#### How to setup location system with TTN

V1.2

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#### Introduction

This document introduces how to setup a location system with RUICTEC platform and

TTN network server. You can select the nearest TTN server to reduce the delay.

#### 1. Login as administrator

Firstly, need to login RUICTEC platform as administrator.

The access address is: <u>https://location.rctiot.com</u>

Before login, you need to register with a register code which will be sent by us after you purchase the devices. Under this administrator account, you can create project for your company, or resell the devices to other companies and create projects for them. If you have an account already, login directly.

#### 2. Create customer

The customer is a company or organization which will use the location system. Operation path: User Management -> Customers -> Add

	Add Information	×
* Name:	Please enter clientname	
Tel:	Please enter telephone	
* Email:	Please enter email	0
ID:	kmn7jwy3	0
Address:	Please enter address	
Logo setting:	Please select and set logo   ~	
Project maintain:	Please select permission v	
Purchase history:	0/1024	
Remark:	0/64	
	Cancel	ОК

Name: Company name.

ID: It's a register code which can be used by the company user to register.

Device: Device scheme, such as US915, AS923. Multi types can be selected.

Logo setting: Whether the customer can change the logo.

Access rights: Whether the customer can access the platform. The user can be blocked by setting this parameter as No.

Project maintain: Whether the user can manage the project, such as create building, floor, map. If set as No, the company user will not see the interfaces, the project can only be managed by administrator.

Here we create AB company for demo, and after finished the register code will be sent to the mailbox, anybody from the company can use the code to register.

Here we suppose a user from AB company has registered an account named *userdemo*. It will be used later.

## 3. Create application in TTN

Please follow TTN operation guide to create an application for the project. <u>https://www.thethingsindustries.com/docs/integrations/adding-applications/</u> The data between TTN and RUICTEC platform is exchanged over MQTT.



Then set payload formatters.

$\leftrightarrow$ $\rightarrow$ C $\cong$ eu1.cloud.thethings.r	etwork/console/applications/myas	9232/payload-formatters/uplink
THE THINGS STACK	Soverview Applications	🚠 Gateways 🕮 Organizations
myas9232		Applications > myst9222 > Payload formatters > Uplink
Uverview		Default uplink payload formatter
L End devices		• You can use the "Payload formatter" tab of individual end devices to test uplink payload formatters and to define individual payload formatter settings per end device.
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For the detailed scripts, please refer to another document "RCT\_Tracker\_Data\_Parse".

#### 4. Create Project

Come back to RUICTEC platform, create a project for AB company. Project type only determine the building icon. For the MQTT broker info, please refer to <u>step 3</u>. Please select correct time zone, then in any other time related item, you can select your local time directly rather than UTC time.

Operation path: Project Management -> Add.

	Add Project Information	>
* Project:	Metropolitan Museum of Art	
* Company:	AB Company v	
* Scheme:	US915_BAND2 v	
* Location type:	Beacon Fixed $\lor$	
* Project type:	Other $\lor$	
* Time zone:	UTC-08:00 🗸 🚱	
Forward:	No 🗸 🚱	
Network server:	TTN ~	
* MQTT Broker:	eu1.cloud.thethings.network:1883	?
* User:	myas9232@ttn	
* Password:	Please input the API Key described in TTN.	
Remark:	0/64	
	1	

## 5. Assign devices

Assign the trackers and beacons to the project.

Operation path: Device Management -> Tracker -> Batch operate -> Assign. Before the operation, need to select the devices. In this project, we assign three trackers and six beacons to the project.

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#### 6. Enter project

In project management, select the project then click "Enter project". If only GPS needed, skip this step.

#### 6.1 Add map

Create a 2D map, if don't know the actual width and length of the map, you can click "Map out" to select two points which you know the distance, after you mark the distance, the system will calculate the size of the map automatically.

After complete, click "Ok" to save the map as draft, click "Submit" to send for review. Before approved the status is "audit", after approved the status is "pass".

In this project, we create two maps.

	Add Map Information	×
	+	
	Upload jpg/png/jpeg/svg files, no more than 2MB	
* Map name:	floor1	
Actual width:	235 Map out	0
Actual length:	314	0
Sensitivity:	5	0
Activity:	0.5	0
Project:	Metropolitan Museum of Art $\sim$	
Remark:	0/6-	4
		_li
	Cancel OK Sut	brnit

#### 6.2 Create building

We create one building in this project.

A

Drag the map to the position where the project located, and zoom the map to a proper size, then select the icon from the right panel and click on the map to deploy. It will be saved automatically.



#### 6.3 Create floor

After creating the building, you need to create floors for the building. Multiple floors can be mapped to the same map. You can only select the maps that have been reviewed and approved.

	Building Information	×
* Building:	Metropolitan v	
Floor:	1	0
Map name:	floor1 ~	
Remark:	The first floor of metropolitan. 32/64	
	Cancel	ĸ

#### 6.4 Deploy beacons



After creating floor, you can deploy beacons on the map by clicking "Deploy".

The available beacons are listed in the right panel, select the beacon and click on the map to deploy. We deploy three beacons on this map.

If you want to see the trajectory of the device, need to set the beacon adjacency. Click "Add Connection Point" button to add five connection points, then click "End setting" to finish. Three points are located in the rooms and two points are located on the doors.



Now, begin to set adjacency relationship:

1.Select the beacon or connection point with the left mouse button.

2.Press and hold the shift key, and left click to select the beacon or connection point connected to it.

3. Click "Set adjacency" button to set the adjacency relationship.

The connection should be like the following picture:



Finally, you need to drag the connection point to the beacon.



All the operation mentioned above will be save automatically.

Right click the beacon or connection point can dissolve the adjacency relationship. We also deploy three beacons on the second floor.



# 7. Add devices in TTN

https://www.thethingsindustries.com/docs/devices/adding-devices/

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Overview				From The LoRa	WAN Device Reposito	ry Manually					
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	8c1f643e8a010002	disabled	Three-point	Yes	8c1f643e8affffff	5fe531e2c518a	5fad4d9ce8ec91	1196559113e9d	02df085d7b917	Info	Yes
	8c1f643e8a0f0001	disabled	Three-point	Yes	8c1f643e8affffff	351f739b40a6a	8300871d59366	a3395dce1cf06f	29295e1862c7b	Info	Yes

# 8. Add gateway in TTN

Finally you need to set your Lora Gateway as packet forward mode, and add the gateway

to TTN: https://www.thethingsindustries.com/docs/gateways/adding-gateways/

If you have any other questions, please contact us.

#### 9. Login as company user

At this point, all the work about the administrator is done, now enter the platform as an enterprise user "userdemo".



# 10. Add employee

In this step, we'll create some employees and bind the devices to them. Path: Personnel -> Employee -> Add

	+	
* Name:	Jim	
Employee no.:		
Age:	27	
Yousea and we	ork type in advance.	
Youseca and we Department:	ork type in advance.	
Youseca and we Department: Typeofwork:	ork type in advance. Please choose ∨ Please choose ∨	
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After binding you'll see a people in the building or outside.

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Cancel



If you have any other questions, please contact us or visit our online help system: <u>https://location.rctiot.com:8078</u>

# The End