BlueMesh Commissioning

Quick start guide for iOS/iPadOS

2024	BMN-204 rev. 4.3

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1. Introduction

BlueMesh Commissioning is a set of tools used to commission and manage commercial lighting installations based on qualified Bluetooth mesh technology. The commissioning consists of three stages:

1. Planning (with an account created in the BlueMesh web app before anything is built on site)
2. Implementation on site (with the BlueMesh mobile app for iOS/iPadOS)
3. Verification (with the BlueMesh mobile app for iOS/iPadOS and the BlueMesh web app)

This guide shows you how to commission a lighting system.

Planning	BlueMesh web app
	1. Design a lighting control plan based on the expected light behavior in each part of your lighting installation. 2. Create an account in the BlueMesh web app. 3. Create a project. 4. Add collaborators who will be helping you with the commissioning. 5. Create areas and upload floor or site plan images. 6. Create zones and set up light control profiles. The configuration will be stored in the cloud.
Implementation	BlueMesh mobile app for iOS/iPadOS
	7. Go on site, add luminaires and sensors to the zones, and test the lighting control. The configuration previously created in the BlueMesh web app is automatically sent to these devices. 8. Assign switches to the zones. 9. Calibrate any ambient light sensors.
Verification	BlueMesh mobile app for iOS/iPadOS, BlueMesh web app
	10. Make sure that there are no errors in the areas. 11. Test the quality of the mesh network. 12. Analyze the commissioning report.

To use more advanced features not included in this guide, see these documents:

- Zone linking: *BMN-200 BlueMesh Commissioning user manual*.
- Scheduling: *BMN-201 BlueMesh Scheduling*.
- Emergency lighting testing: *BMN-214 BlueMesh Emergency Lighting Testing*.
- Occupancy monitoring: *BMN-218 BlueMesh Occupancy Monitoring*.
- Energy monitoring: *BMN-222 BlueMesh Energy Monitoring*.

To troubleshoot issues that may have occurred during commissioning, see the *BMN-223 BlueMesh Commissioning troubleshooting guide*.

2. Planning

2.1 Preparing

1. Design a lighting control plan based on the required light behavior in each part of your lighting installation.

   > ℹ️ Take into account the properties of radio communication. Think about how you will group your luminaires, sensors, and switches into areas and zones.

2. Create a BlueMesh account in the BlueMesh web app.
3. See the *BMN-211 BlueMesh Lighting Control application note*.
4. If your project meets at least one of the following criteria, see *BMN-213 Recommendations for complex lighting installations*:
   - Has more than approximately 200 devices.
   - At least some devices are placed along a straight line.
   - Distances between devices are large.
   - Uses a *daylight harvesting* scenario.

2.2 Creating an account in the BlueMesh web app

1. Go to the BlueMesh web app.
2. On the **Sign up** tab, enter your company name, full name, and email address, choose a password, and select the checkbox.
3. Click the **Sign up** button.
4. Check your inbox (and spam folder) for the activation link and click on it to activate your account.
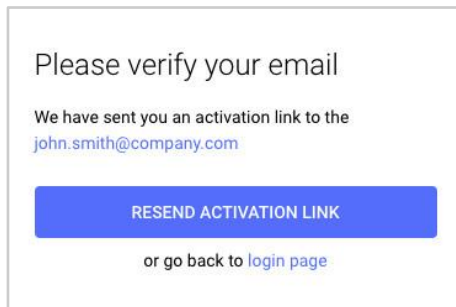
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2.3 Creating a project

ℹ️ A project is a separate lighting installation created in the BlueMesh Commissioning tool. It can be as large as a whole building or site, or as small as a single room. Each project is a single Bluetooth mesh network that is separated from other such networks. A project can consist of multiple areas.

1. Log in to the BlueMesh web app
2. Click **+** to create a project.

3. Enter a name for the project, select the correct time zone, and click **Create**.

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2.4 Adding collaborators

i To speed up the work, you can share your project with others so they can participate in the commissioning.

1. Open the project and click **Collaborators**.
2. Click **+** and enter the email addresses to invite to commissioning.

    i Collaborators can be given the role of Owner, Manager, Installer, or End User. For more information about user roles, see the *BMN-200 BlueMesh Commissioning user manual*.

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2.5 Creating areas and uploading floor or site plan images

ℹ️ A project can be divided into areas for better clarity and easier navigation. Typically, an area is a floor, but it can also be a part of a big floor, or even a part of a building, such as a parking lot. All devices in an area must be in range of the Bluetooth mesh network and each area must be connected to other areas. Areas can include a floor or site plan to help the user navigate the project.

ℹ️ If an area is separated from other areas in the project and cannot communicate with them, it should be set up as a separate project.

1. Open the project.
2. Click **+** to create an area.
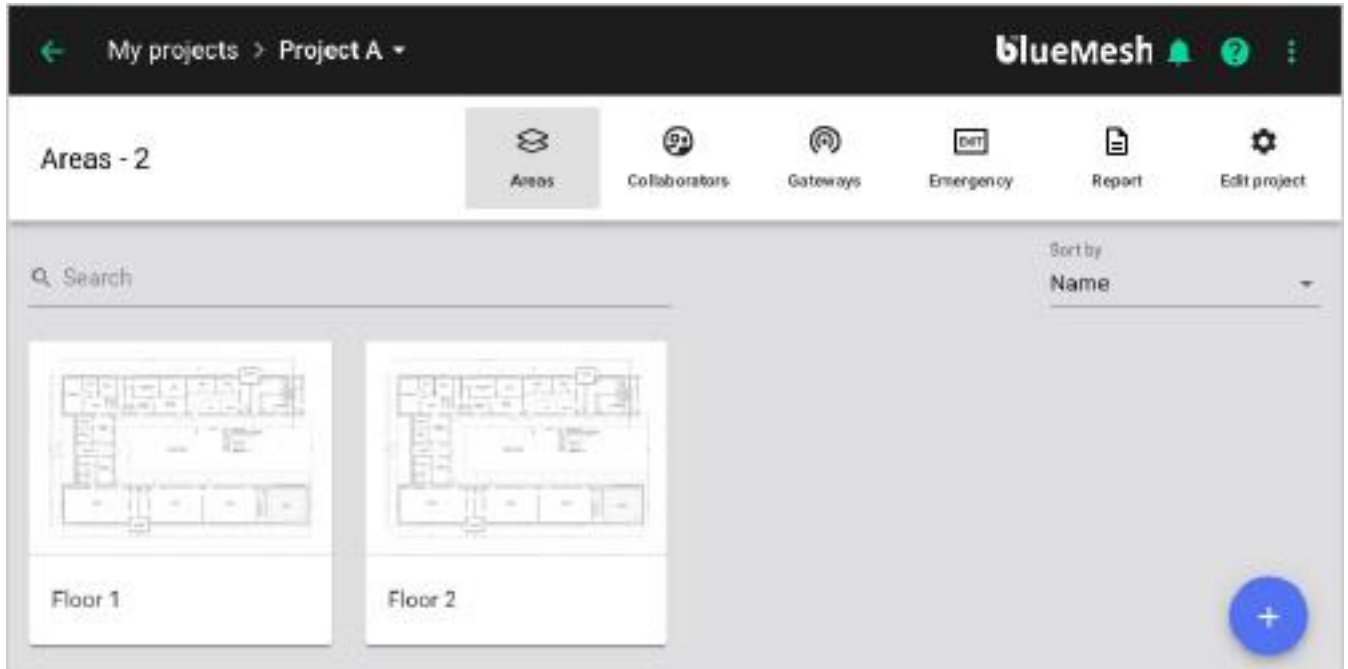
3. Enter a name for the area.
4. Click ⬆ and open a JPEG, PNG, or PDF file with a floor or site plan image.

   ℹ️ The image will help you put the zones in the correct place during commissioning.

5. Click **Create**.
6. Repeat steps 2–5 to create more areas and upload a floor or site plan image to each area.

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## 2.6 Creating zones and setting up control profiles

ℹ An area consists of zones that contain devices (luminaires, sensors, and switches) that have been commissioned using the BlueMesh mobile app. A zone can be a whole room or a part of it, or a separate space. All devices in the zone operate according to the control profile set up for the zone.

1. Open an area.
2. Click on the floor or site plan to add a zone. To move the zone, drag it to where you want it.
3. Enter a name for the zone. Each change is saved automatically.
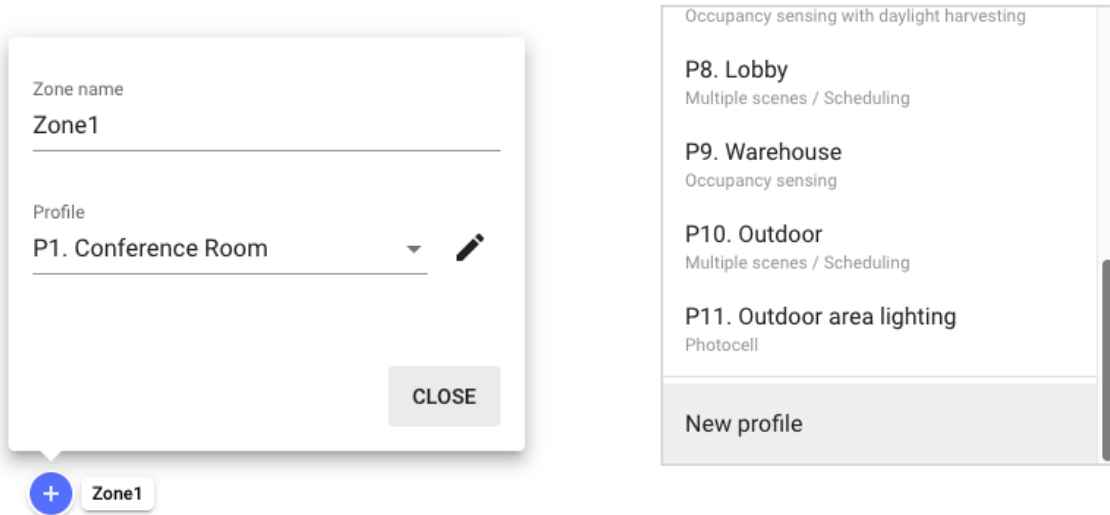
4. Select a control profile from the list of default profiles, or create a new profile.

    ℹ A control profile is a scenario with settings used to control a zone. A scenario defines how the light behaves in the zone. If you set a different scenario for a profile, different settings may be available.

5. Click ✎ to edit the parameters of the profile.
6. Repeat steps 2–5 to create more zones in this area and assign a control profile to each zone.

    ℹ At any time, you can change the zone position, name, or profile, add or delete zones, or change the floor or site plan image.

    ℹ For more information about control profiles and scenarios, see the _BMN-200 BlueMesh Commissioning user manual_ and _BMN-211 BlueMesh Lighting Control_.

7. Go to the remaining areas and repeat steps 2–6 to create zones and assign a control profile to each zone.

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3. Implementation

3.1 Preparing

1. Make sure that all devices are correctly installed and powered on in your building or site, and that they support qualified Bluetooth mesh technology.
2. Install the BlueMesh mobile app on your iOS mobile device.
3. Make sure that your mobile device is connected to the internet when you are on site.
4. Make sure that Bluetooth on your mobile device is turned on.
5. If any of the zones use a control profile with a *daylight harvesting* scenario, bring a light meter.
6. If you want to control a zone manually, install a Bluetooth EnOcean switch in the zone.

> ℹ️ Keep the QR code of the EnOcean switch in a safe place. You will need the code if you want to assign the switch to a different device.

3.2 Commissioning the project

3.2.1 Adding devices to the zones

1. Go on site where the devices are installed.
2. Log in to the BlueMesh mobile app for iOS/iPadOS and go to the project and area.
3. Go to the zone where you want to add devices.
4. Move as close as possible to the devices and tap **+**.

> ℹ️ A list of devices will appear.

> ℹ️ If you want to see only the nearest devices, move the slider to the left.

> ℹ️ If the device you want to add does not appear, it may have been added to a different zone or project, or it could be damaged.

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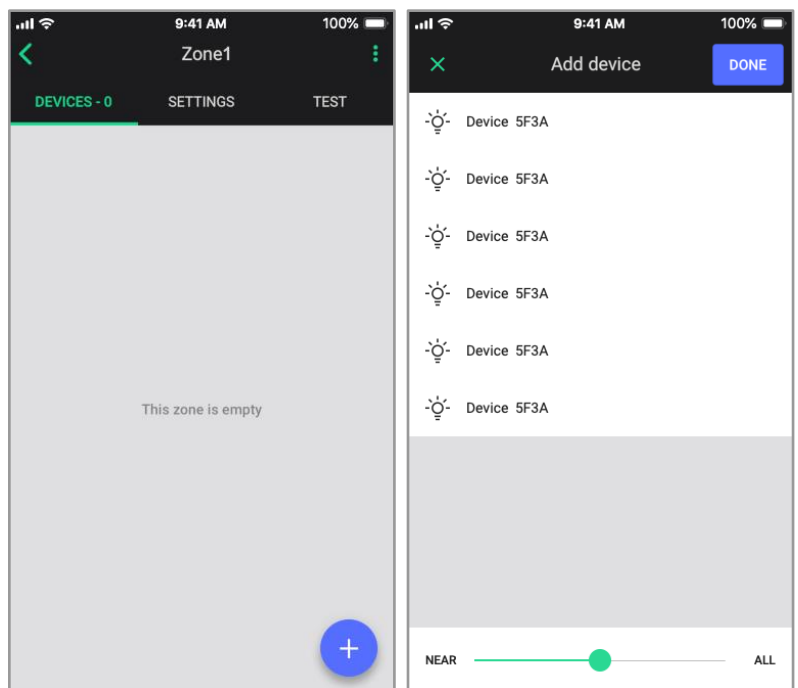
5. Tap a device to add it to the zone. The device will identify itself by flashing. If this is the correct device, tap **Add**.

> ℹ️ If you want to add this device to a different zone, tap **Add this device to another zone**, and then tap the correct zone on the floor or site plan.

> **Device 5F3A**
>
> The device is flashing. Do you want to add it to the Zone1?
>
> CANCEL   ADD
>
> Add this device to another zone

6. Add the remaining devices to the zone.
7. Tap **Done**.
8. If a red sign ⊘ appears next to a device name and refers to configuration, tap **Repair** to configure the device or tap **Configure all** to configure all devices that require configuration in this zone.
9. Go to the **Test** tab and tap ⊹ to make sure that all devices in the zone flash.

> ℹ️ For more information about testing the zones, see the *BMN-200 BlueMesh Commissioning user manual*.

10. Repeat steps 3–9 to add devices to the remaining zones in this area.
11. Go to the remaining areas and repeat steps 3–10 to add devices to zones.

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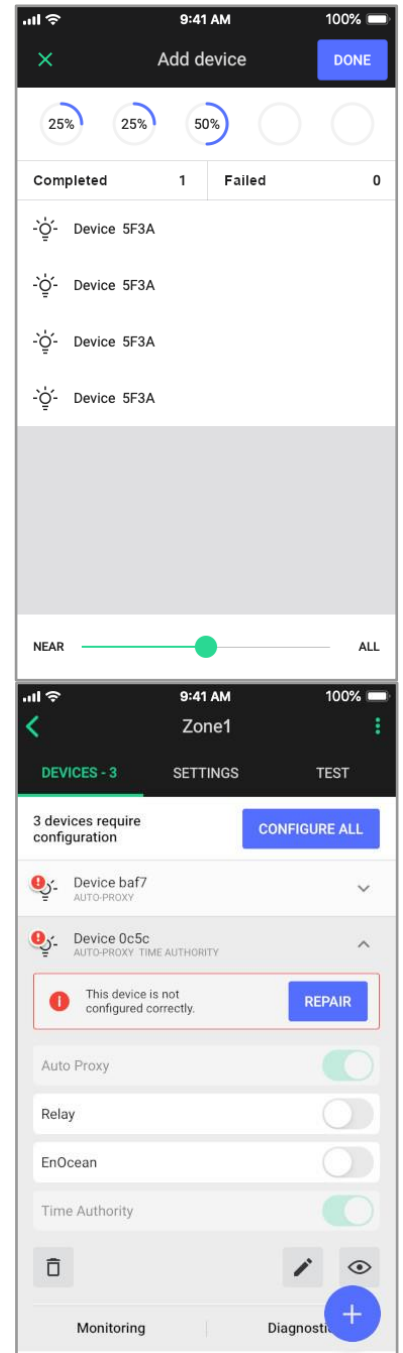
3.2.2 Assigning EnOcean switches to the zones

If you want to control the light in a zone with an EnOcean switch, perform these steps:

1. Make sure that a Bluetooth EnOcean switch is installed in the zone.
2. Select a device to act as an EnOcean adapter. This device must be close enough to the EnOcean switch.
3. Go to the zone and on the **Devices** tab, tap the device you have selected.

   > ℹ️ To find the device, tap 💡 next to a device name to make sure that the correct device flashes.

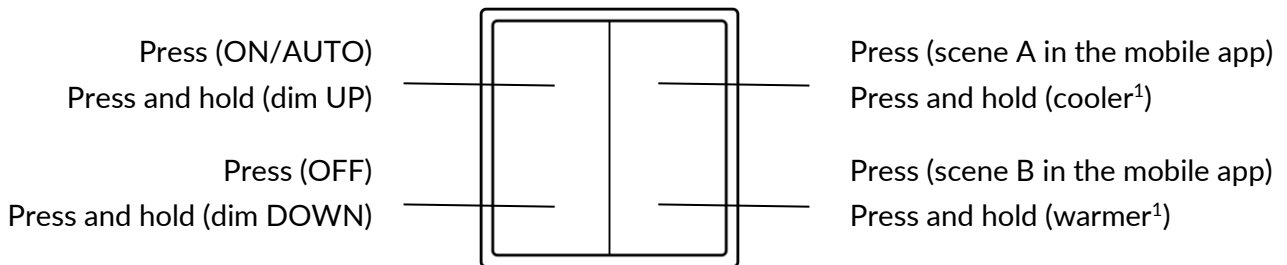4. Tap the **EnOcean** toggle switch to set this device as an EnOcean adapter.

   > ℹ️ Make sure that this device is not also set up to act as a *static proxy* or a *relay*.

5. If the app asks for permission to access the camera, tap **OK**.
6. Point the camera at the QR code on the back of the EnOcean switch or on its packaging. The app will read the code and configure the connection.
7. Use the buttons of the EnOcean switch to make sure that all devices in the zone respond as intended.
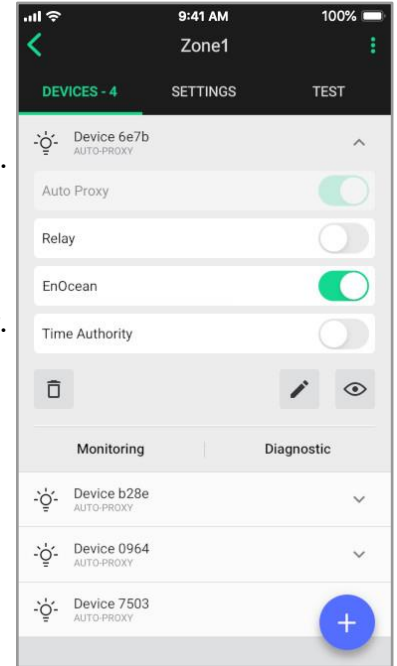
> ℹ️ The left button is used for manual control (ON/AUTO / OFF) and dimming (dim UP/DOWN). The right button (if available) is used to recall scenes (scene A, scene B; if configured) and control color temperature (cooler/warmer).

Press (ON/AUTO)	Press (scene A in the mobile app)
Press and hold (dim UP)	Press and hold (cooler[1])
Press (OFF)	Press (scene B in the mobile app)
Press and hold (dim DOWN)	Press and hold (warmer[1])

8. Repeat steps 1–7 for all zones that you want to control with an EnOcean switch.

> ℹ️ For more information about the EnOcean switch, see *BMN-203 EnOcean switch*.

> ℹ️ For information about how to set up and trigger scenes with the EnOcean switch, see the *BMN-200 BlueMesh Commissioning user manual*.

> ℹ️ For information about mesh network best practices, see *BMN-202 Optimizing mesh network performance*.

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[1] Only for zones with compatible tunable white fixtures and BlueMesh firmware version 1.35 or later. Otherwise, the *press and hold* action of the right button will not work.

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3.2.3 Calibrating the light sensors

If the zone uses a *daylight harvesting* or a *photocell* scenario, perform these steps:

1. Go to the zone and on the **Devices** or **Settings** tab, tap **Calibrate**.
2. Select the correct sensor for the zone. To find the sensor, tap ⚲ next to a sensor name to make sure that the correct sensor flashes.

Daylight harvesting	Photocell
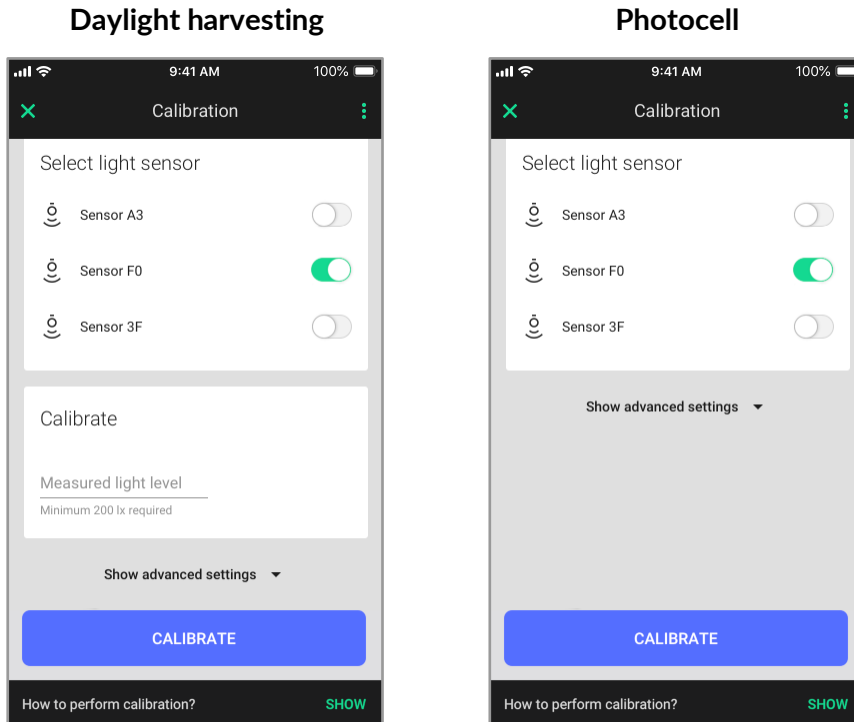
3. For a *daylight harvesting* scenario:
   a. Put a light meter vertically below the sensor onto the surface where you want to maintain the required light level.
   b. Read the value shown on the light meter in lux (lx) and enter it into the **Measured light level** field.

   ℹ️ Make sure that the measured light level is at least the minimum specified below the **Measured light level** field.

   ℹ️ If the required minimum light level cannot be achieved, because for example you must calibrate at night, see *BMN-209 BlueMesh Daylight Harvesting*.

4. Tap **Calibrate**.
5. For all zones with a *daylight harvesting* scenario, repeat steps 1–4. For all zones with a *photocell* scenario, repeat steps 1, 2, and 4.
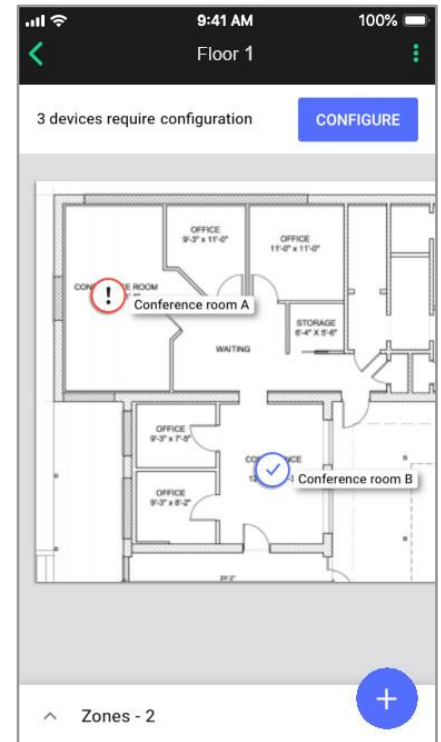
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4. Verification

4.1 Making sure that there are no errors in the areas

1. In the **BlueMesh mobile app for iOS/iPadOS**, go to an area and make sure that a blue checkmark appears for each zone.

   ✓   All devices in the zone have been commissioned.

   ⊙   There are some issues in the zone.

2. If a **Configure** button appears, tap it to configure all devices that require configuration in this area.
3. If there are issues related to calibration, go to each such zone, tap **Calibrate** and continue as described in [Calibrating the light sensors](#).
4. Repeat steps 1–3 for the remaining areas.

4.2 Testing the quality of the mesh network

1. Go on site to an area.
2. In the **BlueMesh mobile app for iOS/iPadOS**, go to the project.
3. In the area field, tap ⋮ > **Mesh quality > Start test**.
4. If some zones are marked red after the test has been completed, see [BMN-202 Optimizing mesh network performance](#).
5. Repeat steps 1–4 for the remaining areas.
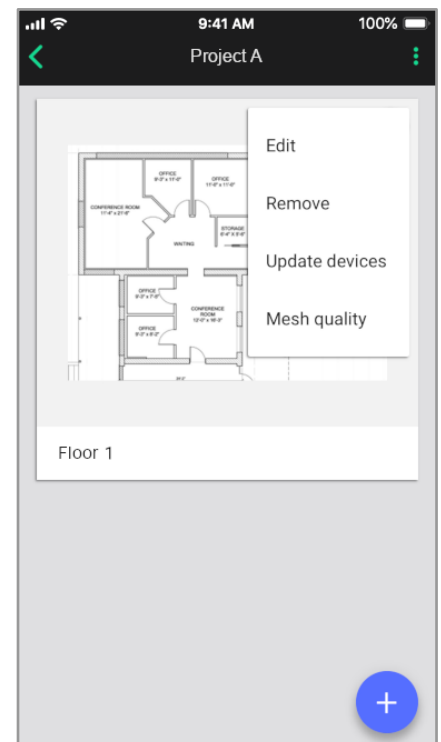
4.3 Analyzing the commissioning report

1. In the BlueMesh web app, open the project and click **Report > Download**.

Areas	Collaborators	Gateways	Energy use	Emergency	Report	Edit project
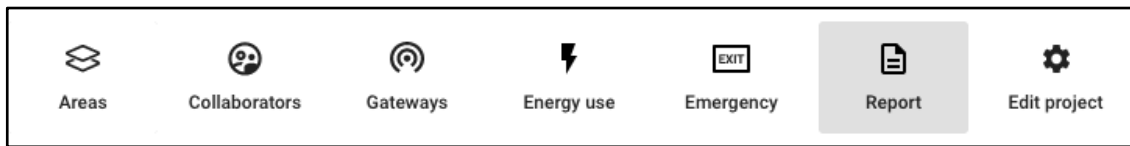
2. Analyze the report to make sure that everything is set up correctly.

ℹ The commissioning of your lighting system is now complete. The devices in all zones will behave as configured in the BlueMesh web app.

ℹ The commissioning report includes details about the project, areas, zones, devices, control profiles, zone linking, scheduling, energy monitoring, gateways, mesh quality, and collaborators. For more information about the report, see the *BMN-200 BlueMesh Commissioning user manual*.

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5. Document revisions

Revision	Date	Editor	Changes
4.3	11 April 2024	GM	Added the Creating an account in the BlueMesh web app section. Revised the content.

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