{i=1}^{k} n_i}$$

Condiționare SW – Conversie (ne)lineara



$$\frac{x - x_1}{x_2 - x_1} = \frac{y - y_1}{y_2 - y_1}$$



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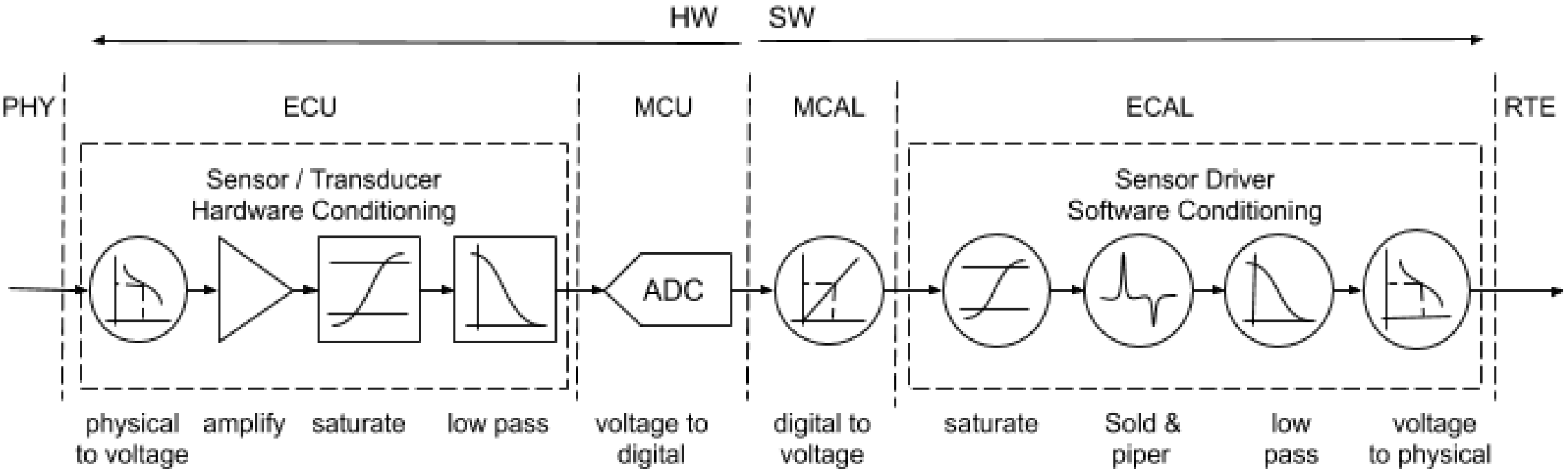
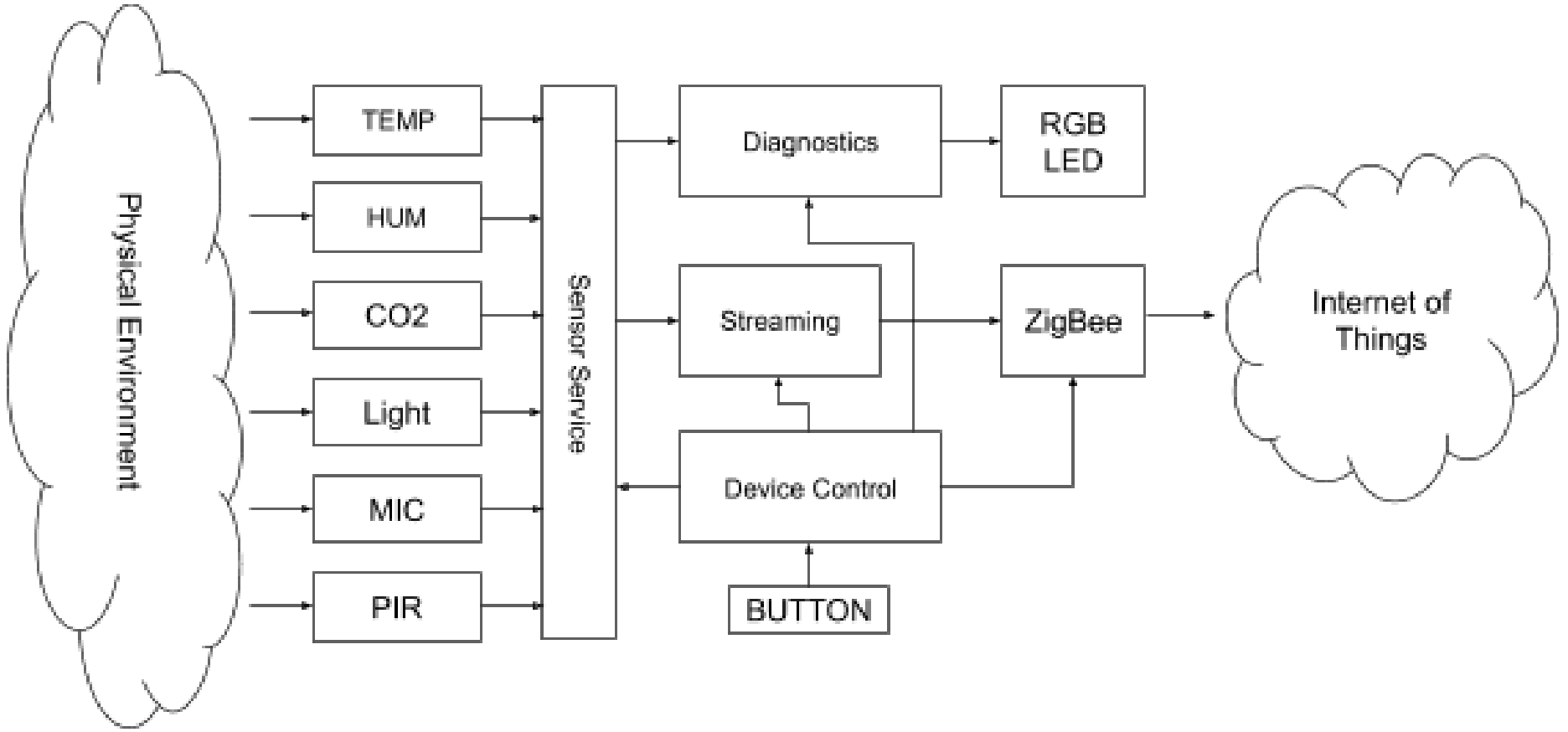
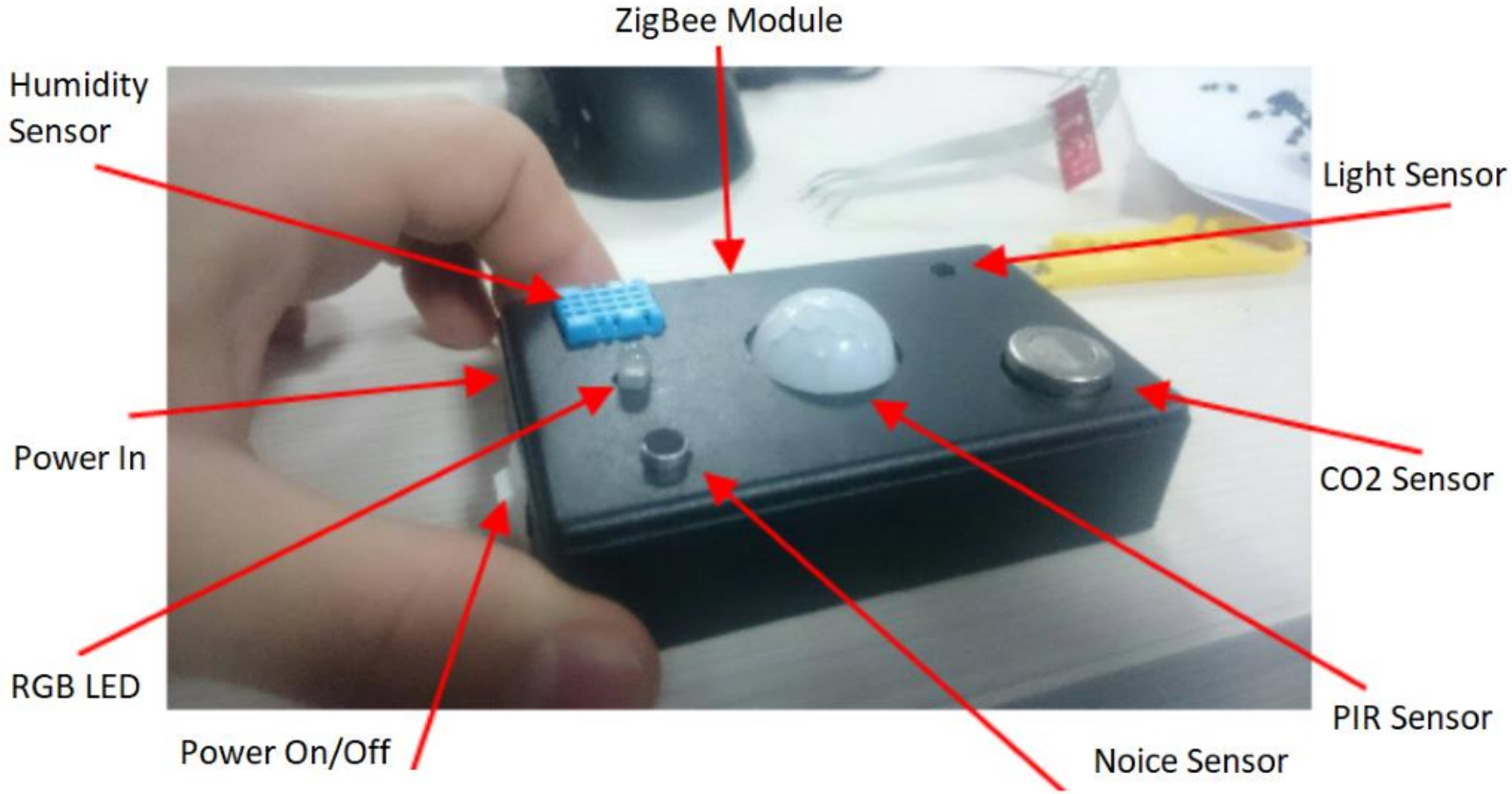


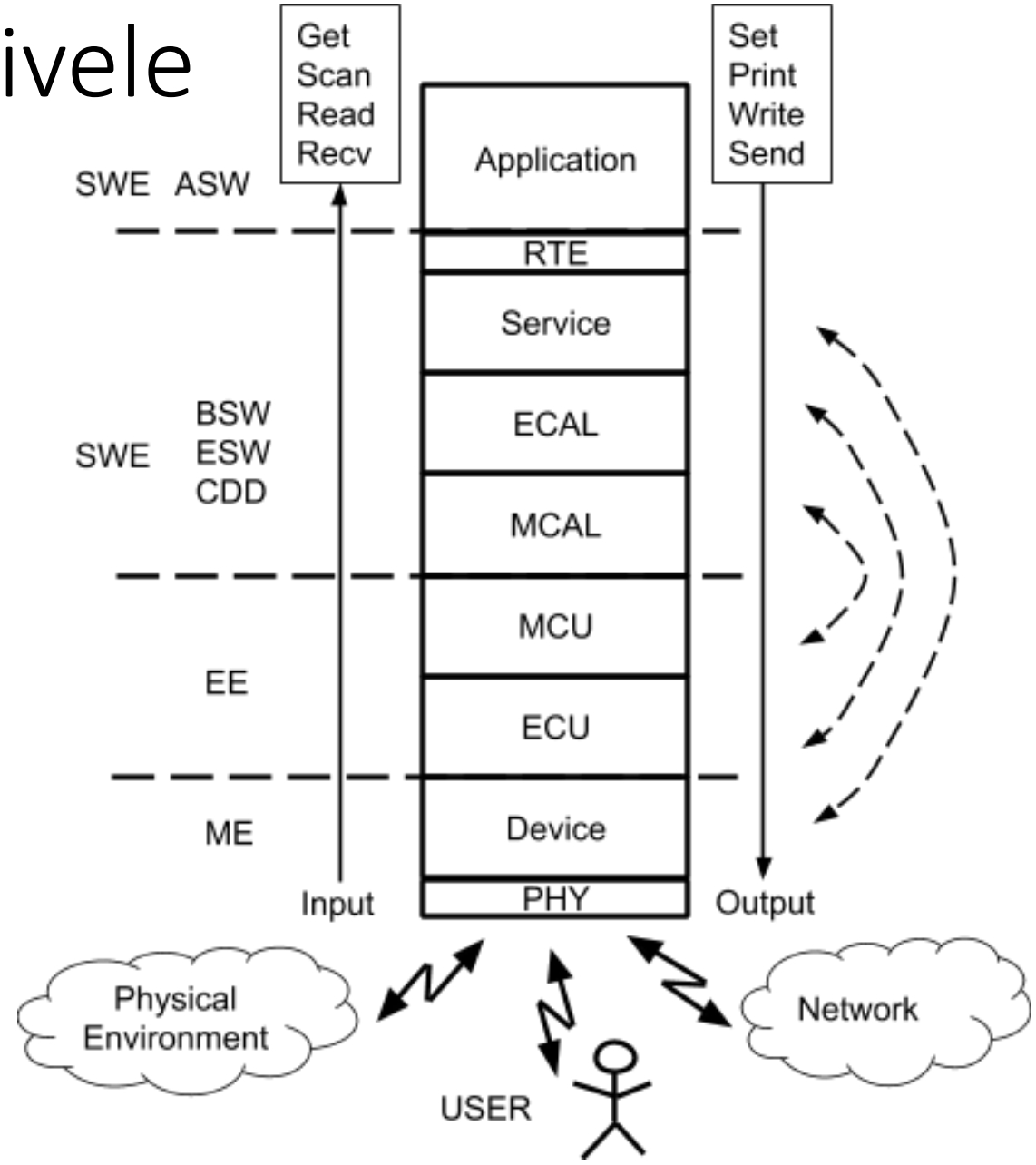
Achiziție Semnal



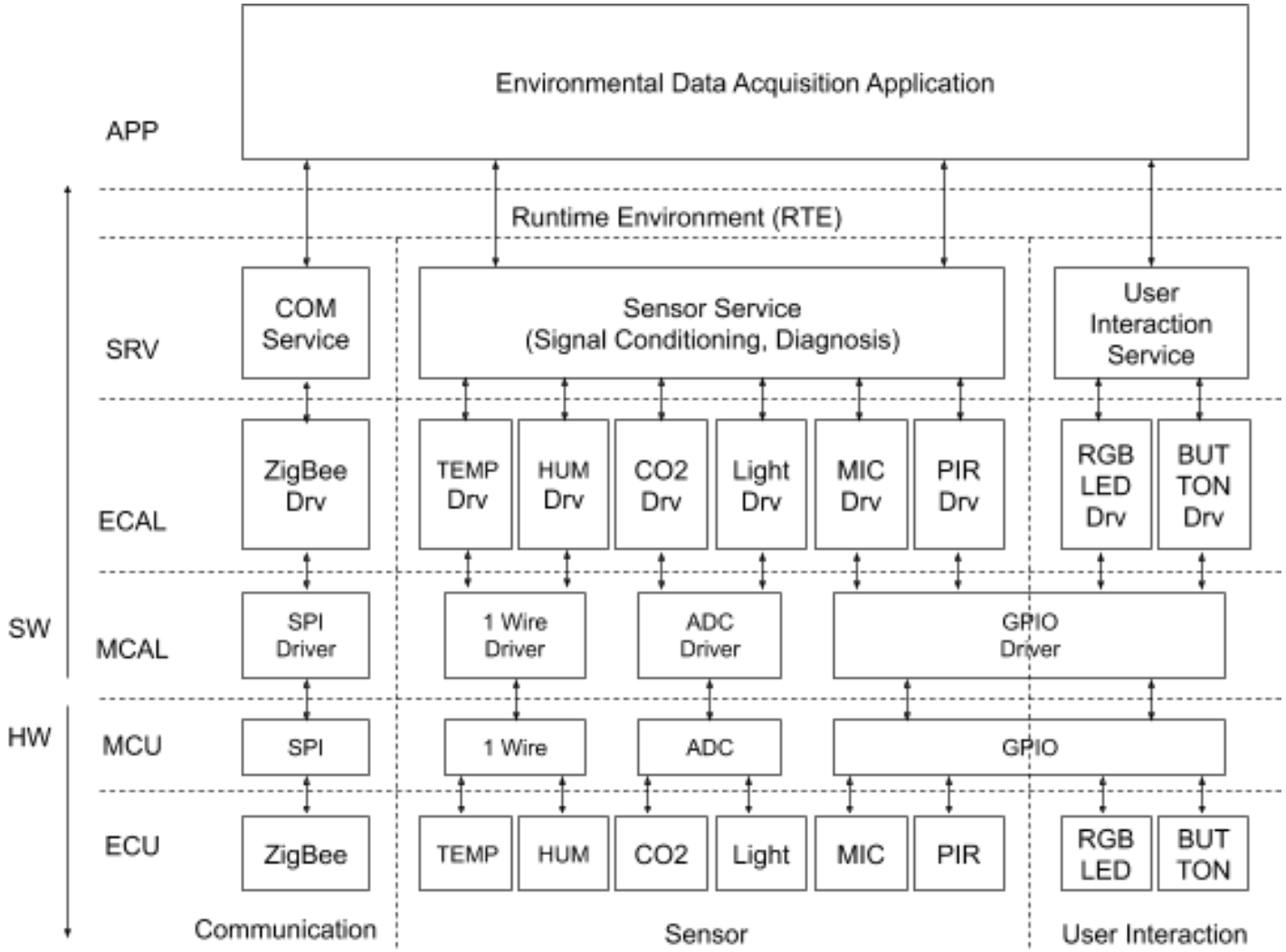
Achiziție Semnal



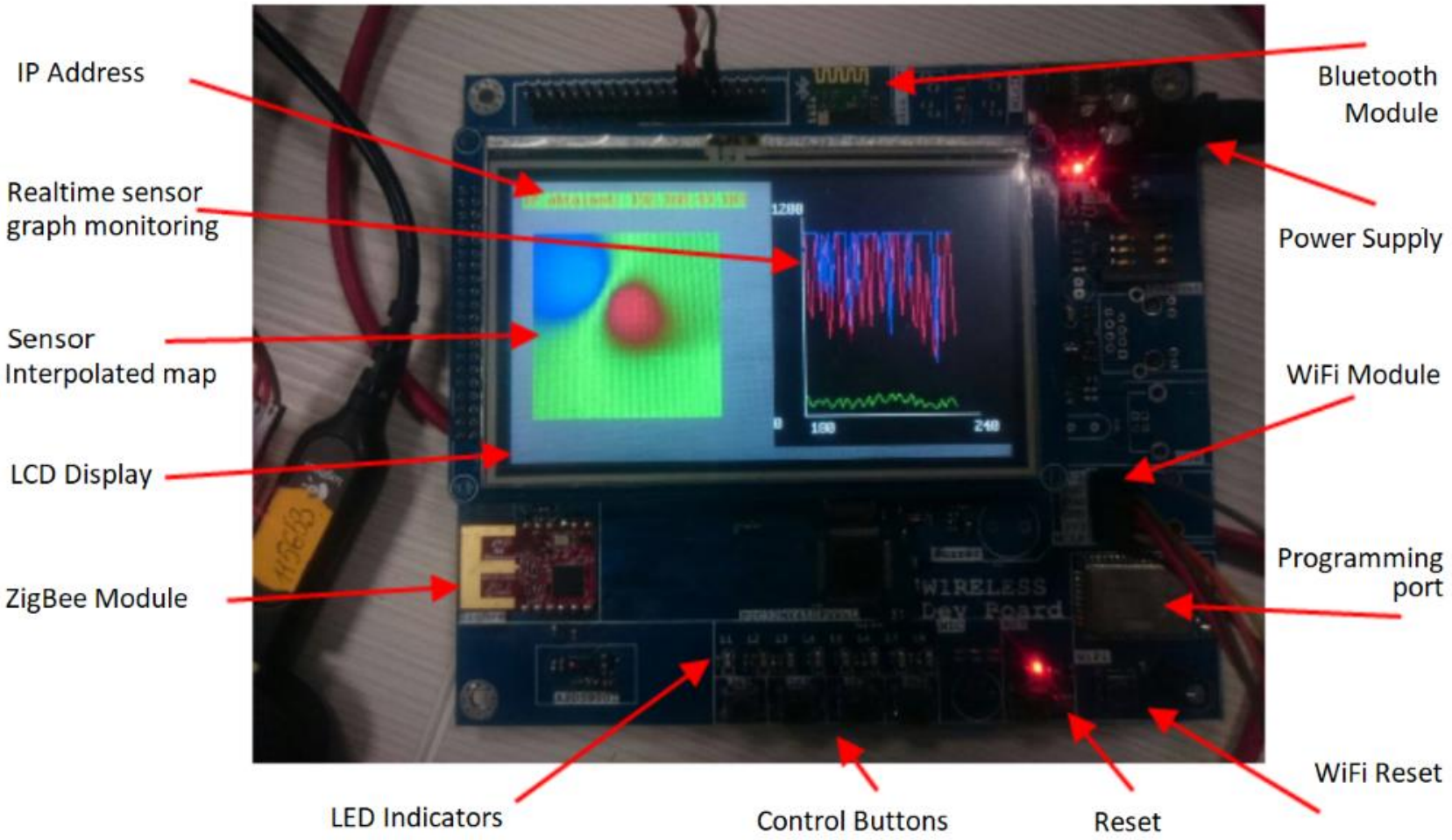
Arhitectura pe nivele



Arhitectura pe nivele



Achizitie Semnal



Senzori Virtuali