

# Sprint review

Sprint 5 - fin

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# Inhoud

Flic Button

Afstandsbeperking

Retrospective

Planning



# Flic button



# Afstandsbepaling

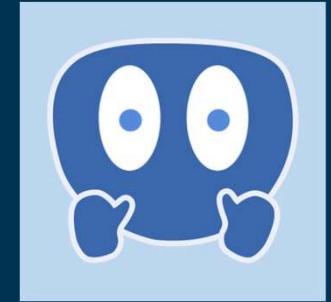
- RSSI Signaal
  - Algoritme

```

1 #include <iostream>
2 #include <cmath>
3 #include <vector>
4
5 // using namespace std;
6
7 // Constants
8 const double targetDistance = 2.0; // Target distance in meters
9 const double tolerance = 0.01; // Tolerance for distance in meters
10 const double rssValue = -63.0;
11
12 // Function to calculate distance using the RSSI formula
13 double calculateDistance(double txPower, double rss, double n) {
14     return std::pow(10, ((txPower - rss) / (10 * n)));
15 }
16
17 int main() {
18     std::vector<std::pair<double, double>> results; // Vector to store tested values and their distances
19
20     // Loop to test different values of Tx Power and N
21     for (double txPower = -100; txPower <= 0; txPower += 1) {
22         for (double n = 2; n <= 4; n += 0.1) {
23             double calculatedDistance = calculateDistance(txPower, rssValue, n); // Assuming constant RSSI value of -63.0
24             // std::cout << txPower << "\t" << n << "\t" << calculatedDistance << "\n";
25
26             // If calculated distance is within tolerance of target distance, save the values
27             if (std::abs(calculatedDistance - targetDistance) <= tolerance) {
28                 std::cout << "Tx: " << txPower << "\tN: " << n << "\tDX: " << calculatedDistance << "\n";
29                 results.push_back(std::make_pair(txPower, n));
30             }
31         }
32     }
33
34     std::cout << calculateDistance(-53, 0, 3.3);
35
36     // Displaying the results
37     std::cout << "Tx Power\tN\tDX\n-----\n";
38     for (auto result : results) {
39         std::cout << result.first << "\t" << result.second << result.third << std::endl;
40     }
41
42     return 0;
43 }
44

```

**Distance =  $10^{((\text{Measured Power} - \text{Instant RSSI})/(10^*\text{N}))}$ .**



Distances in meter(m)  
RSSI values in dBm

**Table name:** rssi inside

### **Purpose:**

\* LU: tablet lies down, faces up

\*SA: tablet stands up, faces away from the tag

Distances in meter (m)

RSSI values in dBm

**Table name:** rss1 outside

### **Purpose:**

\* LU: tablet lies down, faces up

\* SA: tablet stands up, faces away from the tag

# Planning

- Flic functionaliteit afronden
- BLE functionaliteit afronden
- Testen
- Demovideo
- Voorbereiding 95%-presentatie (30/05/2024)
- Documentatie (vooral Onderzoeksrapport, Project documentatie)



# Feedback

Hebben jullie feedback/opmerkingen voor ons?  
En eventueel ook vragen?

