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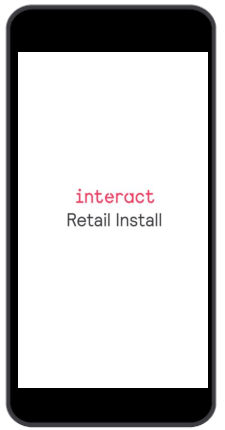
Onsite installation, commissioning and validation

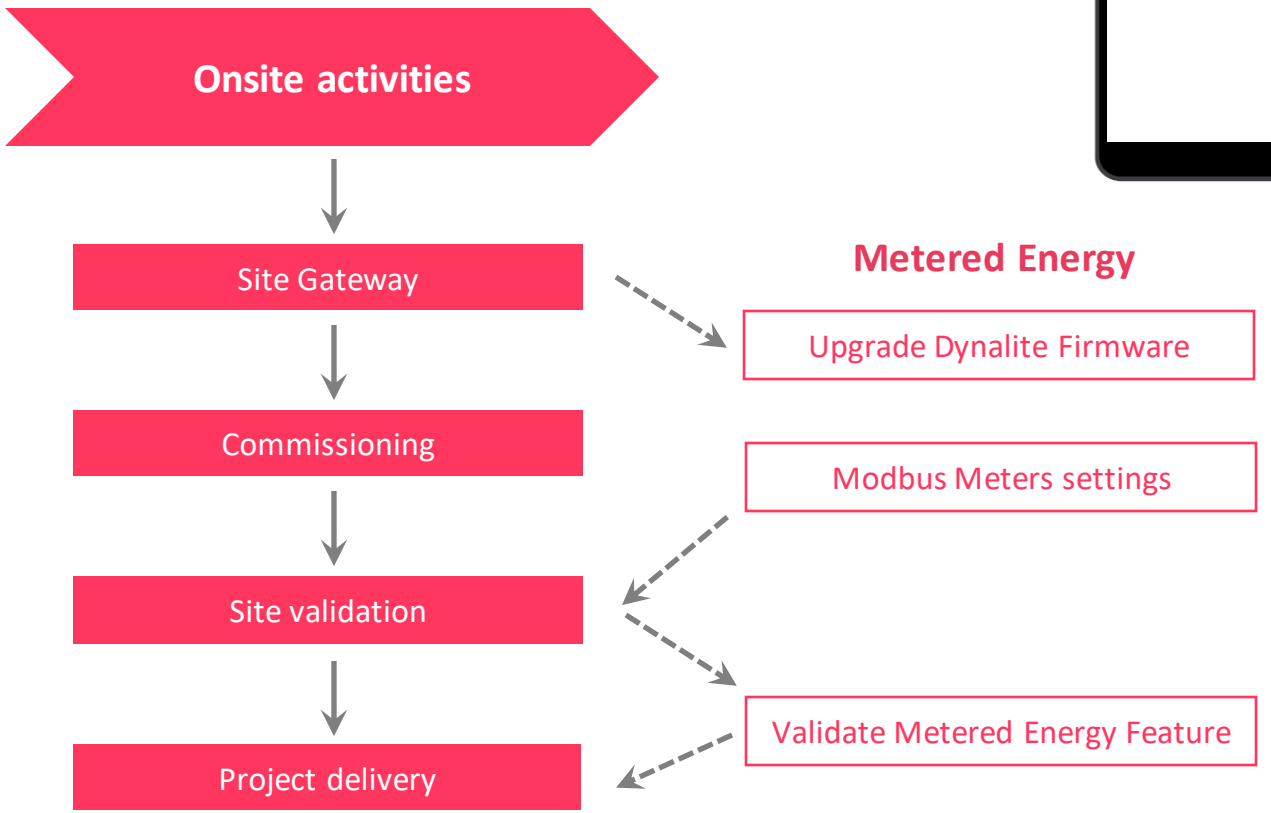
Architecture FLX - Multisite

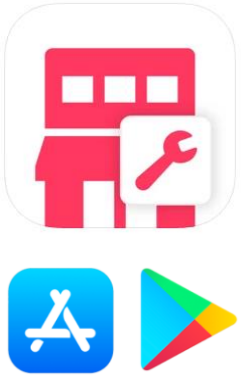
Learning objectives | Onsite installation, commissioning and validation



At the end of this lesson, you should be able to:

- Describe the steps required for the on-site commissioning and validation process.
- Be familiarized with the tools needed for online commissioning.





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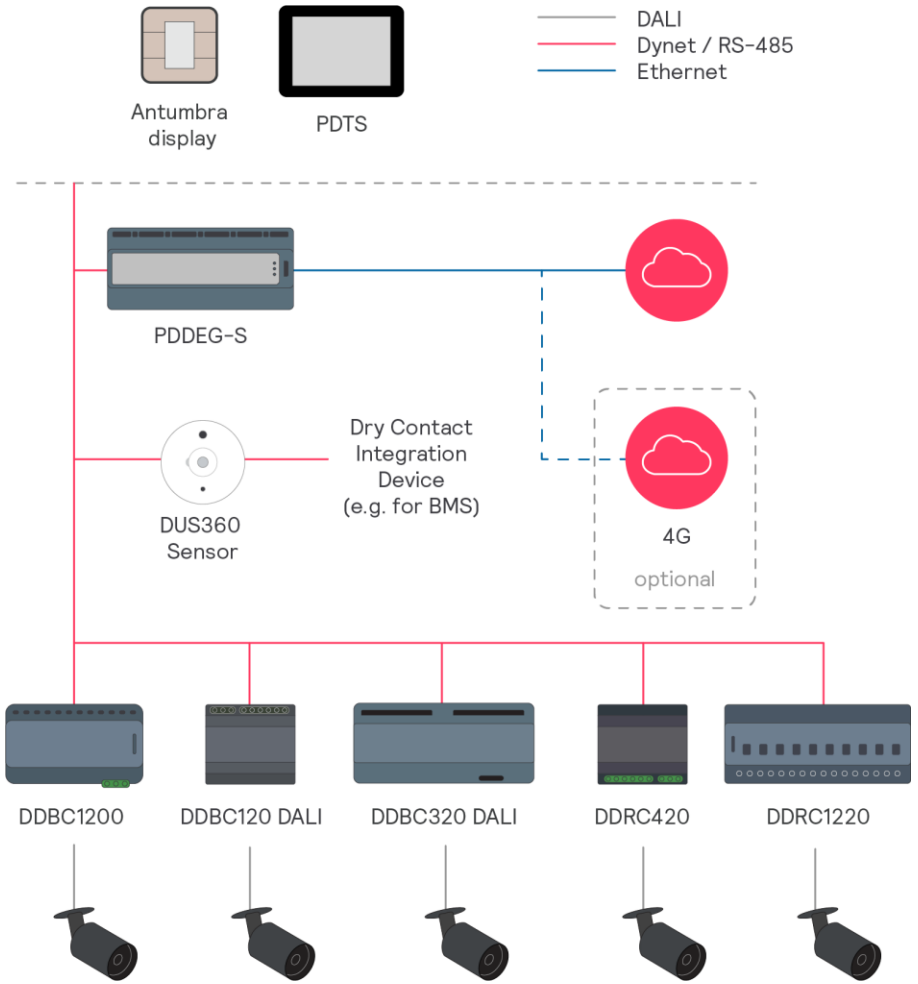
Onsite installation | Prerequisites

To begin with **Multisite** system configuration make sure bellow steps are accomplished :

- All **luminaires are installed**, wired, and powered ON
- **Sensors** and **user interfaces** are installed and wired according to installation manuals
- **Controllers** are wired in the distribution board (Power & Dynet) and powered ON
- Basic checks are performed to ensure correct wiring to the controllers
- The customer IT network is successfully scanned using the **Interact Connectivity Toolbox** software
- **PDDEG-S** site gateway is connected to the cloud
- **Interact Retail Install app** is installed on the phone
- The **work order** is checked using the mobile app
- A Dynalite **DTK-622USB PC Node** is available
- The **System Builder** software is installed with an enabled **Technician license**
- The latest PDDEG-S **firmware** is downloaded from the **Signify Partner Portal**



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Site gateway

Architecture FLX - Multisite

Site gateway | Open Job file from the cloud

Login to the cloud

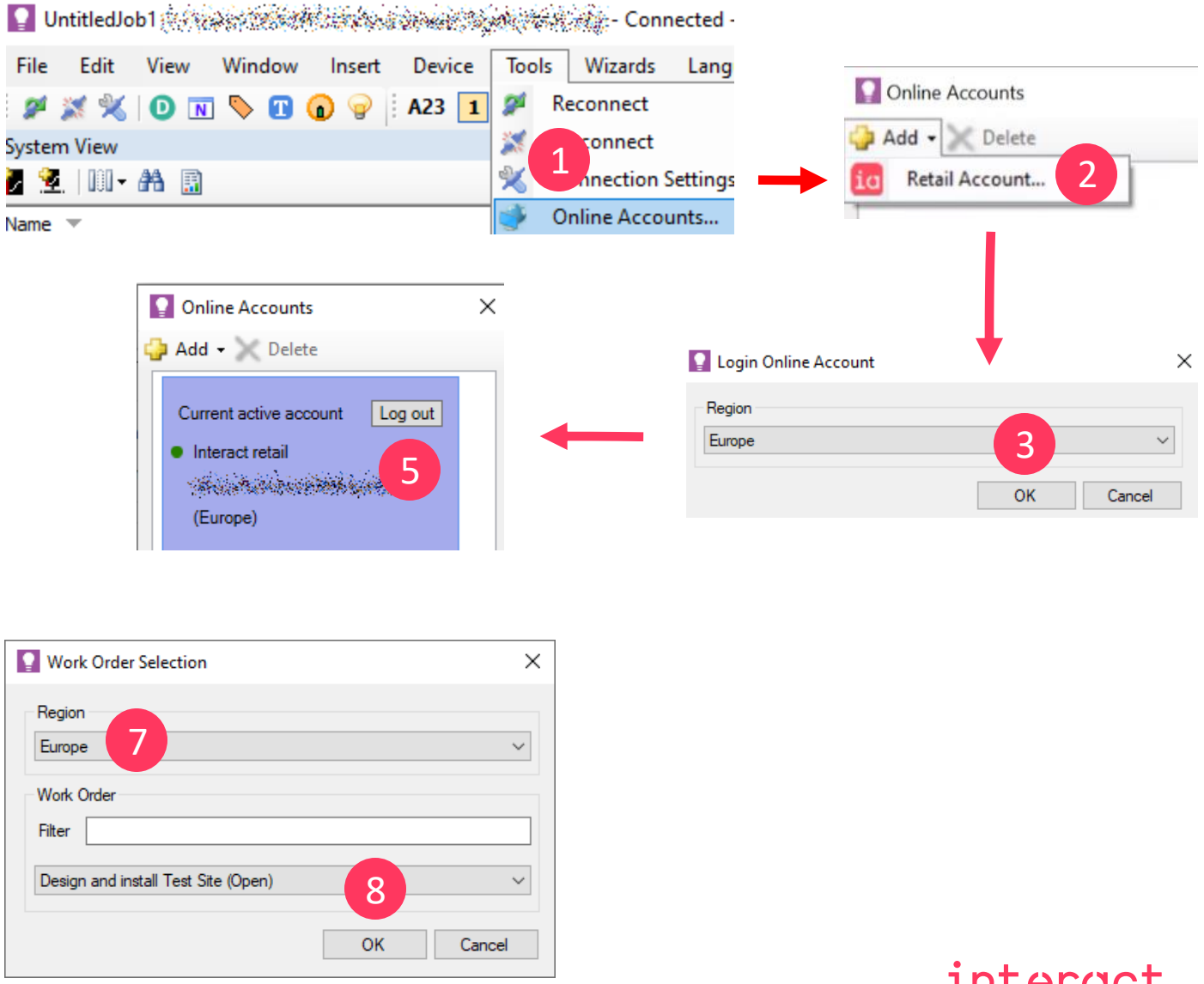
Connect the PC to the Internet and run System Builder

1. On the **Tools** menu, click **Online Accounts**
2. Click **Add** and select **Retail Account**
3. Select the **Region** and click **OK**
4. Select your account to login to. If required, fill in your password
5. Account has been linked with the Multisite cloud

Open job file from the cloud

6. On the **File** menu, click **Open** and select **Open Job From Cloud**
7. In the **Work Order Selection** menu, select the **Region**
8. Select the work order that belongs to the site, then click **OK**

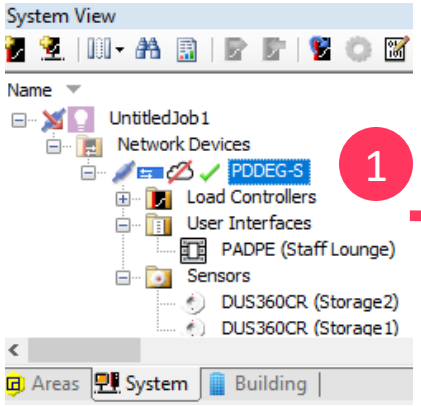
Wait a moment until the file is successfully loaded

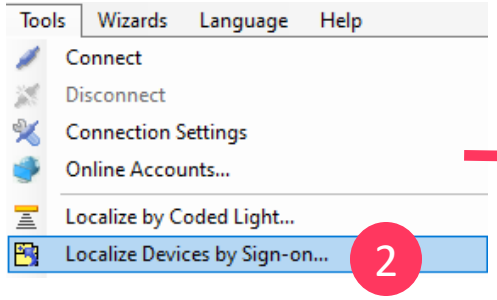


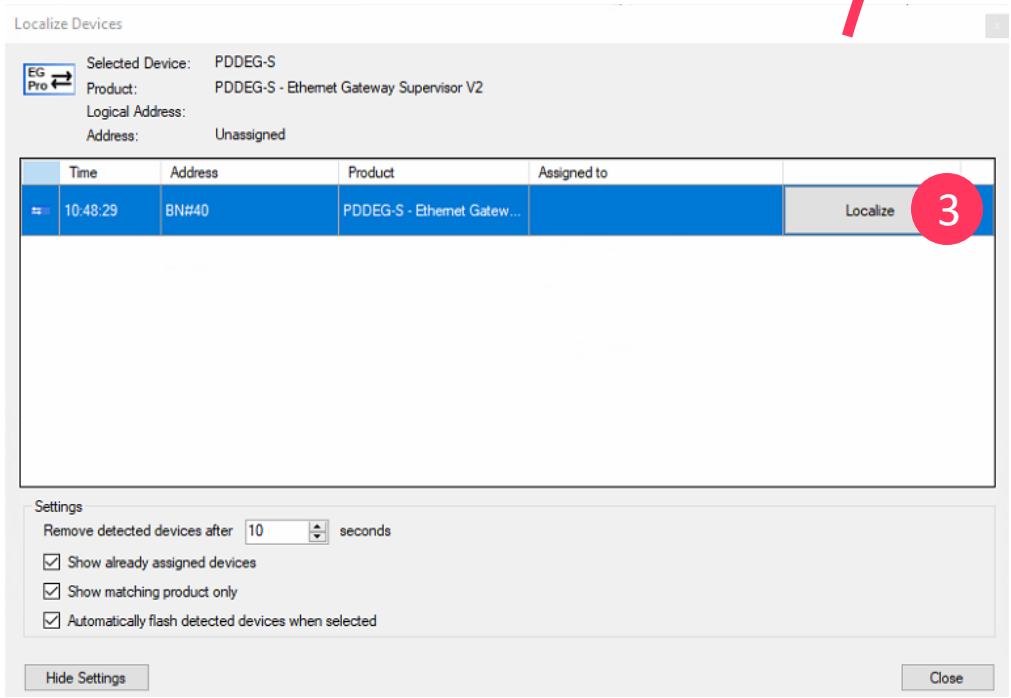
Site gateway | Upgrade PDDEG-S

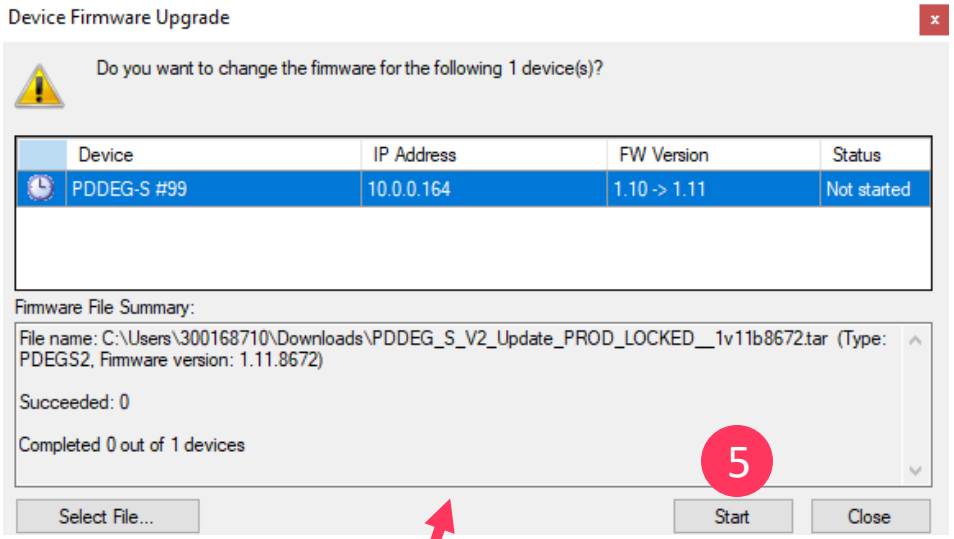
Localize and upgrade gateway

1. In the **System** view, select the **PDDEG-S.**
2. On the **Tools** menu, click **Localize Devices by Sign-on.**
3. Push the sign-on button on the gateway. In the **Localize Device** dialog box, click **Localize**.
4. Right-click the device and select **Firmware Upgrade**.
5. Select the new firmware file and click **Start**. Wait until the upgrade process is finished.









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Site gateway | PDDEG-S network configuration

Configure network settings

1. In the **System** view, select the **PDDEG-S**
2. On the **Ports** tab, click **Advanced** to expand additional configuration options
3. Select one of the following:

   - **Use static IP address** to **False,** to obtain dynamic settings of the customer IT network

   - **Use static IP address** to **True,** to configure static IP and network settings manually.

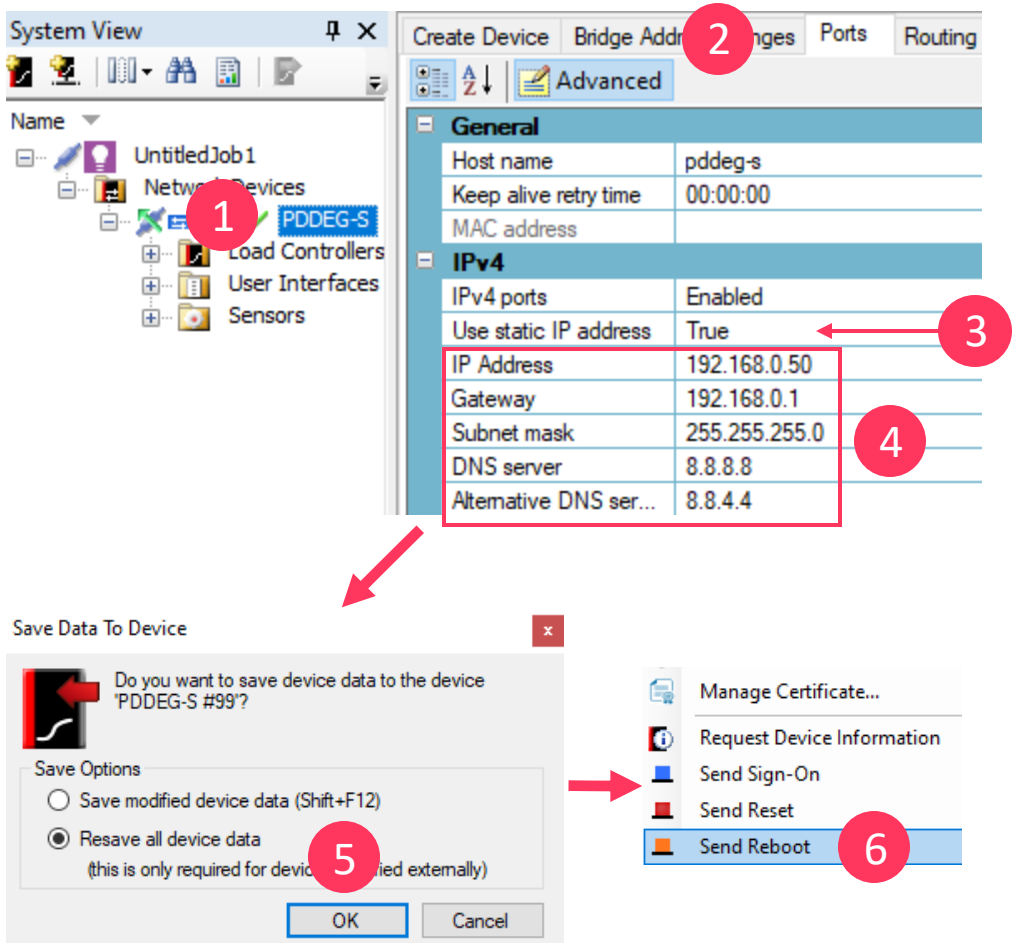
     Always use static IP address configuring Metered Energy with PDEB/PDEG

4. With the **Static IP** set to **True,** manually set **Gateway**, **Subnet mask**, **DNS server,** and **Alternative DNS server**
5. Right-click the device and select **Save To Device.** Select **Resave all device data,** click **OK**.
6. Right-click on the PDDEG-S and **Send Device Reboot** to apply new network configurations.

Save job file to the cloud

7. **Save** modified job file **to the Cloud**. Make sure to use a proper **Work Order**

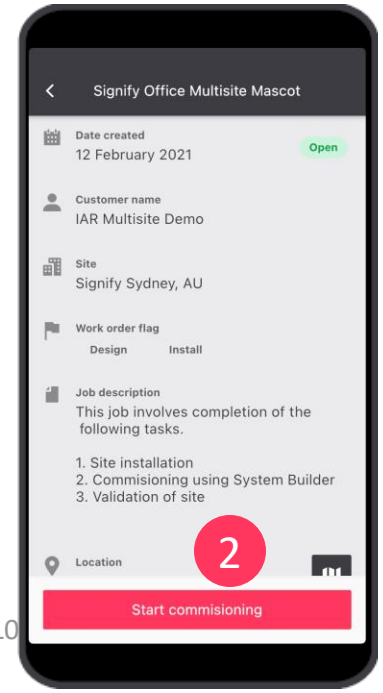
*Wait until the file is successfully saved to the cloud. Observe progress in the **Application** logs*

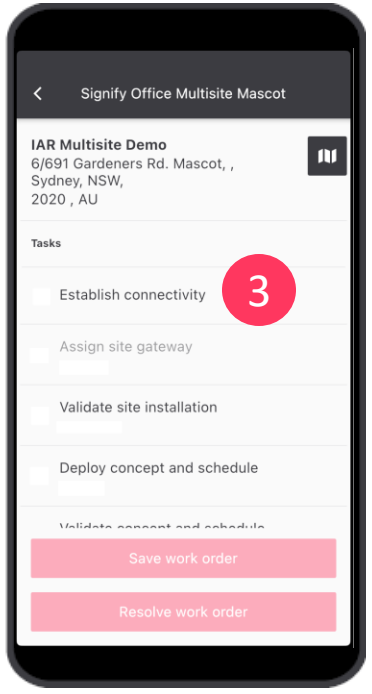


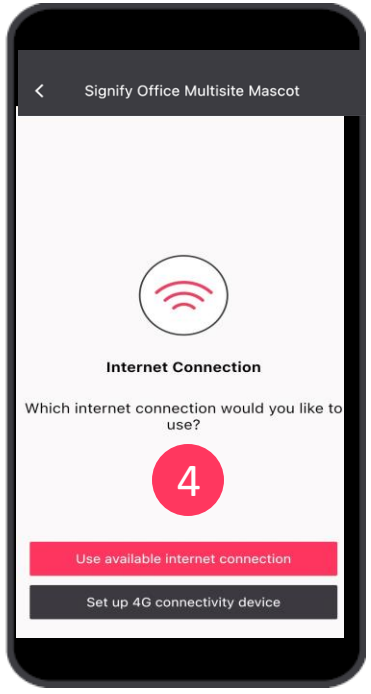
Site gateway | Activate PDDEG-S 1/2

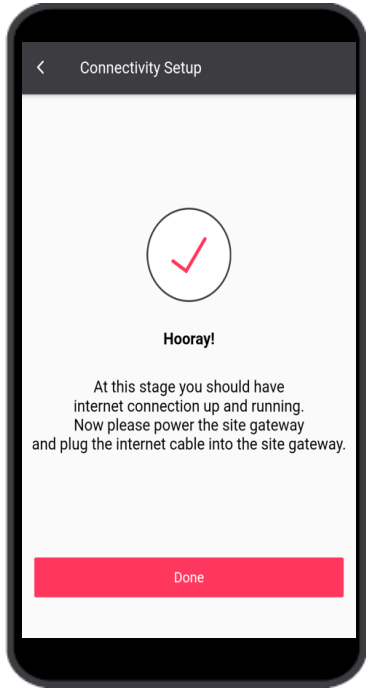
Establish connectivity:

1. Run the **Interact Retail Install app**, select the Region and relevant Work Order
2. Tap **Start commissioning**
3. Tap **Establish connectivity**
4. Select **Use available internet connection** while using customer IT outbound connection
5. Select **Set up 4G connectivity device**, while using 4G modem delivered by Signify. Follow further on-screen instruction
6. Tap **Done**









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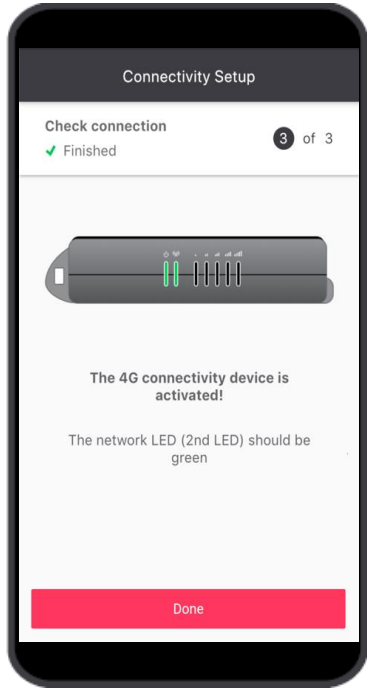

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Site gateway | Optional 4G modem configuration

About the Modem:

1. Out-of-the-box connectivity device.
2. Equipped with an internal soldered SIM which is ready for use.
3. Includes the following accessories: a 1.5m Yellow Ethernet cable, 2 cellular antennas to provide optimum signal strength and 1 DIN rail mounting bracket
4. It requires **24V DC, 1.5A Power Supply** which needs to be ordered independently.
5. At the back of each modem there's a sticker with a unique bar code which will be required by the Interact Retail Install app.

Site gateway | Optional 4G modem configuration

Advices:

1. Ensure you install the modem in an area with enough network coverage.
2. After the external power source is switched on, wait 2 minutes for confirming the modem connects to the mobile network.
3. The Vodafone MachineLink 4G Lite router uses eight LEDs to display the current system and connection status.

Number of lit LEDs	Signal Strength
All LEDs unlit	< −120 dBm
1	−119 dBm to −100dBm
2	−99 dBm to −90 dBm
3	−89 dBm to −80 dBm
4	−79 dBm to −70 dBm
5	≥−69 dBm

LED icon	Name	Colour	State	Description
	Power		Off	Power off
			Double flash	Powering up
			On	Power on
			On	Power on in recovery mode
			Slow flashing	Hardware error, such as SIM not inserted.
	Network		On	Connected via WWAN
			Blinking2	Traffic via WWAN
			Slow flashing	Connecting PDP/Waiting for demand.
			On	Registered network
			Slow flashing	Registering network
			Slow flashing	SIM PIN locked
			Fast flashing	SIM PUK locked
			On	Can't connect or device is in Configuration mode, see the Initialisation section for more information.
	Signal strength		On	LTE
			On	WCDMA signal
			On	GSM/GPRS signal

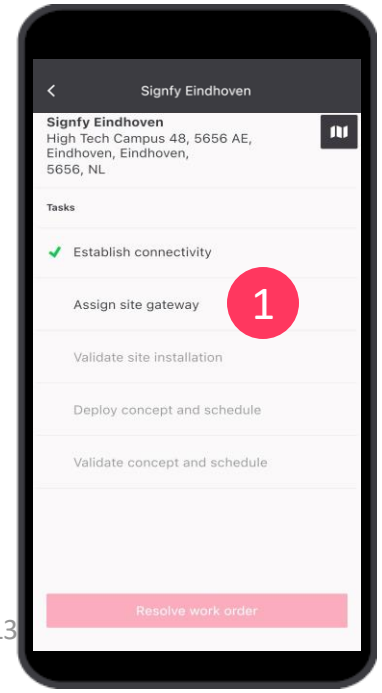
Site gateway | Activate PDDEG-S 2/2

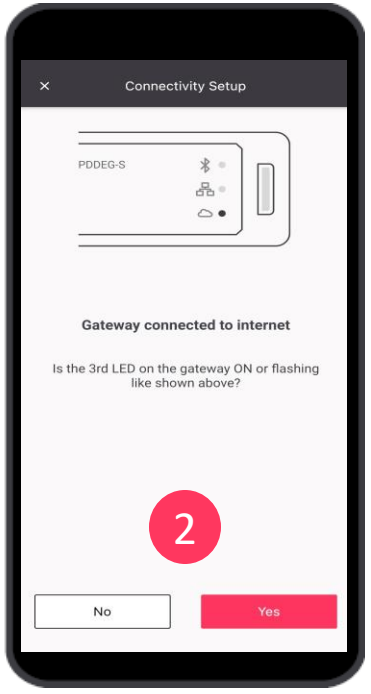
Activate gateway:

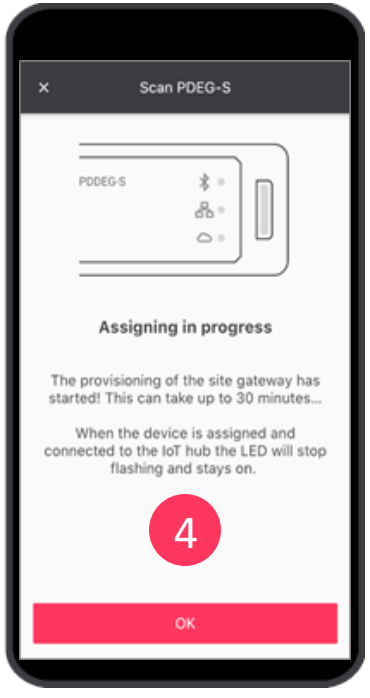
1. In the app, tap **Assign site gateway**
2. Check on PDDEG-S if the bottom led flashes:

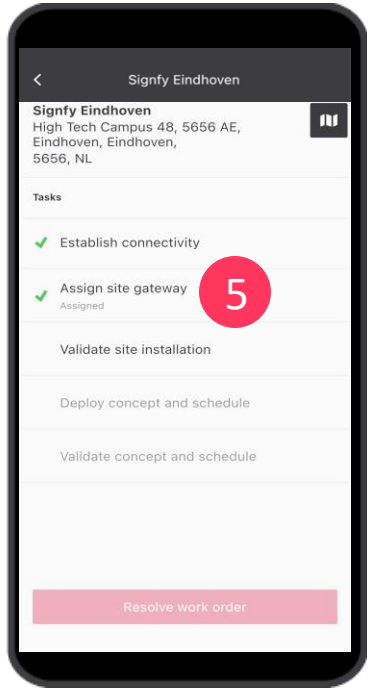
- If so, tap **Yes**
- If not, tap **No** and follow the steps in the app

3. Scan the **QR-code** on the PDDEG-S
4. After reading the message **Assigning in progress**, tap **OK**
5. Wait for the gateway to be assigned. It can take up to 30 minutes









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Commissioning

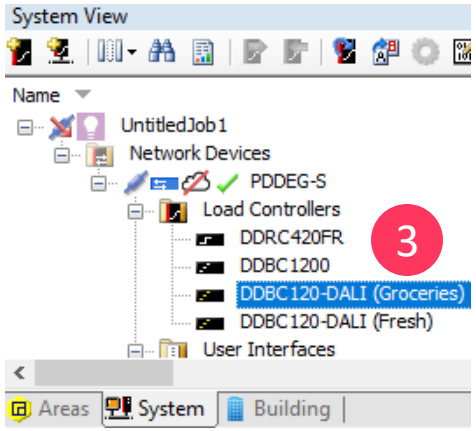
Architecture FLX - Multisite

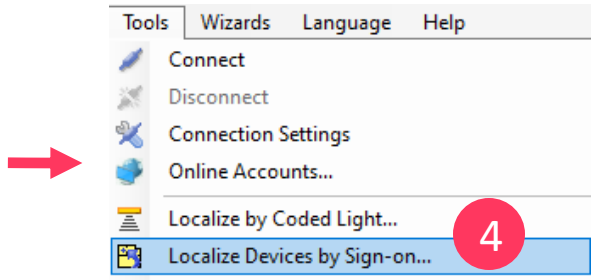
Commissioning | Assign box numbers

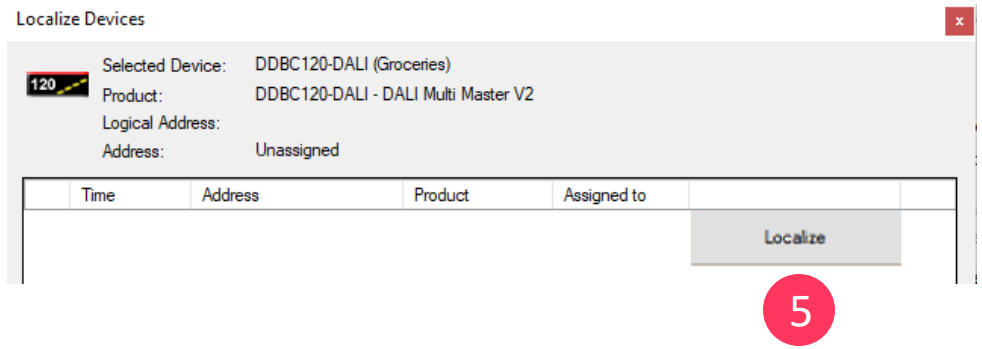
With PDDEG-S gateway successfully assigned to the cloud, further commissioning process is handled in the **System Builder** software.

Assign box numbers to devices in the job file

1. In the System Builder, **open** the **job file from the cloud**.
   Make sure to use a proper **Work Order.**
2. Connect PC to the DyNet network
3. In the **System view**, select either load controller, user Interface, integration device or sensor
4. On the **Tools** menu, click **Localize Devices by Sign-on**
5. Push the **sign-on** button on the device. In the **Localize Device** dialog box, click **Localize**. Use **sign-on** by torch, or dedicated IR remote controller for sensors that are difficult to reach.
6. After successful box number assignment **re-save** configuration to the device.
7. Repeat steps for **all devices** in the DyNet network.







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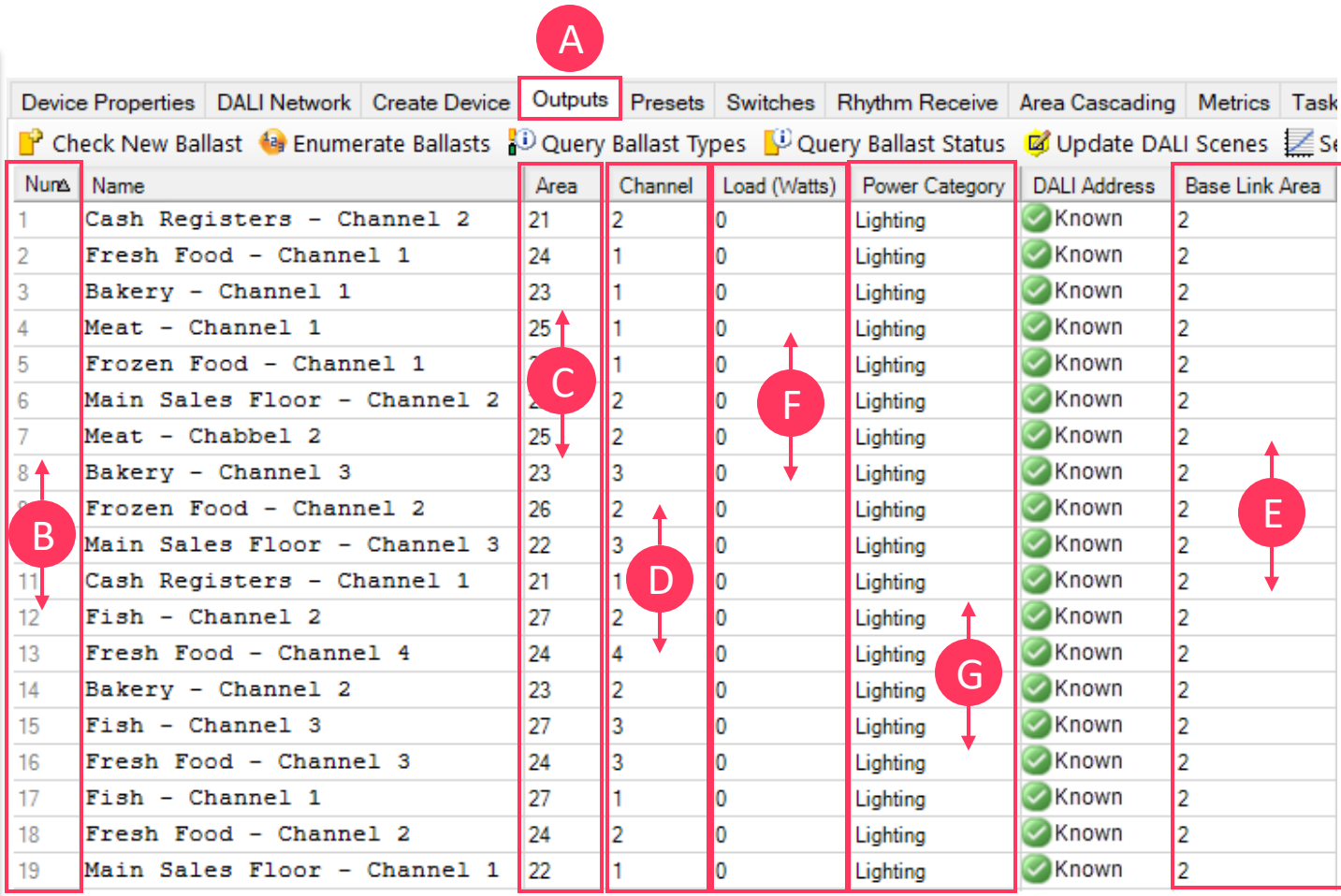
Commissioning | Configure DALI

DALI individual addressing (DDBC120-DALI, DDBC320-DALI)

When all DALI ballasts are enumerated for a selected controller:

1. On the **Outputs** tab (A), map the **Physical Channels** (B) to the correct **Child areas** (C) and **Logical Channels** (D)
2. In the column **Base Link Area** (E), map the number of the **Child area** (C) with the *Parent Area. R*eflect **Project Template** and the **IAR Cloud** configuration
3. Calculate and fill in the **Load** (F) in Watts and select the **Power Category** (G) of the physical channel
4. Right-click the device and select **Save To Device**. Select **Resave all device data** and click **OK**
5. Repeat for other DALI individual addressing devices



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Commissioning | Finalize configurations

Configure sensors

Most of the sensor configurations are finalized during the **Offsite preparation,** and have been described in the previous module: **System Builder** | Additional configurations – Sensors

Offsite configurations are already saved to the physical devices.

During **Onsite installation**:

- While using **DALI sensors** make sure to enumerate these devices and assign correct box numbers.
- While using **Daylight harvesting** feature make sure to **calibrate** all involved sensors.
- **Validate** if the sensors work as expected.
- Remember to **always use Resend Inhibit Period** for motion detection functionality.

Configure user interfaces

Most of the sensor configurations are finalized during the **Offsite preparation,** and have been described in the previous module: **System Builder** | Additional configurations – User Interfaces

Offsite configurations are already saved to the physical devices.

- During **Onsite installation** please **validate** if the user interfaces work as expected

Commissioning | Additional configurations – Alarm Integration

Integrate Alarm, via the Dry Contact Inputs (DDMIDC8)

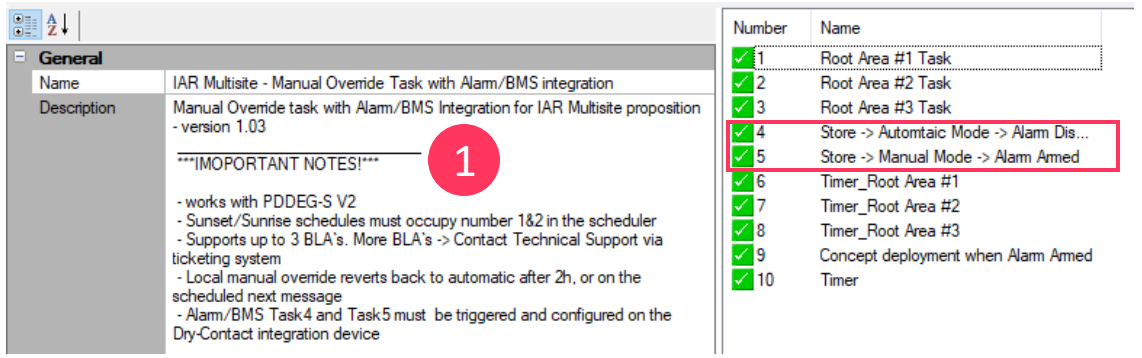
The **Dry Contact** interface, can provide integration with **Alarm systems**.

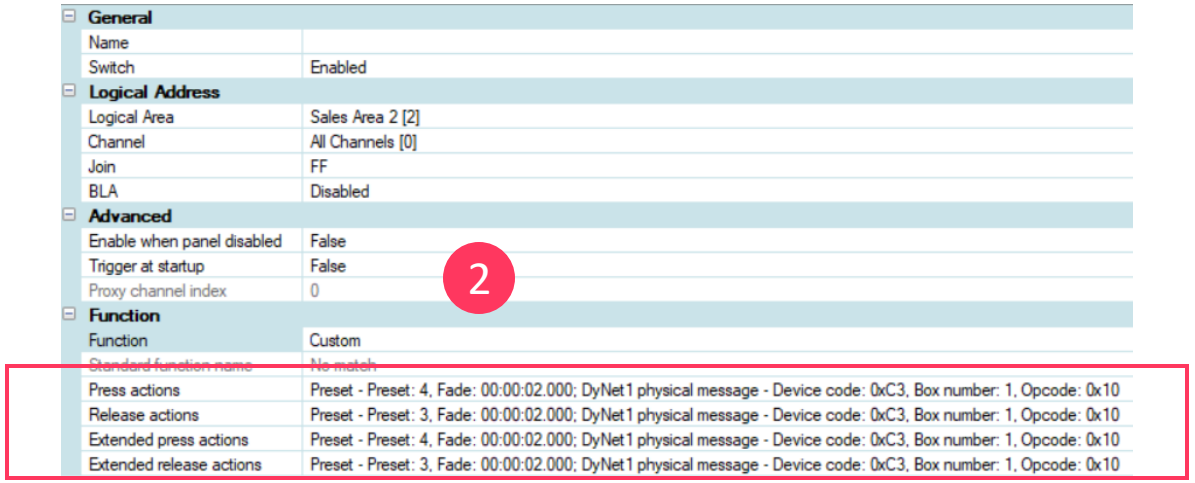
Specific configuration must be followed, to enable this functionality.

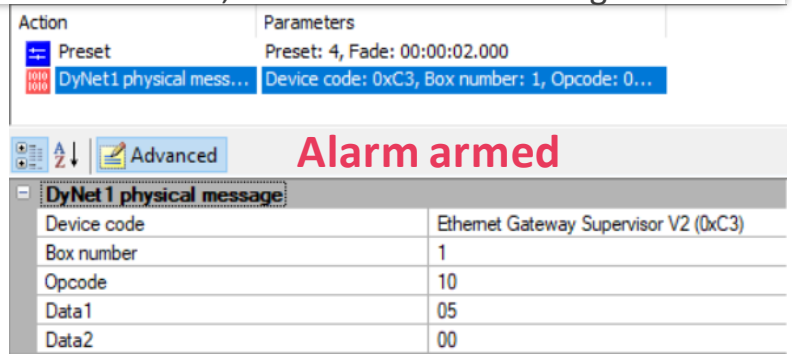
To integrate with an external **Alarm system:**

1. IAR **Multisite Manual 2-Hour Override and Alarm Integration** Task must be applied on **PDDEG-S**
2. Dry Contact Input used for the Alarm integration should be configured with a **Custom function,** and **Join Byte 0x85**
3. Configure following **input actions**:

- **Start task 5** on the PDDEG-S device, when the **Alarm** is being **armed**
- **Start Task 4** on the PDDEG-S device, when the **Alarm** is being **disarmed**







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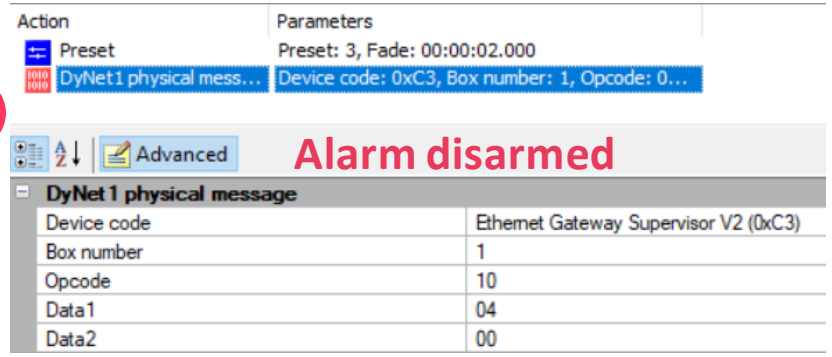

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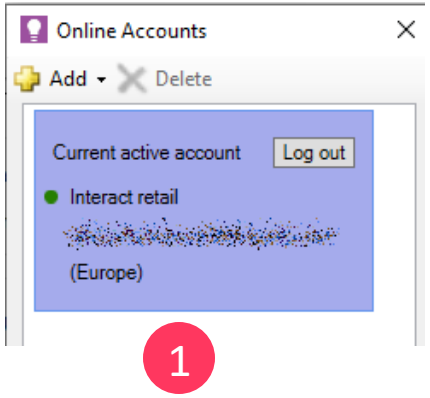
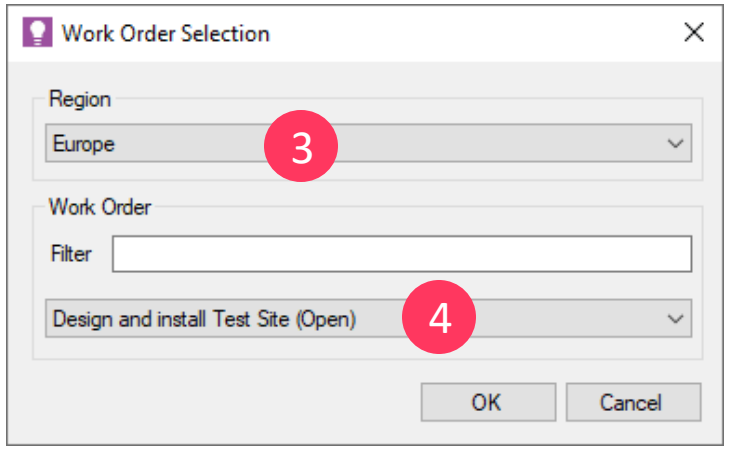
Commissioning | Save SB job file to the cloud

Save final job file to the cloud

1. Make sure System Builder is connected to the **Multisite account**
2. On the **File** menu, click **Save As** and select **Save Job To Cloud**
3. In the **Work Order Selection** menu, select the Region: Europe
4. Find and choose applicable work order, then click **OK**

*Wait until the file is successfully saved to the cloud. Observe progress in the **Application** logs.*





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Onsite commissioning: Metered Energy

Architecture FLX - Multisite

Multisite metered energy | Additional configurations

While using Modbus RS485 architecture :

- Update **PDDEG-S** firmware version to **1.23** or higher.
- Upgrade **PDEG/PDEB** firmware version to **3.58** or higher.
- Upgrade **DDNG485v3** firmware version to the latest version.

Modbus Meter settings:

- Configure **Meter Address** and **Baud Rate** (supported Baud Rates are : **9600, 19200, 38400**).
- Configure other **Data Format** parameters as follow: **Half-duplex**, ***Data bits* 8, *Parity None*, *Stop bits* 1**.
- Ensure **IP Address** on the Modbus Meter equals IP address configured on the Meter in System Builder.
- Ensure **Port** specified on the Modbus Meter equals port configured on the Meter in System Builder.
- Verify general electrical configurations and if applicable configure Current Transformers ratio.

Modbus Meter	
Enable	Enabled
Meter Address	10
IPv4 Address	192.168.1.5

Port	
Port type	Modbus gateway
Baudrate	38400
Delay (milliseconds)	5
Retry delay (milliseconds)	300
Port mode	Half duplex
Data bits	Data bits 8
Parity	Parity none
Stop bits	Stop bits 1
DMX max Channel	65535
Trust DyNet	True
Pass Non DyNet	True
Pass DyNet	True
Handshake	RS485
Zero DMX levels enabled	True
Modem	False
Echo	False
Query Delay	65535

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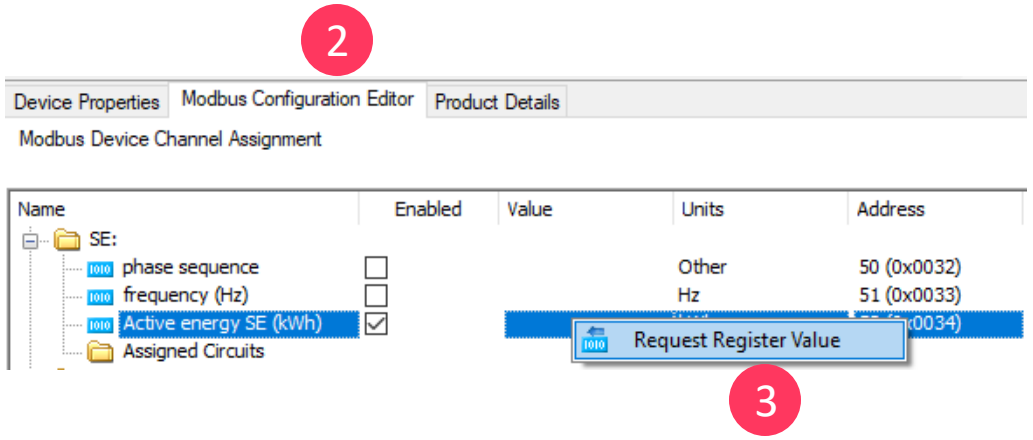
Onsite validation

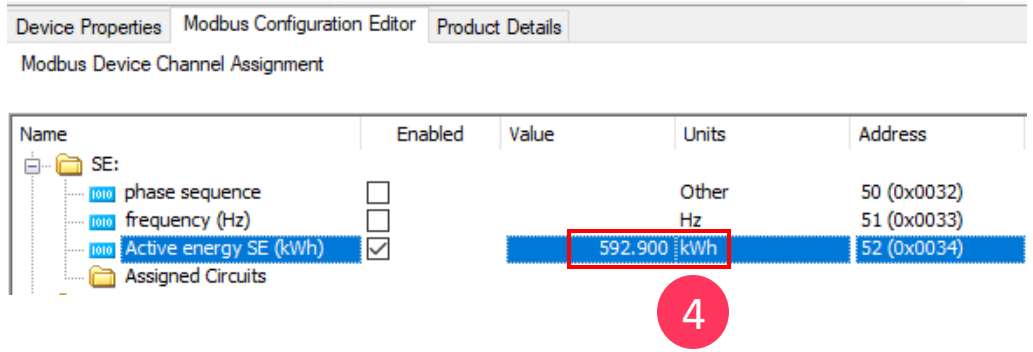
Architecture FLX - Multisite

Multisite metered energy | Onsite validation

1. In the **System** view, click on the **Modbus Meter.**
2. Go to **Modbus Configuration Editor** tab.
3. Right click on the **Active Energy** register and select **Request Register Value**.
4. Confirm that Register Value is being populated. Verify against expected consumption.
5. Observe SB network logs and confirm that **Binary Metric Data** is being generated every 15 minutes.

***Note**: Approximately after 1 hour the Metered Energy data will start to be presented in the Customer`s dashboard.*





Local Time	Data	Description
15:36:42.476	AC 08 A3 DC 00 1F AA 55 55 07 00 14 00 00 01 01 01 DC 00 1F...	Binary Metric Data - Metric type: Channel Energy, Data: [Value: 3701600 Wh], Metric address: [DC:0xDC, BN:31], Modbus device address: 11, Modbus register address: 52, Metric version: 1.1, Header version: 1.1
15:51:42.567	AC 08 A3 DC 00 1F AA 55 55 07 00 14 00 00 01 01 01 DC 00 1F...	Binary Metric Data - Metric type: Channel Energy, Data: [Value: 3703100 Wh], Metric address: [DC:0xDC, BN:31], Modbus device address: 11, Modbus register address: 52, Metric version: 1.1, Header version: 1.1

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Site validation

Architecture FLX - Multisite

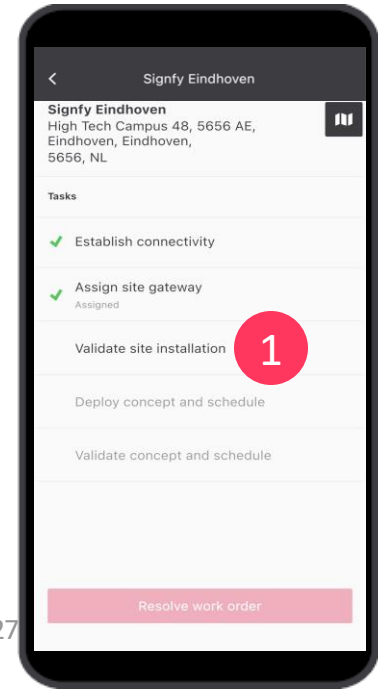
Site validation | Mobile app

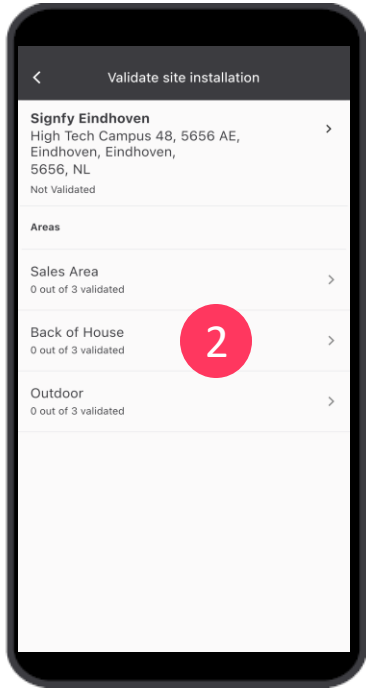
Validate Areas, Child Areas and Logical Channels

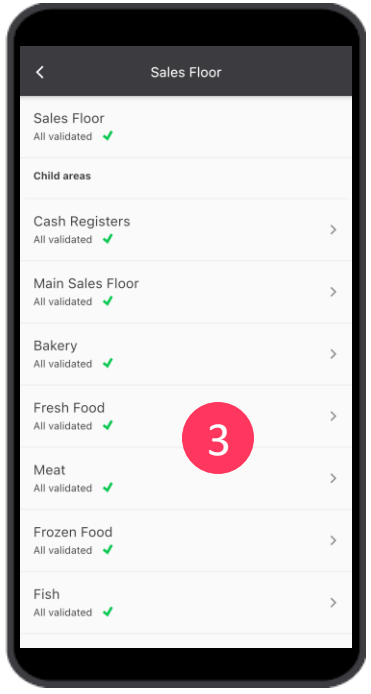
1. In the app, tap **Validate site installation**
2. Tap the name of a **Parent Area**
3. Tap the name of a **Child Area**
4. Tap the name of a **Logical Channel**
5. Tap the buttons and check visually if the lights respond accordingly. Correct if necessary.
6. When the lights respond as expected, tap **Yes, confirm**

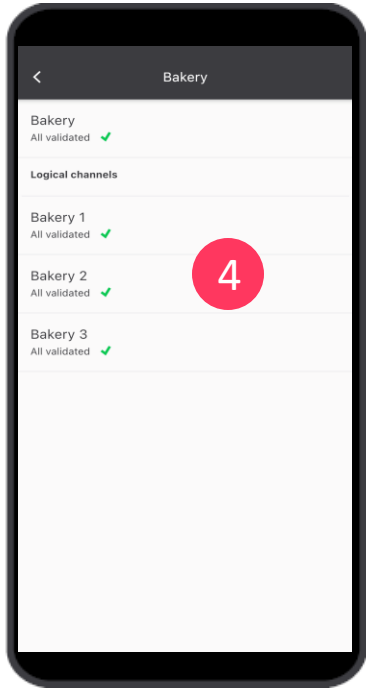
Repeat for all existing **Parent Areas**, **Child Areas** and **Logical Channel**

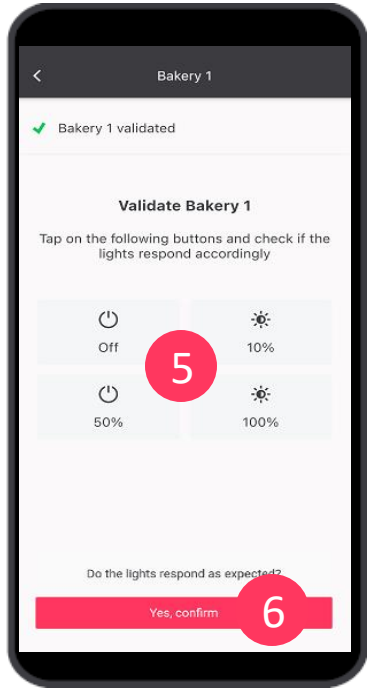
Make sure **Site**, **Areas**, **Child Areas** and **Logical Channels** are validated → ✔











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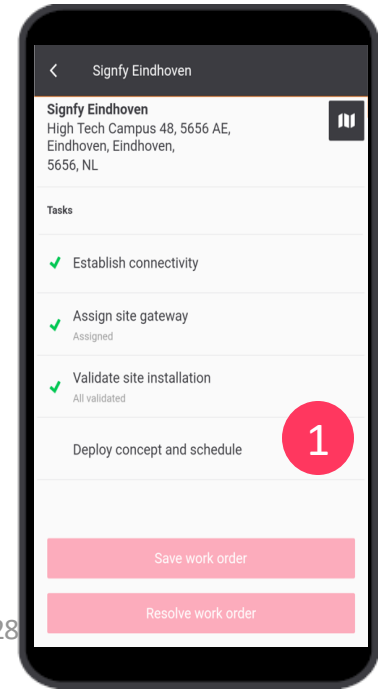
Site validation | Mobile app

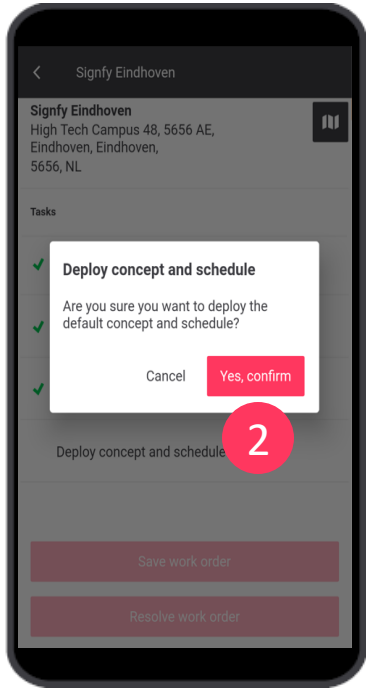
Deploy and validate concepts and schedules

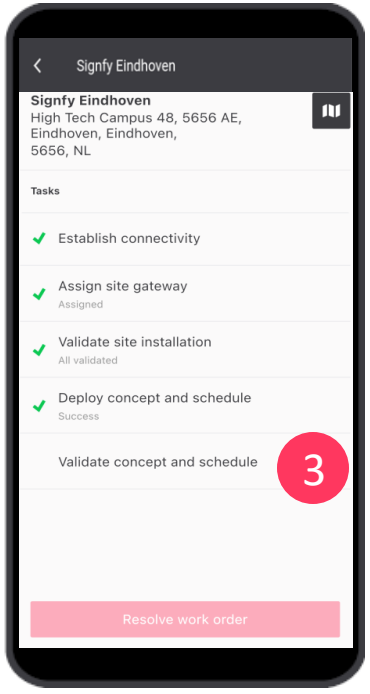
Please make sure, that the default concept and schedule are prepared in the cloud during **Offsite preparation**

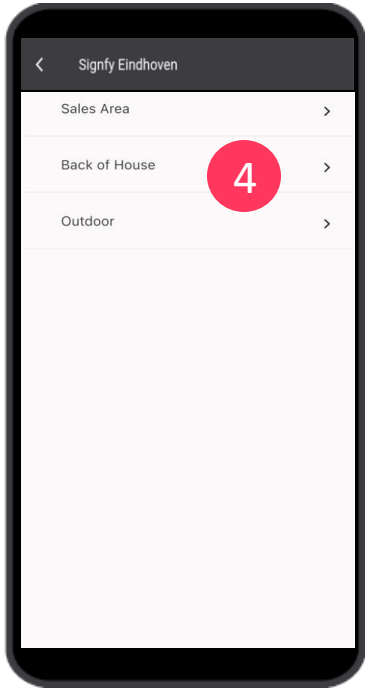
1. In the **Tasks** page, tap **Deploy concept and schedule**
2. Tap **Yes, confirm,** to deploy default concept and schedule
3. Tap **Validate concept and schedules**
4. Tap the name of a **Parent area**
5. Tap the buttons and check visually, if the lights respond accordingly. Correct if necessary.
6. When the lights respond as expected, tap **Yes, confirm**

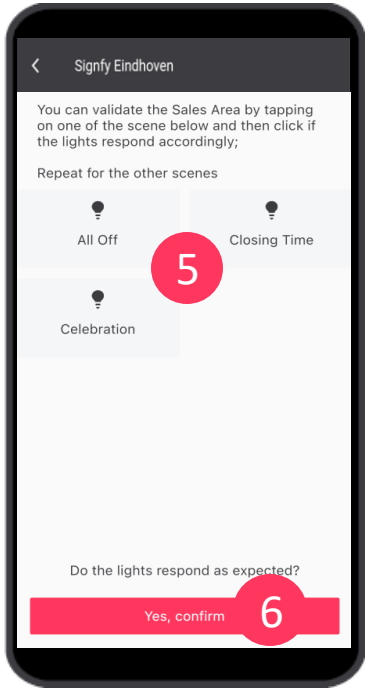
Repeat for all other **Parent areas**. Make sure to validate all Areas → ✔











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Project delivery

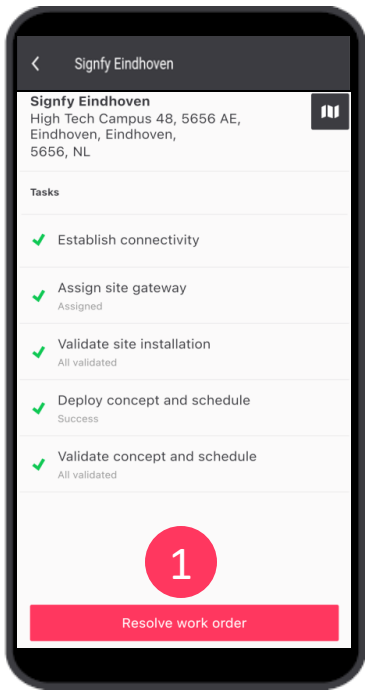
Architecture FLX - Multisite

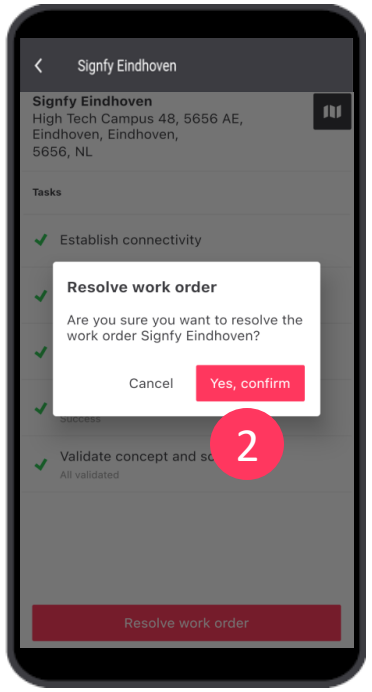
Project delivery | Mobile app

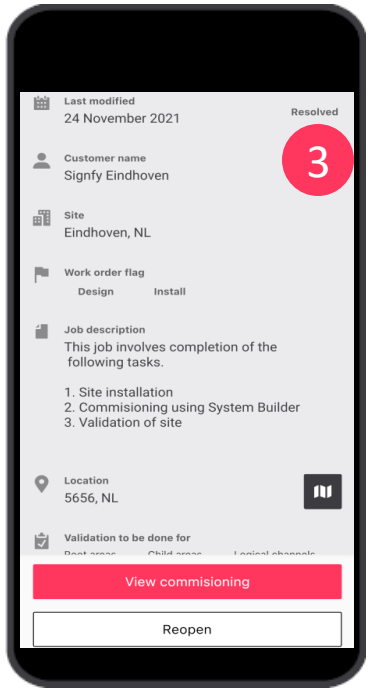
On the successful **Site validation**, all the **Tasks** are completed and marked as ✔

Resolve work order

1. Tap **Resolve work order**
2. Tap **Yes, confirm** to resolve the work order
3. Work order changes the state to **Resolved**







Congratulations !!!

Site is ready to use !

Project delivery | Customer handover

With the **IAR Multisite System** fully commissioned , **Site-Engineer** delivers the project to the **Market** organization.

It is up to the Market to **plan the final handshake with the Customer**, either on-site or remotely.

<u>For the successful handover:</u>

1. Make sure a **user account is created** for the customer (OTRS ticket)
2. User has an appropriate role assigned of the **Format** or the **Facility Manager** (OTRS ticket)
3. Print out the latest **User Guide** document.

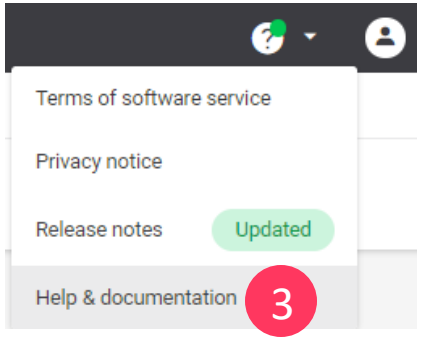
   This document can be found on the **Signify Partner Portal** or directly in the cloud **Dashboard**
4. Based on the User Guide **train the Customer** on how to use our system.

Engage with the Customer using a monthly generated report.

Use this opportunity to discuss further projects and gain feedback on our system.

User Guide

Interact Retail multisite 1.3



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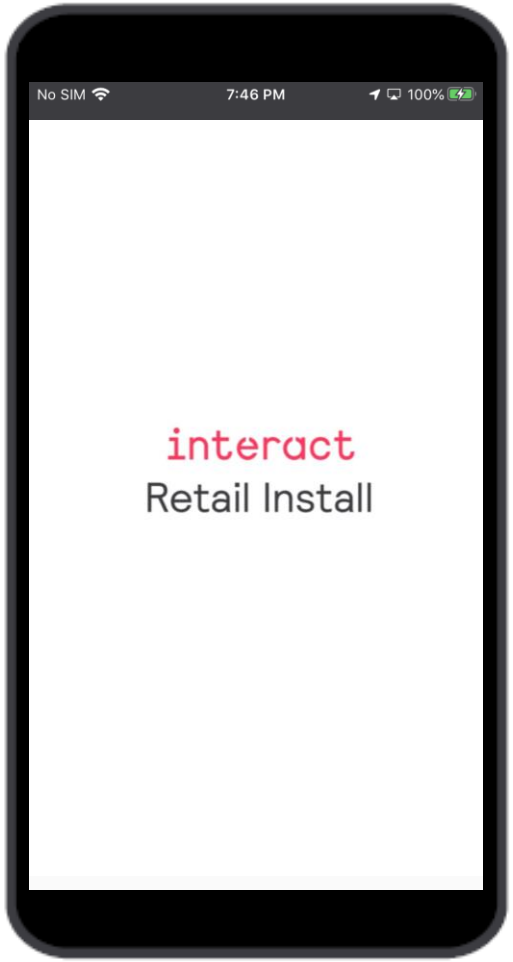
Lesson review

Architecture FLX - Multisite

Lesson review | Onsite installation, commissioning and validation

In this lesson, you:

- Explored the four steps to be taken in the on-site commissioning and validation process
  - Site gateway configuration: saving and upgrading the bridge through System Builder, and establish connectivity through the Interact Retail Install app.
  - Commissioning: resaving the final System Builder project to the cloud after localizing and saving all devices on the network, including the individual DALI physical channels when needed.
  - Optional configuration for energy metering
  - Site validation: divided into validation and deployment of both schedule and concept.
  - Hand over to the end user: which requires to resolve the work order.
- Got familiarized with the tools required for onsite commissioning.



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