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YIQISOFT
亿琪软件

YIQI Partner Development Case

Jianqi Chu

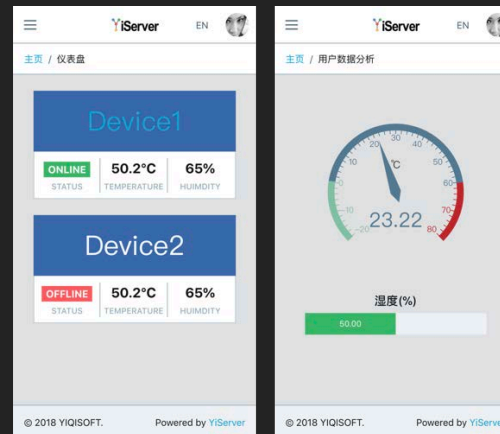
13 Jun 2018

About YIQISOFT

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



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



Profile + Plugin
Parse Business Data
Build Rules

North Application



Connect to OceanConnect
A backend application
App Management

“2 + 1 + 2” Development Action

2 Minutes

- Connect IoT Platform

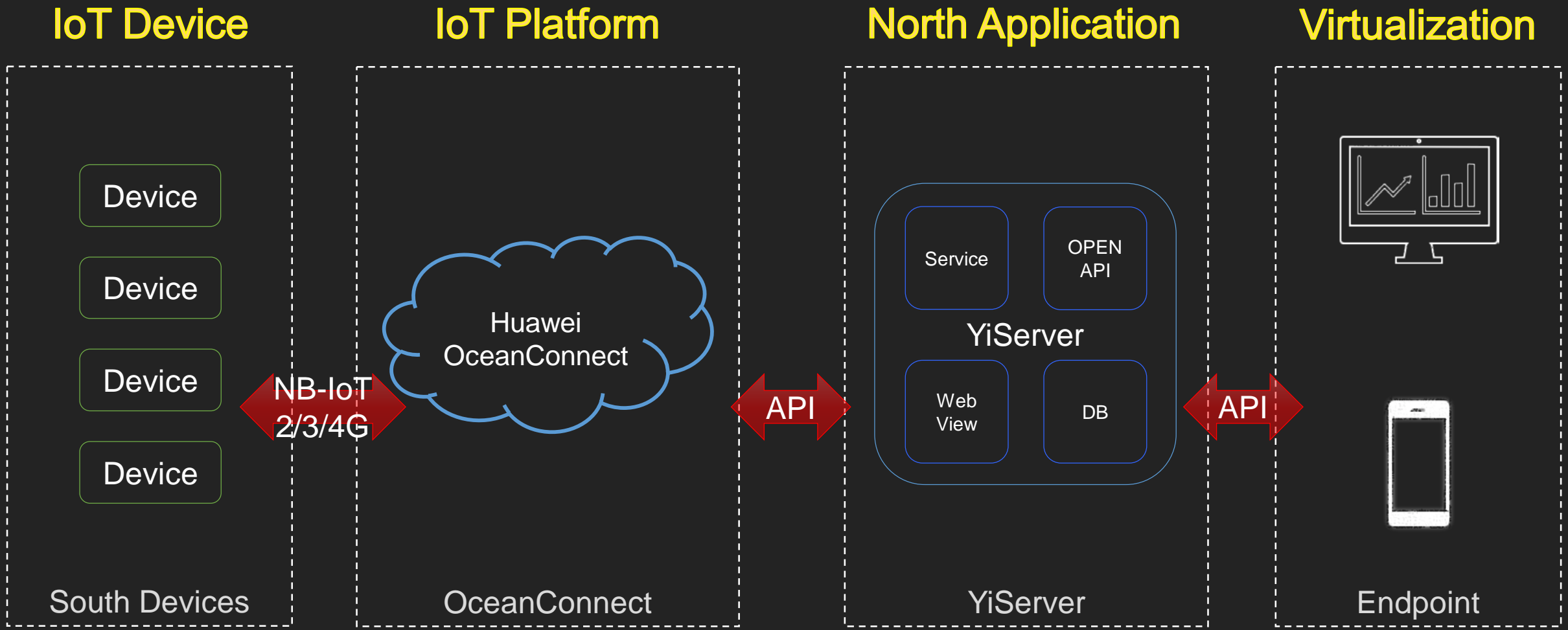
1 Day

- Develop A NB-IoT Product

2 Weeks

- Verify IoT Application

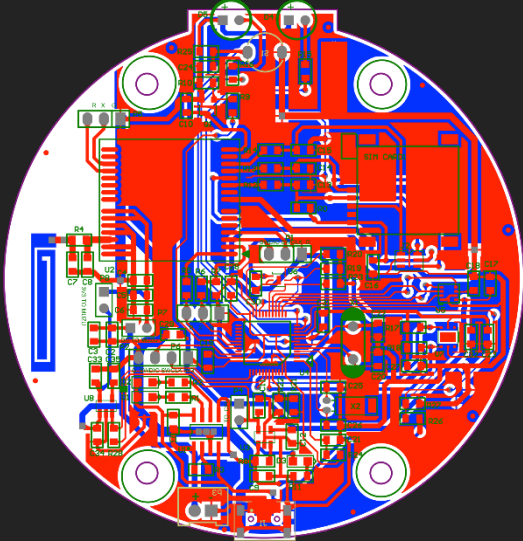
End-to-End IoT Architecture



IoT Device (Hardware Development)

MCU embedded or OpenCPU

Battery
NB-IoT
Antenna



PCB with in Sensors
Temperature
Humidity
Illumination

Sampling



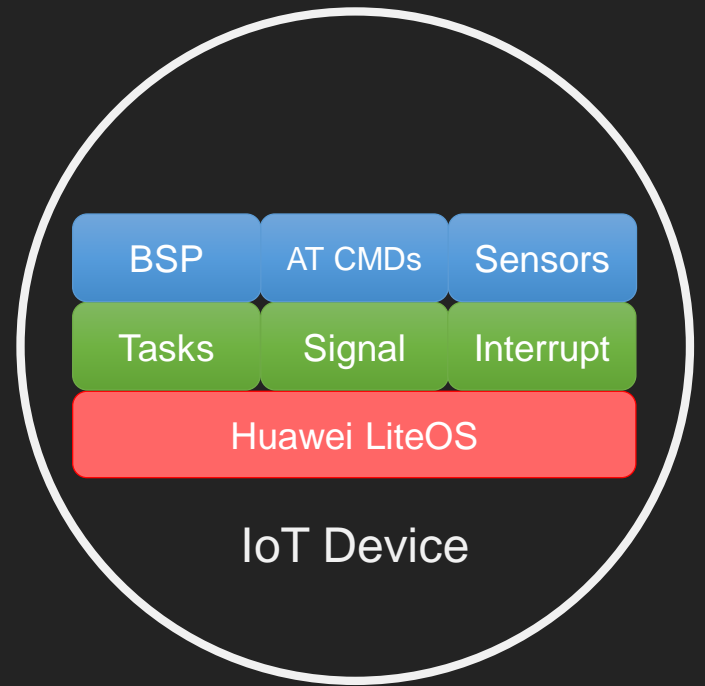
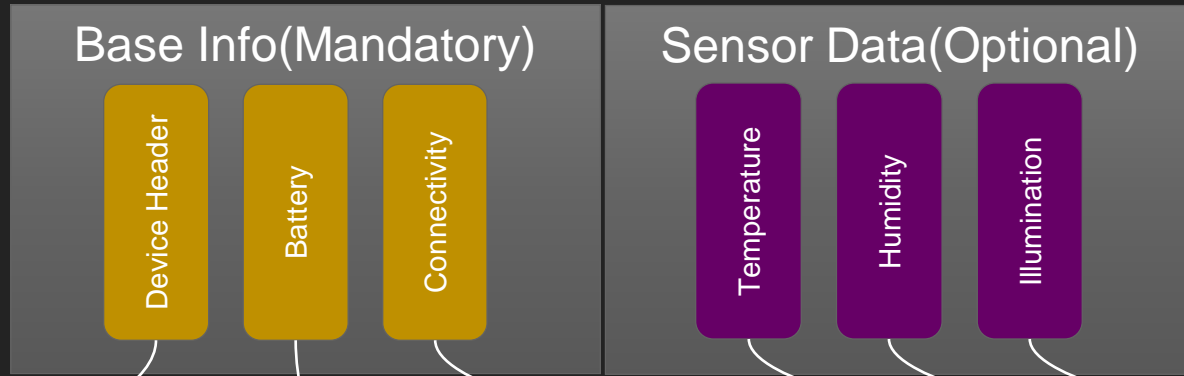
NB-IoT Module

AT Commands



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

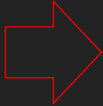
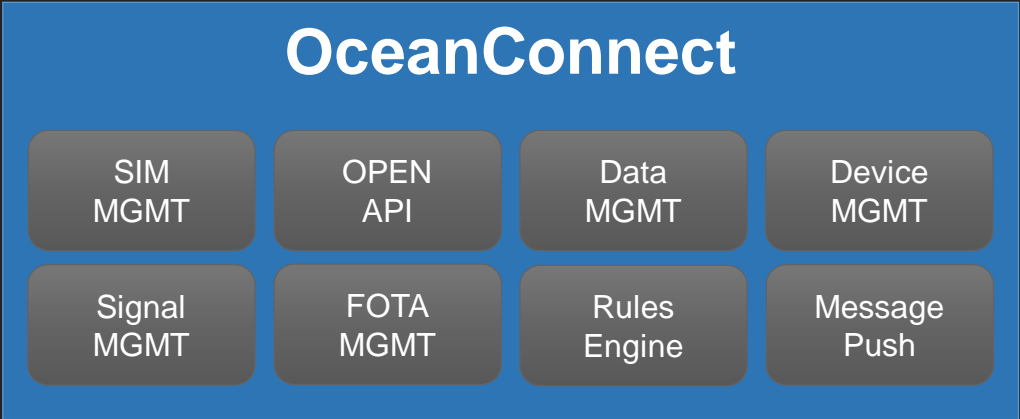
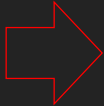
Strength	0xFFAE	-82
SNR	0x15	21
LinkQuality	0xF6	-10
ECL	0x01	1
CellID	0x0E818427	24336899
PCI	0x00A1	161
CSQ	0x13	19

Sensor Data

Temperature	0x0A14	25.80°C
Humidity	0x1985	65.33%
Illumination	0x5834	22580 Lux



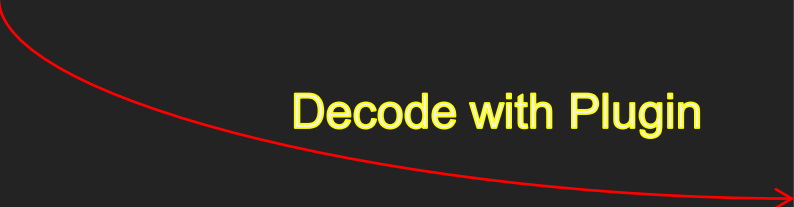
IoT Platform / OceanConnect



North Application

```
45 56 42 01 0D 55 0D F2 F  
F AE 15 F6 01 0E 81 84 27  
00 A1 13 0A 14 91 85 58 3  
4
```

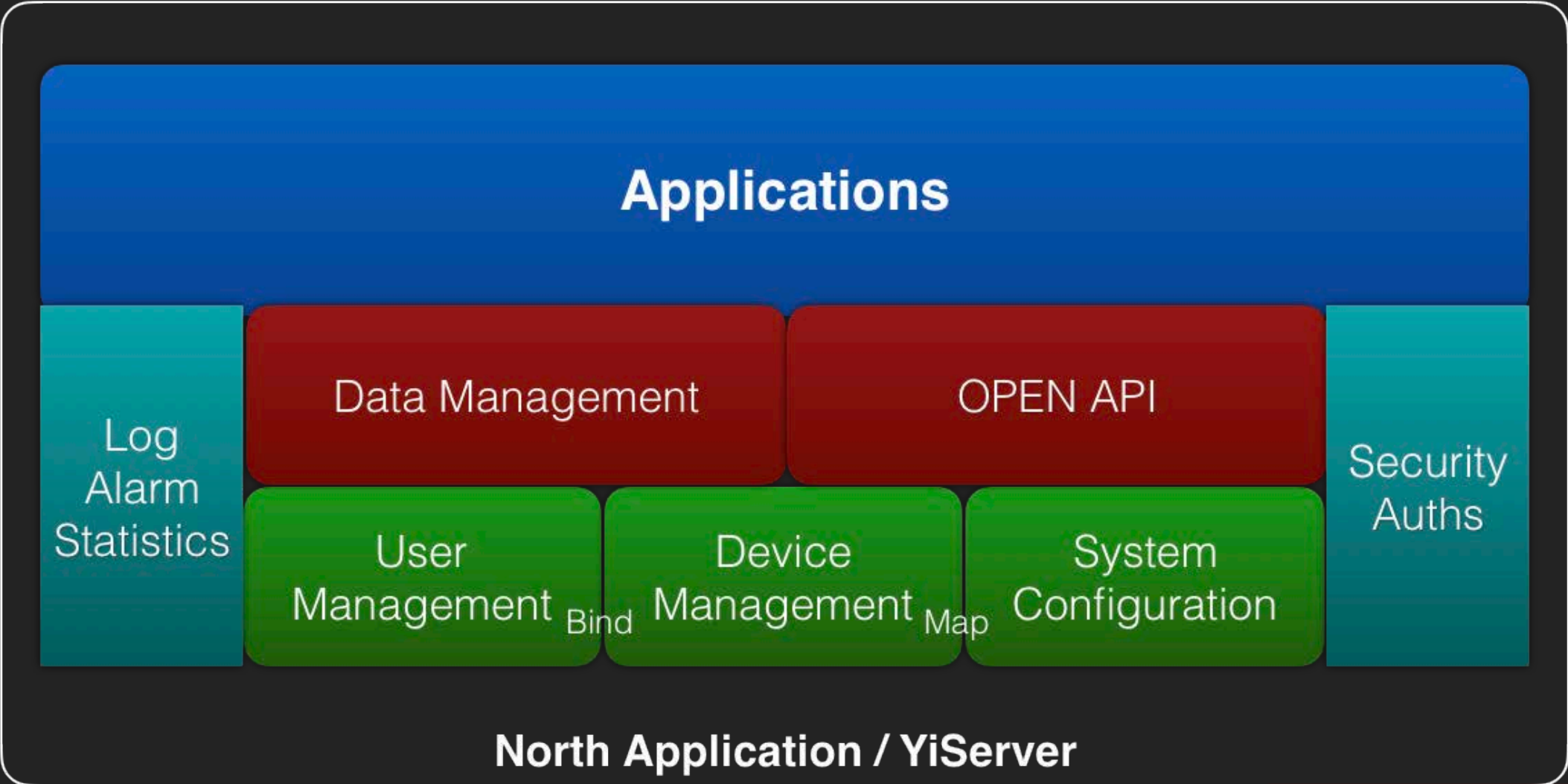
Decode with Plugin



```
Base on Profile  
Battery{  
    "batteryLevel": 85,  
    "batteryVoltage": 3570  
}  
Connectivity{  
    "CellID": 243368999,  
    "csq": 19,  
    "linkQuality": -10,  
    "signalECL": 1,  
    "signalPCI": 161,  
    "signalSNR": 21,  
    "signalStrength": -82  
}  
Data{  
    "humidity": 6533,  
    "illumination": 22580,  
    "temperature": 2580  
}
```



North Application



North Application

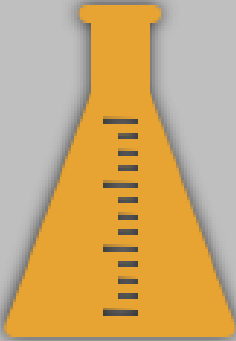
Manager

The Manager dashboard features a dark sidebar with navigation options: Dashboard, USERS, DEVICES, CONFIGURATIONS (with sub-items Platform Config, Device Type, Callbacks), and MyDevice. The main content area displays three large colored cards: a red card for '0 USERS', a green card for '0 DEVICE TYPES', and a blue card for '16 DEVICES'. Each card includes a settings icon in the top right corner. The breadcrumb 'Home / Dashboard' is visible at the top of the main area. The footer contains '© 2018 YIQISOFT.' and 'Powered by YiServer'.

User

The User interface is shown in two panels. The left panel displays a 'Dashboard' view with two device cards: 'Device1' (ONLINE, 50.2°C, 65% humidity) and 'Device2' (OFFLINE, 50.2°C, 65% humidity). The right panel shows a 'User Data Analysis' view with a large circular gauge for temperature (23.22°C) and a horizontal bar chart for humidity (50.00%). Both panels have a breadcrumb '主页 / 仪表盘' or '主页 / 用户数据分析' and a footer with '© 2018 YIQISOFT.' and 'Powered by YiServer'.

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



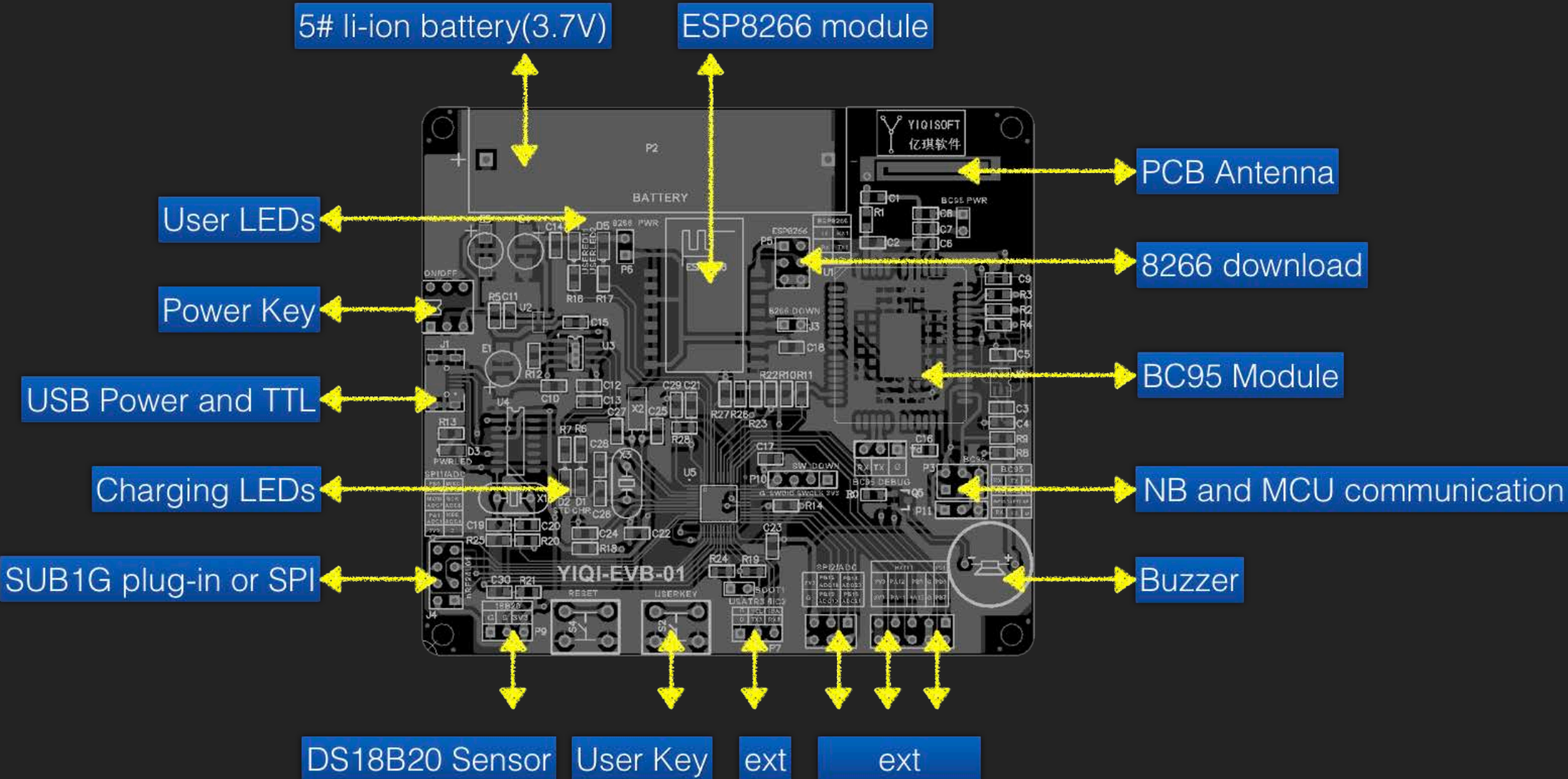
STEP 4

BigData / AI

DevOps
Visualization



YIQI-EVB-01 IoT Development Board



Thank You

