# Jianqi Chu

CEO
Yi Qi Software

YIQISOFT
亿琪软件

# YIQI Partner Development Case

Jianqi Chu

13 Jun 2018

# About YIQISOFT

- Huawei Global Partner in IoT
- Focus on IoT Solutions
  - Smart City
  - Smart Factory
  - Smart Community
  - Smart Agriculture
- IoT Education

Huawei Technology Certification

Shanghai YiQi Software Co., Ltd.

Relying on Huawei Technologies Co., Ltd. 's

**OceanConnect IoT Platform（IoM Platform 1.3）**

**open capability in IoT Domain**

Has built

**YiServer V1.0**

Huawei Cloud Open Labs hereby grants this

HUAWEI ENABLED certificate and authentication mark.

Period of authorization: 2018-03 to 2020-03

HUAWEI ENABLED

Huawei Technologies Co., Ltd.

Hongyi, Zhang
Cloud Open Labs Director

Grant Date: March 01, 2018

Certificate No.: 201803072

# We want to develop an IoT application: Environment Device

Smart Device base on NB-IoT technology

# How to develop an IoT application?

## South Device

Huawei LiteOS embedded
Collect Sensor Data
Send to IoT Platform

+

## IoT Platform

Huawei
OceanConnect

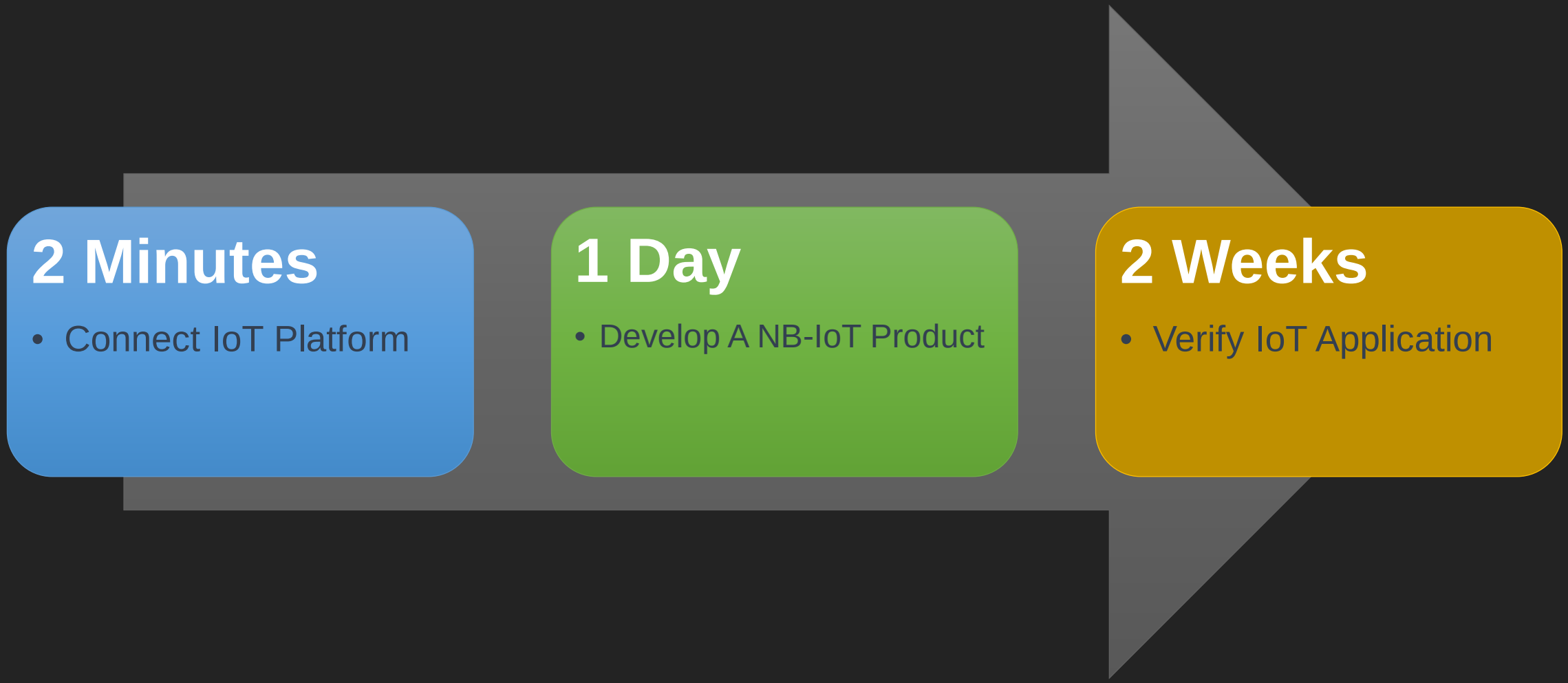
Profile + Plugin
Parse Business Data
Build Rules

+

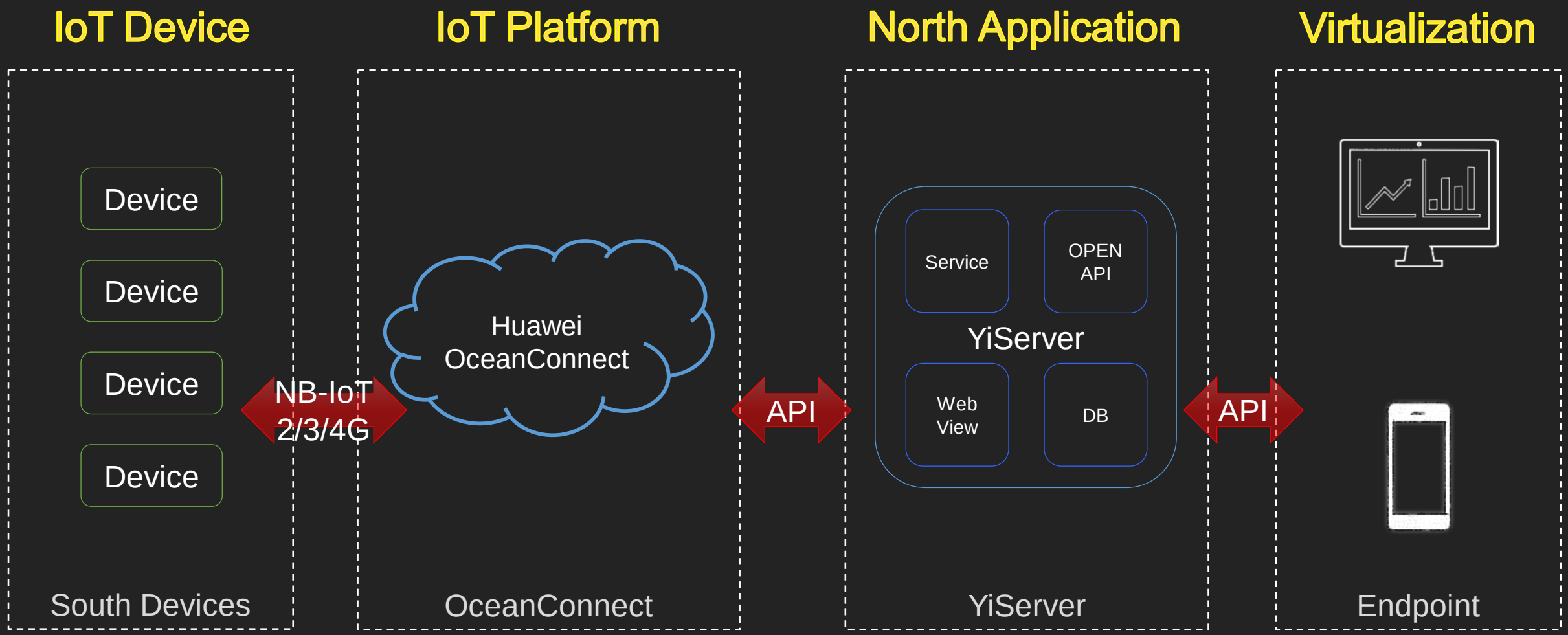
## North Application

Connect to OceanConnect
A backend application
App Management

# “2 + 1 + 2” Development Action



# End-to-End IoT Architecture

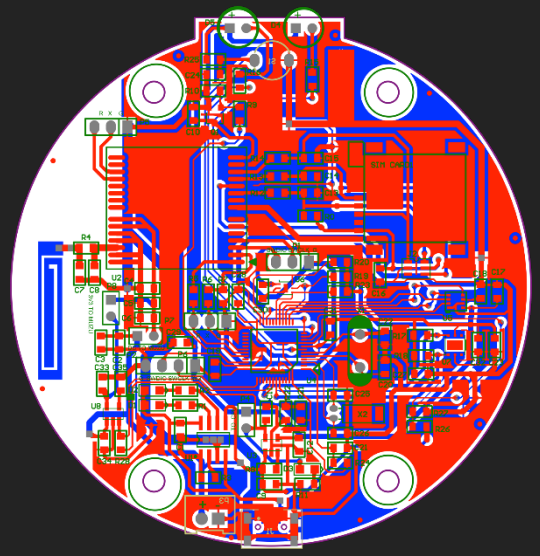


# IoT Device (Hardware Development)

Huawei
OceanConnect

MCU embedded or OpenCPU

Battery
NB-IoT
Antenna



PCB with in Sensors
Temperature
Humidity
Illumination

Sampling

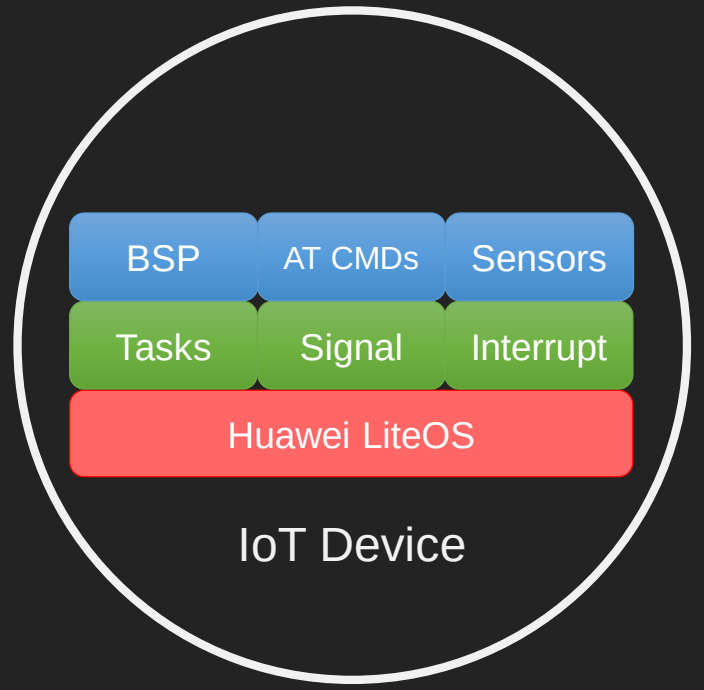
NB-IoT Module

AT Commands

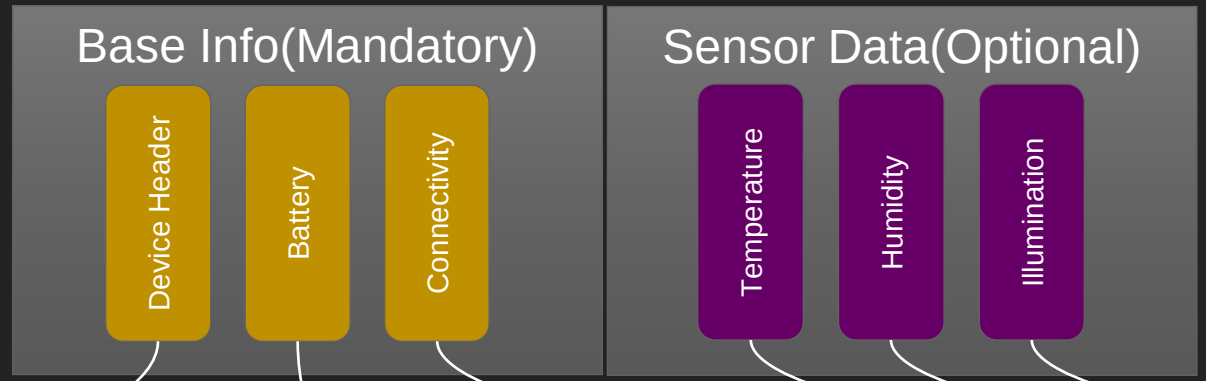
Lite

LiteOS

# IoT Device (Software Development)




## Upload Data Structure(BYTES stream encode)




45 56 42 01 0D | 55 0D F2 | FF AE 15 F6 01 0E 81 84 27 00 A1 13 | 0A 14 | 19 85 | 58 34

**Device Header**

| | | |
|---|---|---|
| Type | 0x455642 | EVB |
| Version | 0x01 | V1 |
| Command | 0x0D | Upload |

**Battery**

| | | |
|---|---|---|
| Level | 0x55 | 85% |
| Voltage | 0x0DF2 | 3570mV |

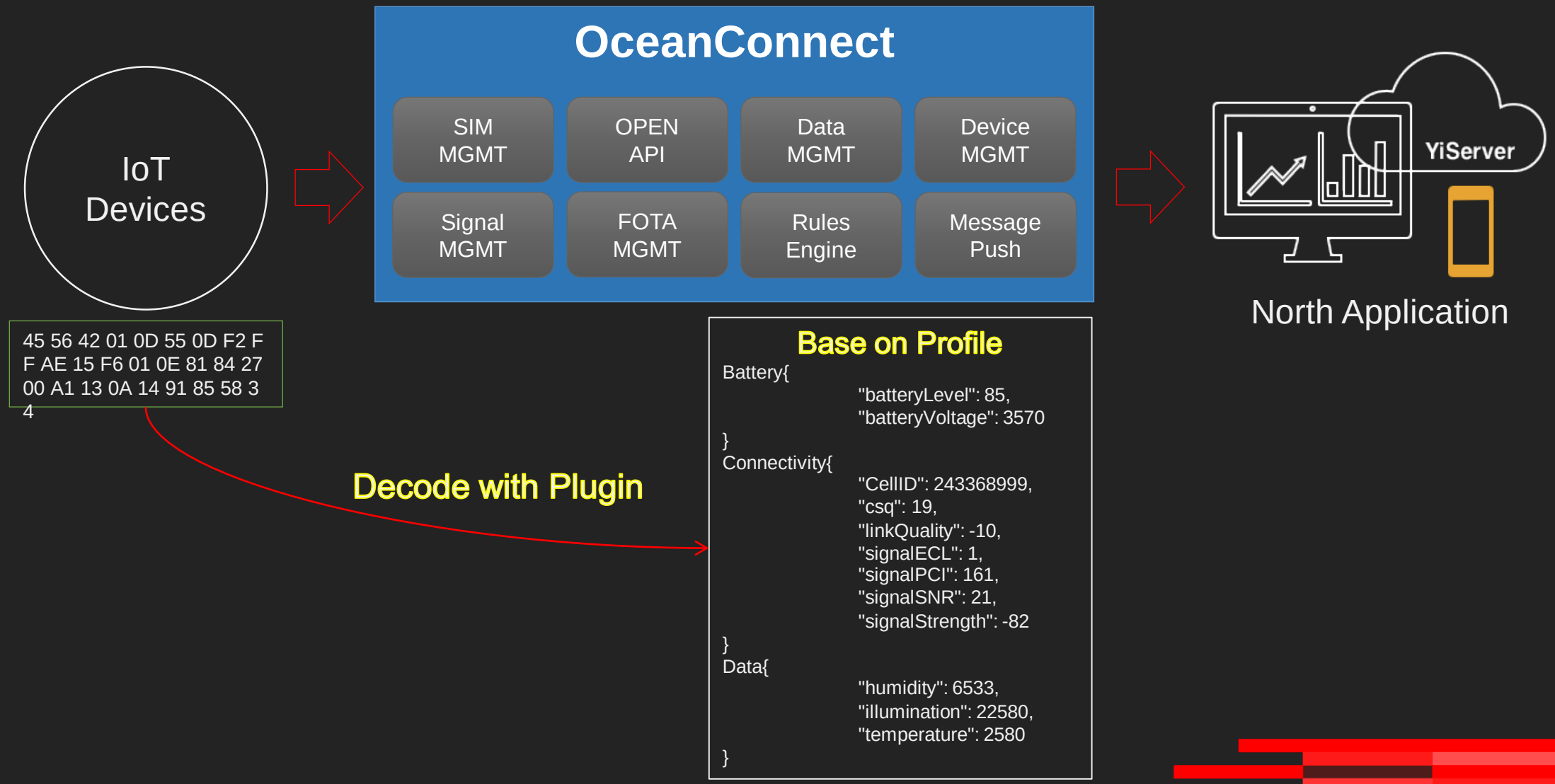
**Connectivity**

| | | |
|---|---|---|
| Strength | 0xFFAE | -82 |
| SNR | 0x15 | 21 |
| LinkQuality | 0xF6 | -10 |
| ECL | 0x01 | 1 |
| CellID | 0x0E818427 | 243368999 |
| PCI | 0x00A1 | 161 |
| CSQ | 0x13 | 19 |

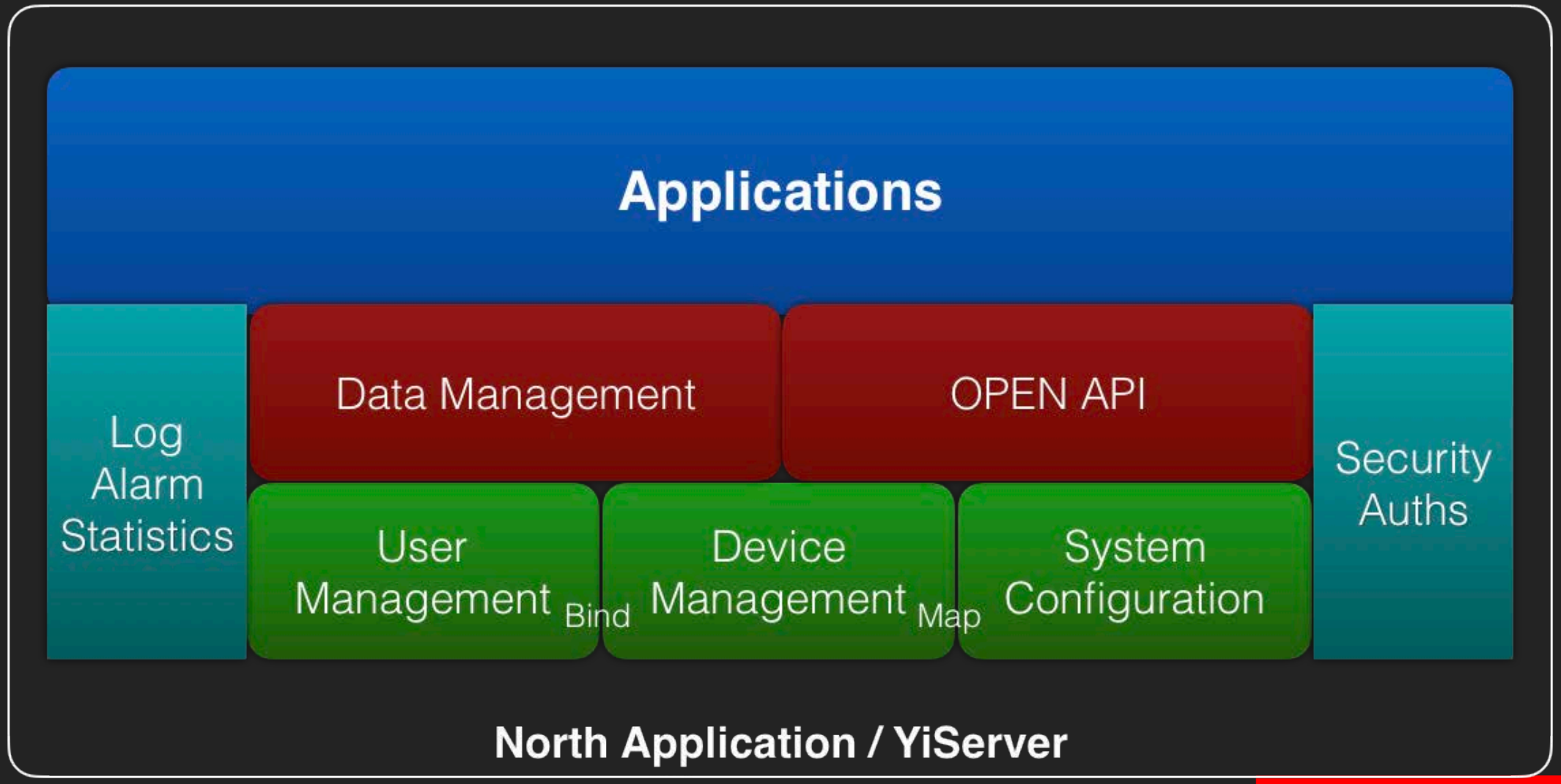
**Sensor Data**

| | | |
|---|---|---|
| Temperature | 0x0A14 | 25.80℃ |
| Humidity | 0x1985 | 65.33% |
| Illumination | 0x5834 | 22580 Lux |

# IoT Platform / OceanConnect

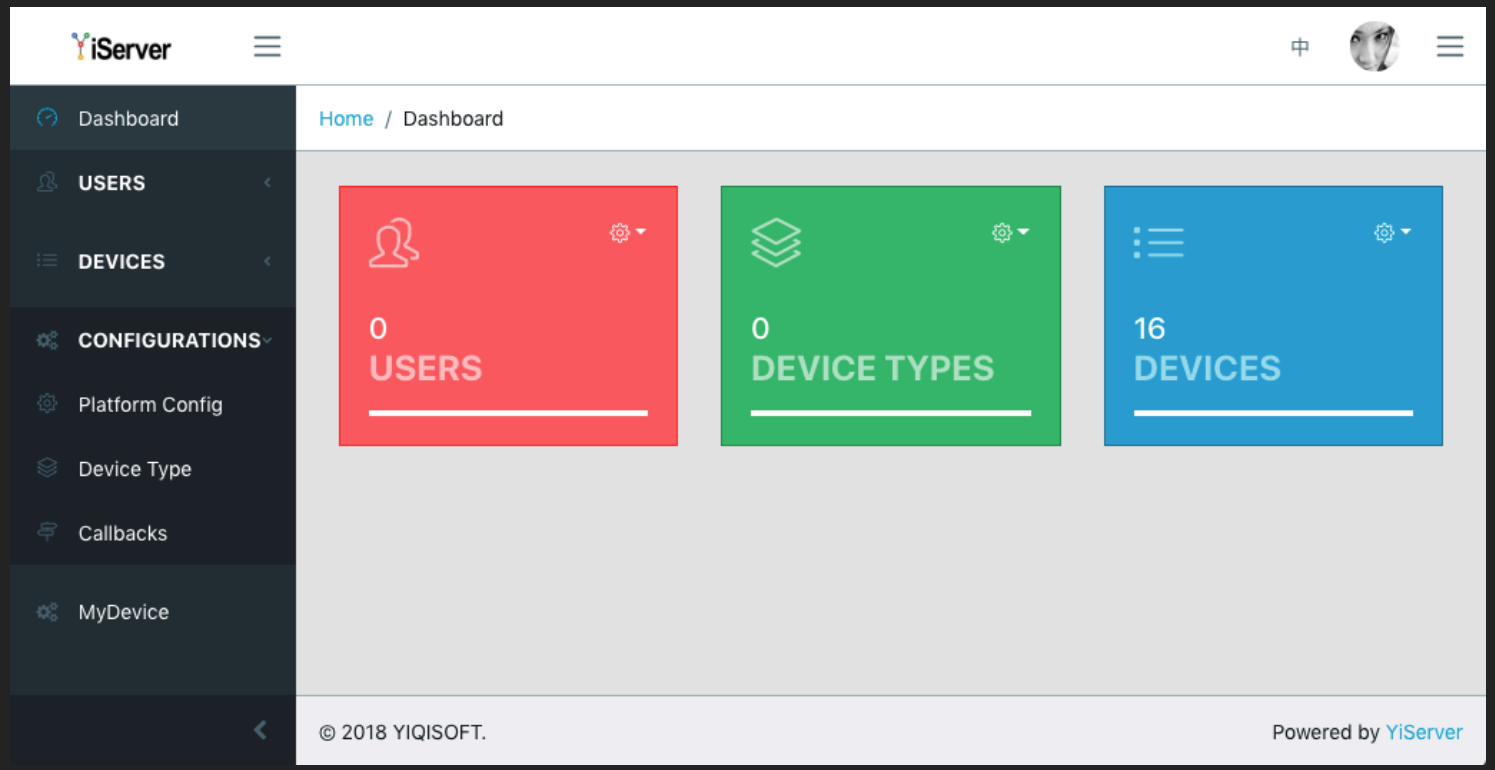


# North Application



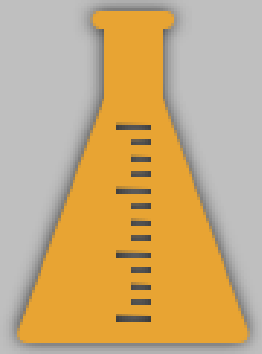
# North Application

## Manager




## User

# Development Process



**STEP 1**
Preparation

Choose Sensors
Download Firmware

**STEP 2**
Up to Cloud

Initialize the IoT Platform
Upload Profile / Plugin

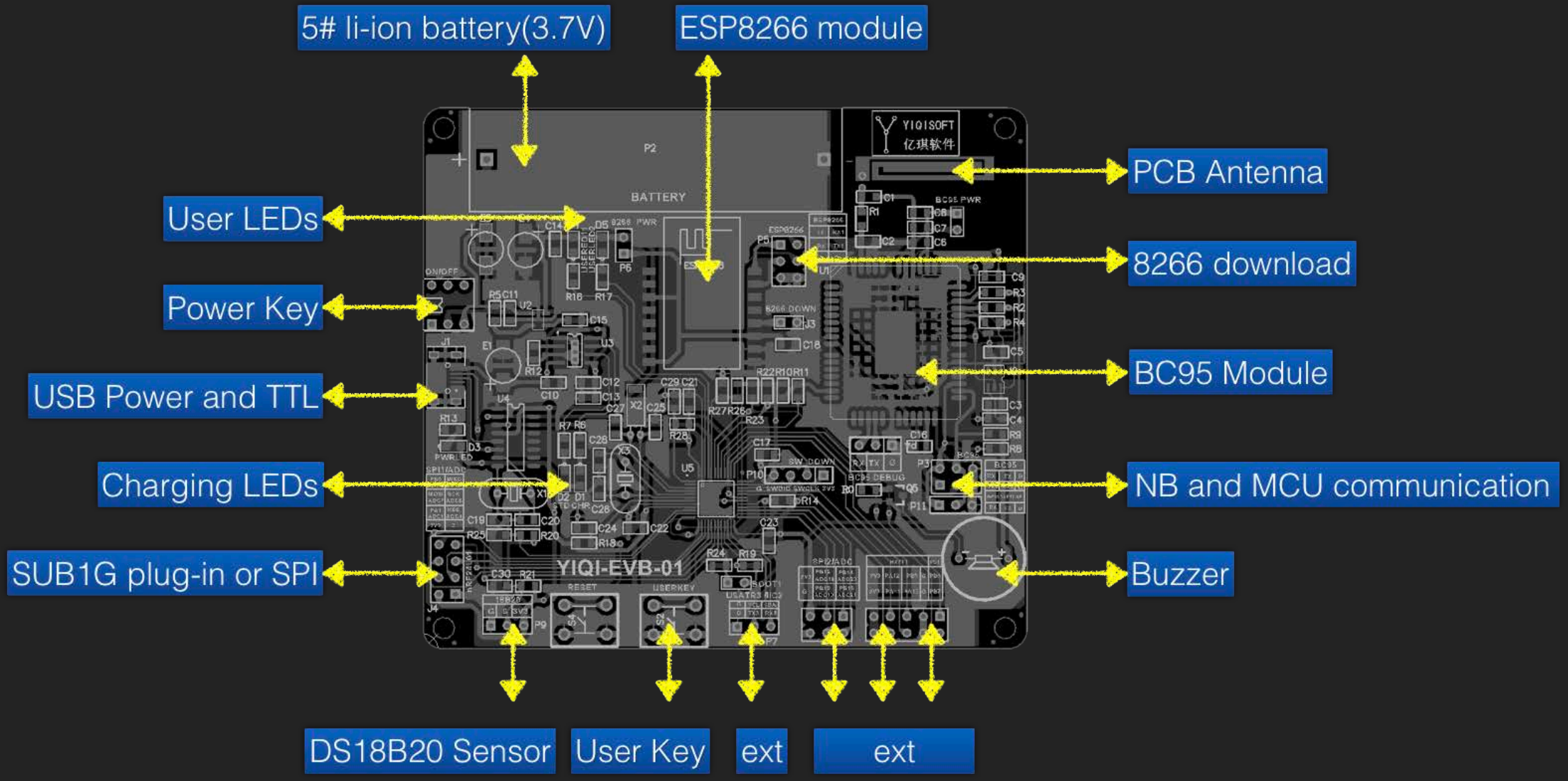
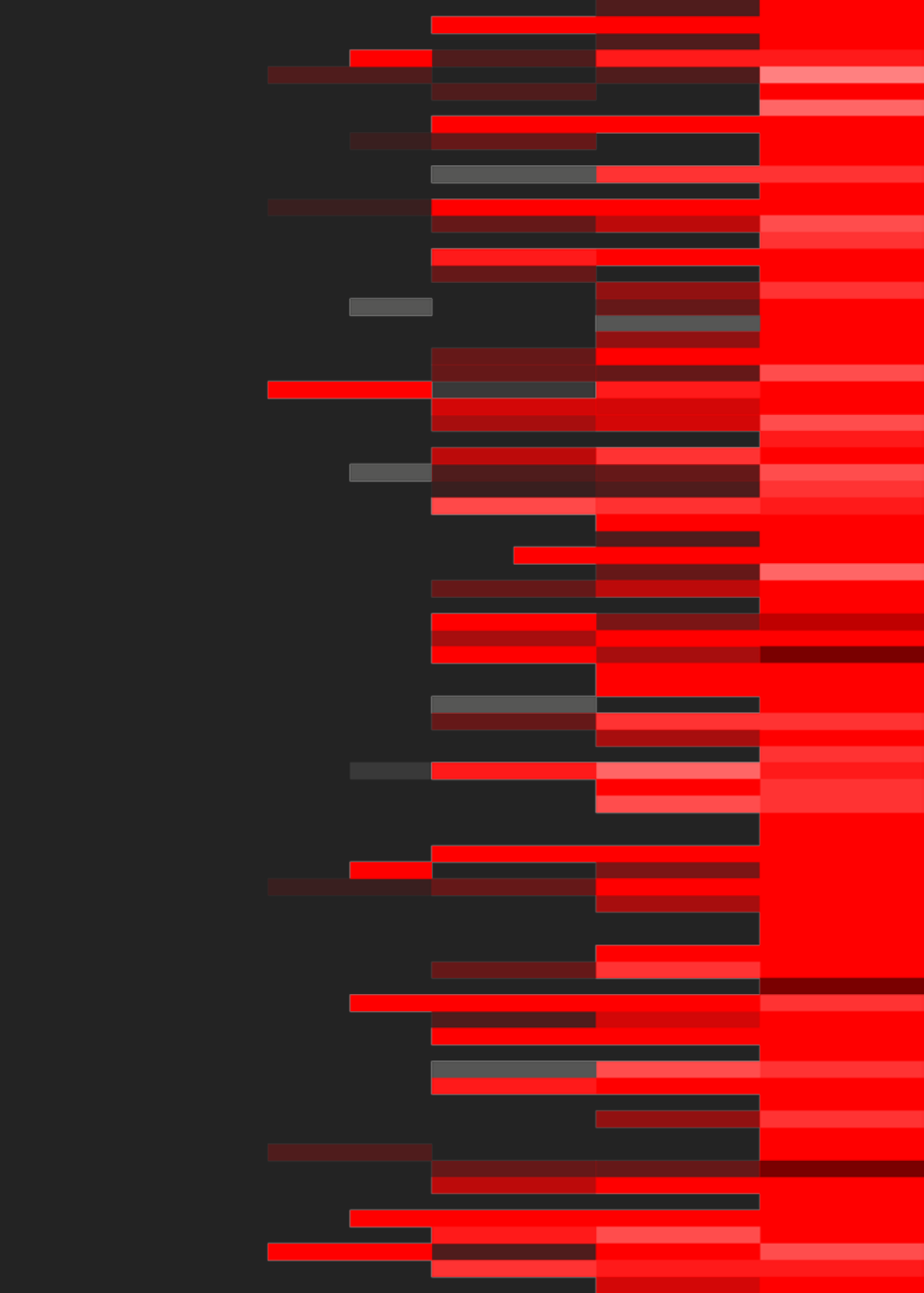
**STEP 3**
Launch

Ready for NA
System MGMT

**STEP 4**
BigData / AI

DevOps
Visualization

# YIQI-EVB-01 IoT Development Board



# Thank You