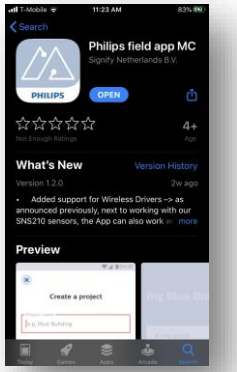
# Philips Field App
# Master Connect (MC)
# Overview


Version 1.0

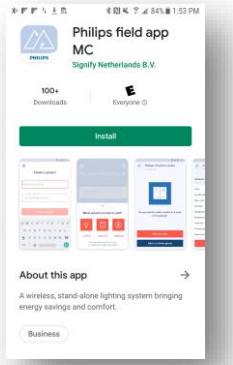
# Compatible smartphones




iOS

**iPhone 7**
**iPhone 8**
**iPhone X**

**iPhone XR**
**iPhone 11**



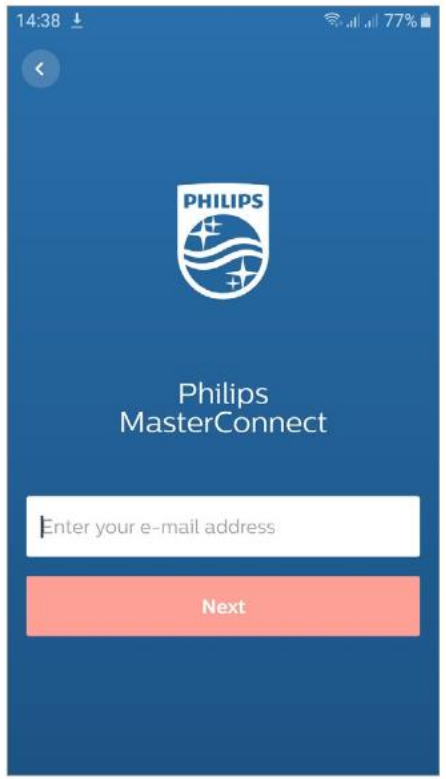

Android

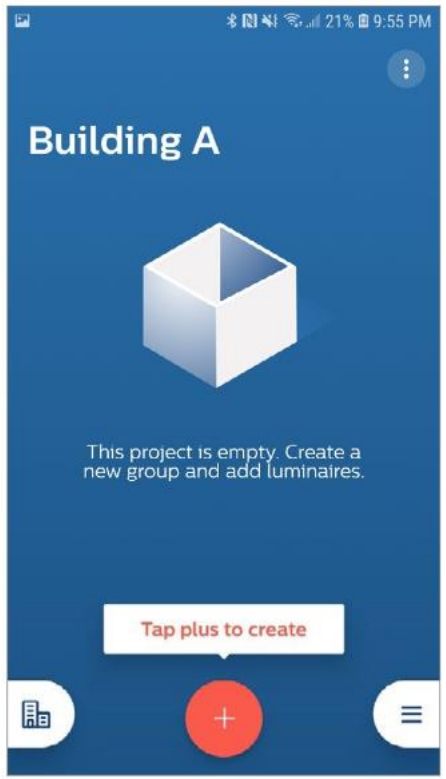
**Samsung S7 Edge**
**Samsung S8**
**Samsung S9**
**Samsung S10**

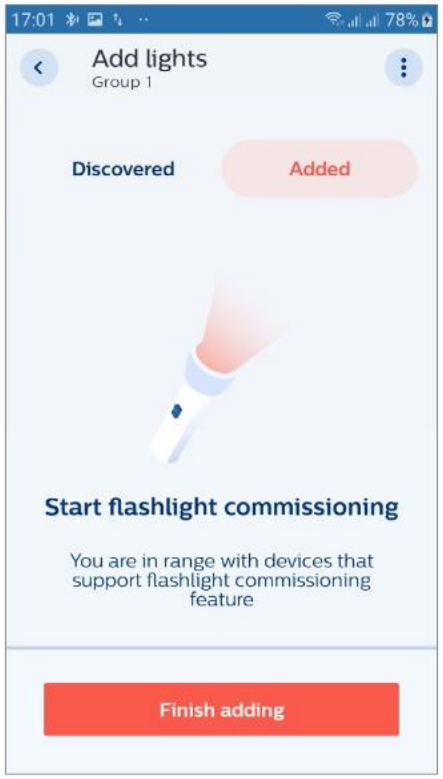
**LG Nexus 5X**
**LG Nexus 6P**
**Google Pixel 2**

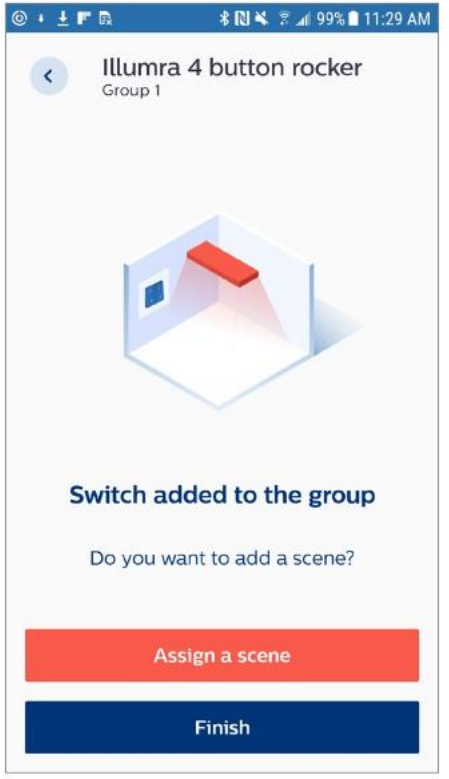
*Note 1: For devices not shown Signify cannot guarantee the performance of MasterConnect*
*Note 2: Minimum OS requirement is iOS 11 (w/ BLE 4.2) or Android 6.0 (with BLE 4.2)*

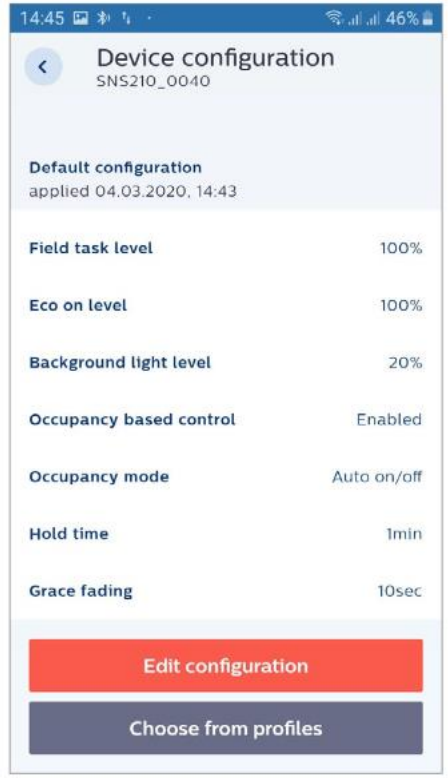
# Improved user interface and ease of use



# MasterConnect features summary


Available on the App Store

GET IT ON Google Play

**Register & login via email**

- Secure code received on email account

**Create project**

- Set of devices over a logical space within a project

**Add sensor/switch**

- Flashlight
- List based

**Group control**

**Sensor configuration**

- Group-level & single light configuration

**Scene setting**

- At zone level or whole group level

**Profiles**

- Creation and storage on phones

# MasterConnect features summary (cont.)


Available on the App Store

GET IT ON Google Play

**Occupancy modes**

**Energy reporting**

- Energy consumption at group level

**Installer test**

- Group test (switch lights on/off or dim lights up/down)
- Single test (switch light on/off)

**Over the air (OTA) upgrade**

- Firmware update (after sensor is commissioned)

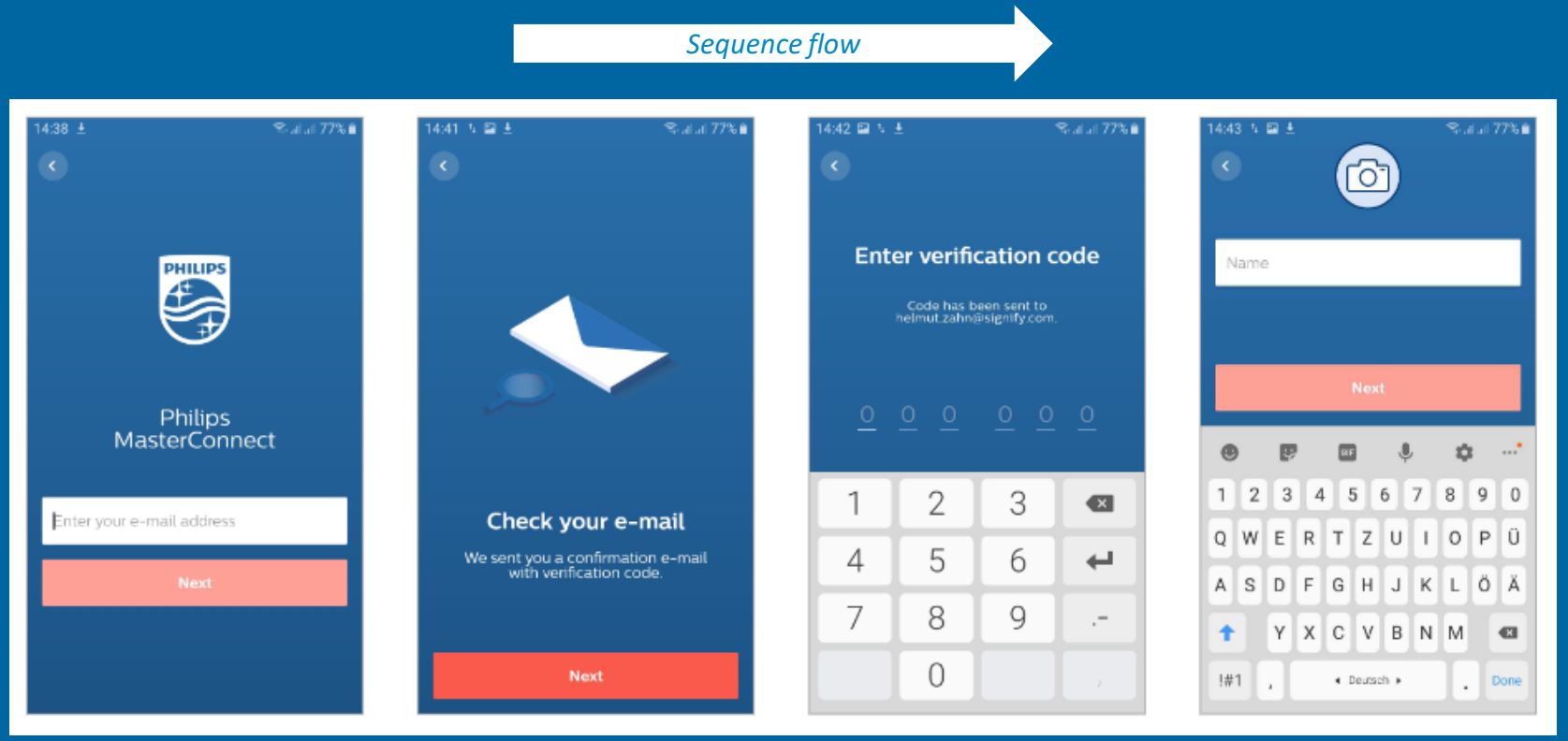
**Security**

- Devices do not show up on another user's account/phone

**Removal of devices**

- Devices can be removed from groups
- Entire projects can be deleted from the app

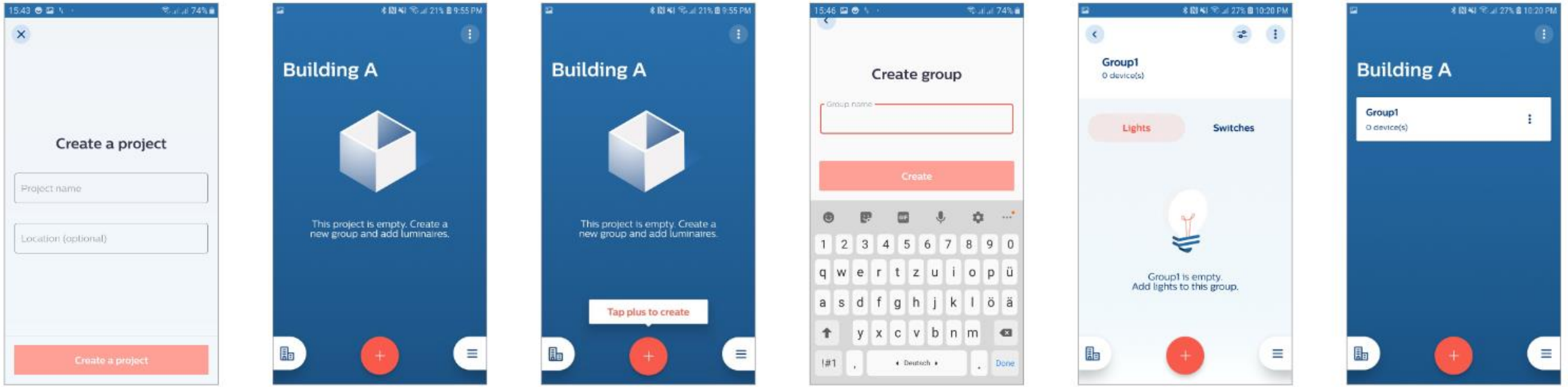
# Login




- Register with an e-mail address
- Verification code is issued at every log-in; no password is needed

# Create project & wireless control group

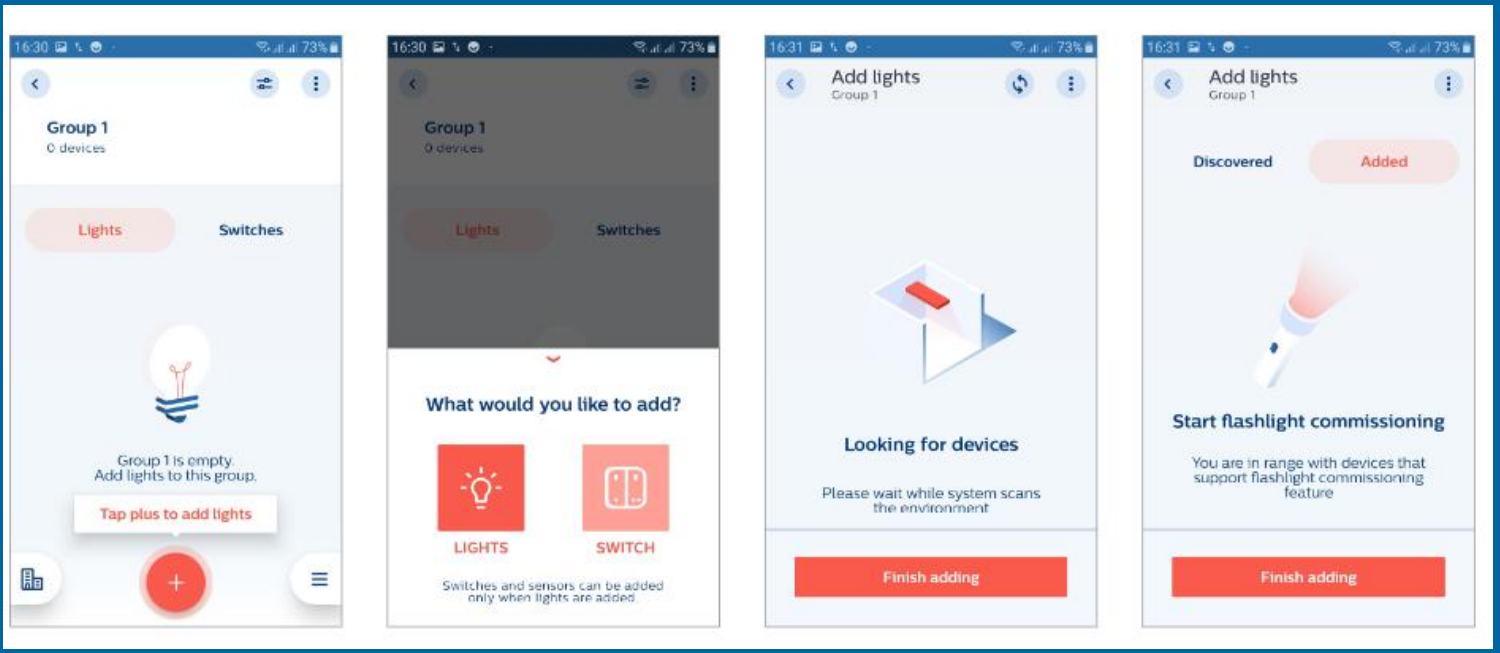
*Sequence flow*




- Project name can be associated with a building
- Group names can be associated with rooms or areas within the building

# Grouping (add SNS210 MC)

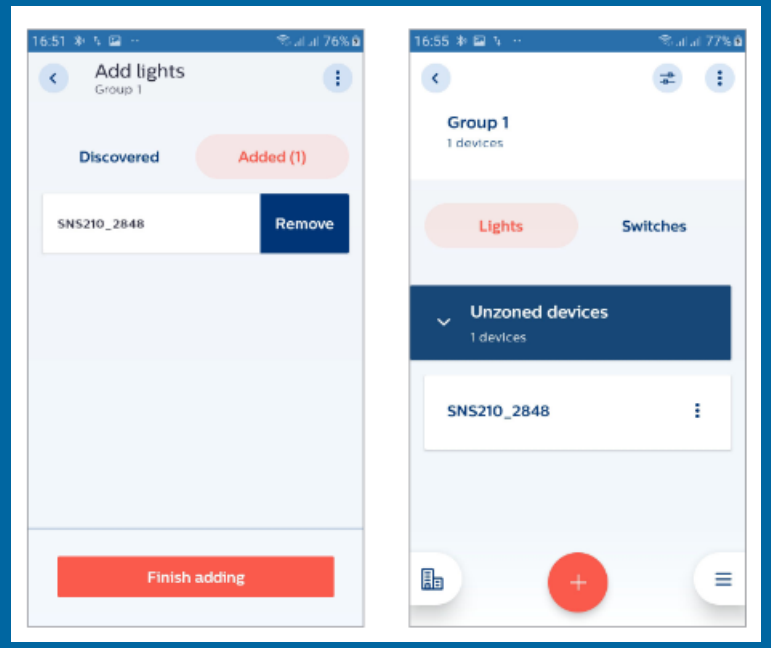
*Sequence flow*




- Detection of SNS210 MC occurs at this point
- Maximum number of lights in a group; 40 (no switches), 30 (with switches), 20 (energy reporting)
- When no switch is used all lights are operated in automatic mode only

# Add via flashlight

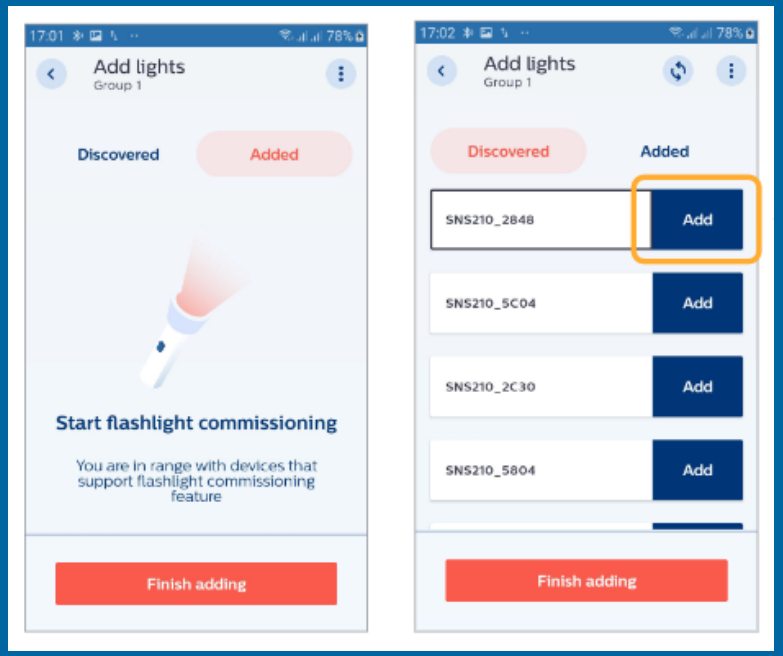
*Sequence flow*




- Steep light increase (>= 5,000 lux or 500 lumens) triggers detection by SNS210 MC
- Wait for 2 beeps from the smartphone then light will show up in Added menu
- Wait for another 3 seconds before proceeding to the next light

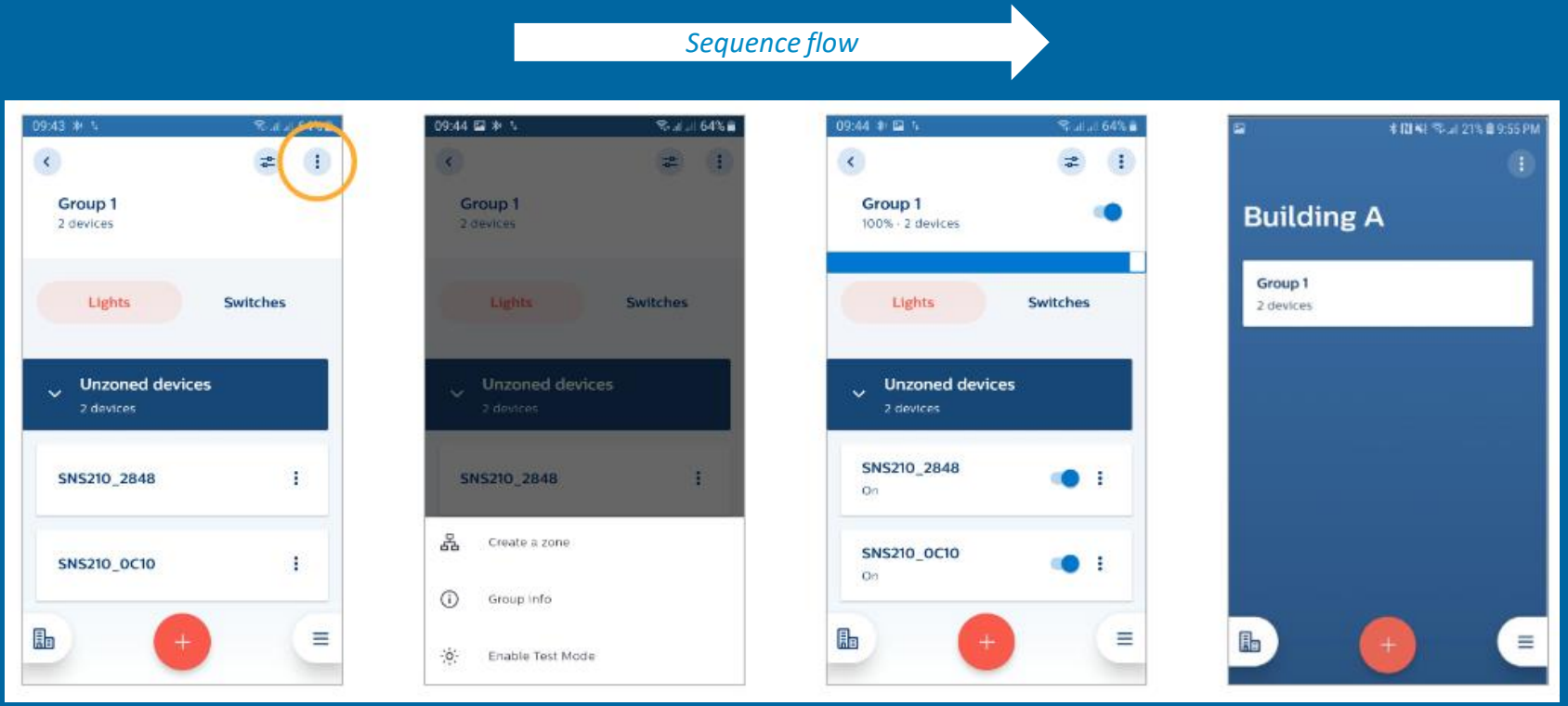
# Add via Received Signal Strength Indicator (RSSI)

*Sequence flow*




- Bluetooth signal strength from SNS210 MC is used for this method
- All detected sensor will be displayed as shown
- To check which light in the room is shown, select an entry and the corresponding light will blink 10 times

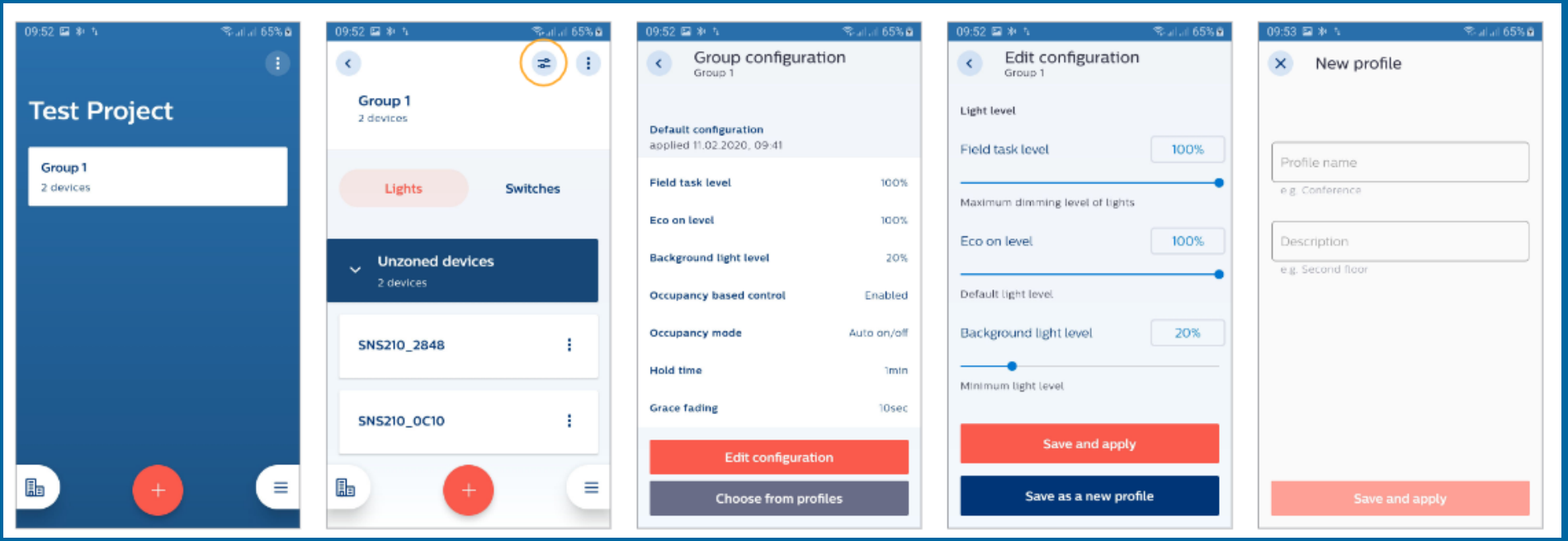
# Installer test




- Testing can be done for individual light or multiple lights
- Turning lights on/off or dimming the lights for verification
- Installer test can only be performed at the group level and not the zone level

# Group configuration

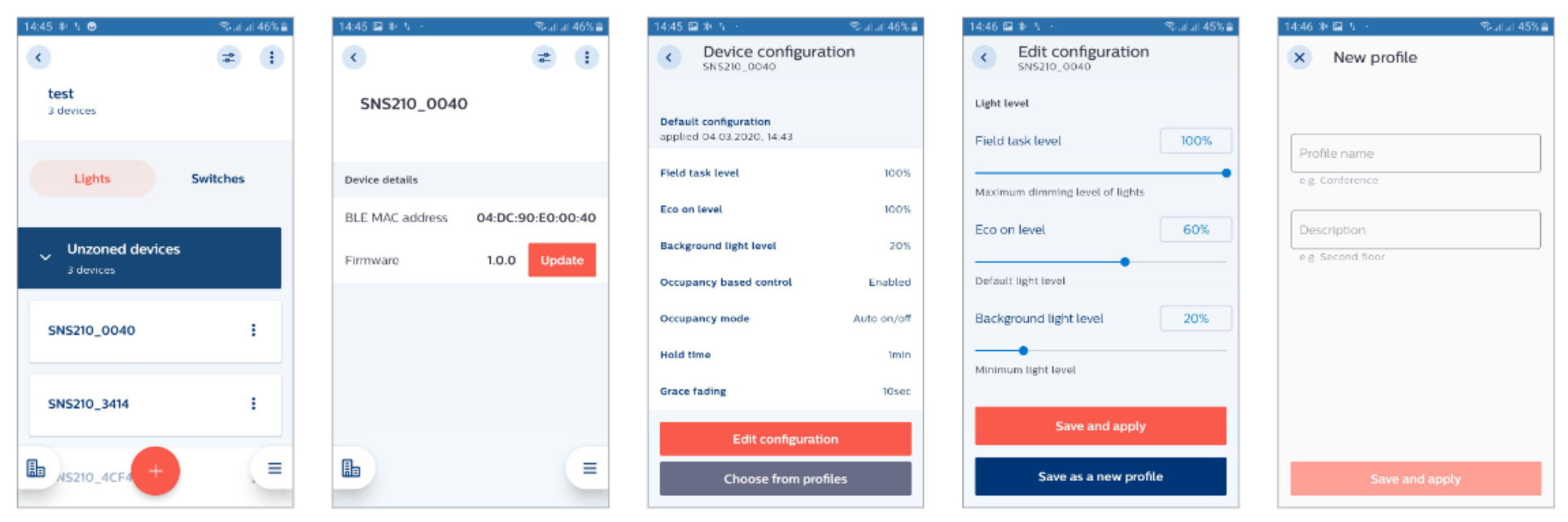
*Sequence flow*




- Desired configuration can be assigned with a profile name (e.g. indoor open office)

# Single light configuration

*Sequence flow*




- Further customization can be done at the individual light level

# Configurable parameters for SNS210 MC

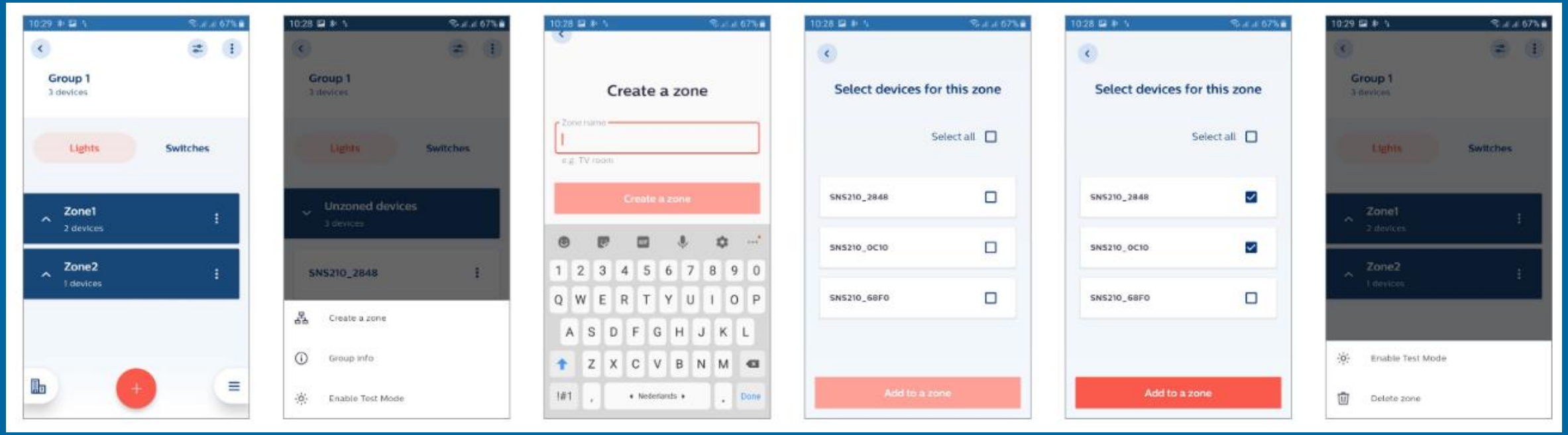
| Parameter Name | Default value | Range | Description |
|---|---|---|---|
| Field task level | 100% | 1 – 100% | Maximum trim level of power level of the luminaire. |
| Eco-on level | 100% | 1 – Task Level | A configurable switch-on light level. This parameter enables energy-savings and its value should be a percentage level between the field task level and background light level. |
| Background light level | 20% | 1 – Eco on Level | is the lowest dim level and used when space is not occupied. |
| Daylight based control | Enabled | Enabled/ Disabled | Turn daylight control on or off. |
| Occupancy based control | Enabled | Enabled/ Disabled | To enable/disable occupancy detection |
| Occupancy mode | Auto on / Auto off | Auto on/off; Manual on/ off; Manual on/Auto off | Different modes to maximize lighting control behavior with use of wireless switches |

| Parameter Name | Default value | Range | Description |
|---|---|---|---|
| Group occupancy sharing | Enabled, Background light level | Background light level or Eco-on level | is a configurable feature to allow SNS210 to share its local occupancy detection status with other SNS210 nodes in the group. As long as presence is detected within the group, the luminaires stay on at the Background light level/Eco-on level (configurable) in non-occupied areas. |
| Hold time | 10 min | 2 – 100 minutes | is the time period from the point at which the last movement has been detected (e.g. when last occupant left the room). |
| Prolong time | 10 min | 2 – 100 minutes | The time for which lights remain at the background level before turning off. Time can be configured from 7 – 100 minutes. |
| Infinite prolong time | Disabled | Enabled/ Disabled | When enabled, lights continue to stay on background level and do not switch off. |
| Grace fading | 10 sec | 1 – 25 seconds | is the dimming transition time from the Eco-on level to the Background light level. |

Note: These default values will only be added after SNS210 MC is added to wireless group. Otherwise the light will just stay on.

# Zoning

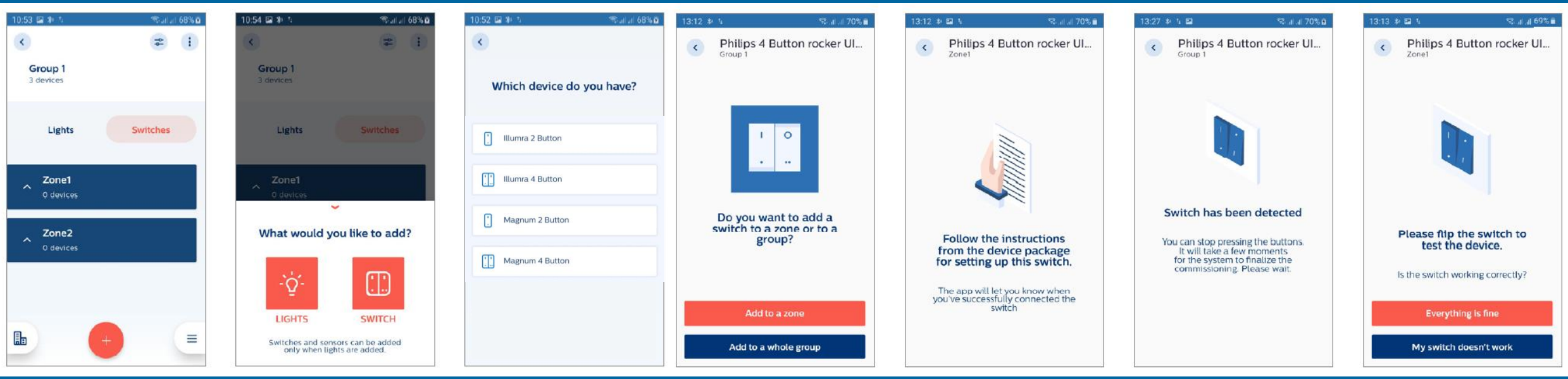
*Sequence flow*




- A group of lights can be split into different zones
- Each zone can be controlled by a dedicated wireless switch
- Maximum of 5 zones in a group

# Add wireless switch

*Sequence flow*




- Only wireless Zigbee Green Power (ZGP) switches from Illumra or Magnum Innovations can be added (same as what are available today)
- Must add SNS210 MC first then switch(es)
- Maximum number of lights in a group is 30 when there is 1 or multiple switches
- Up to 5 switches (all from the same brand) can be added within a group
- Maximum of one 4-button switch per zone

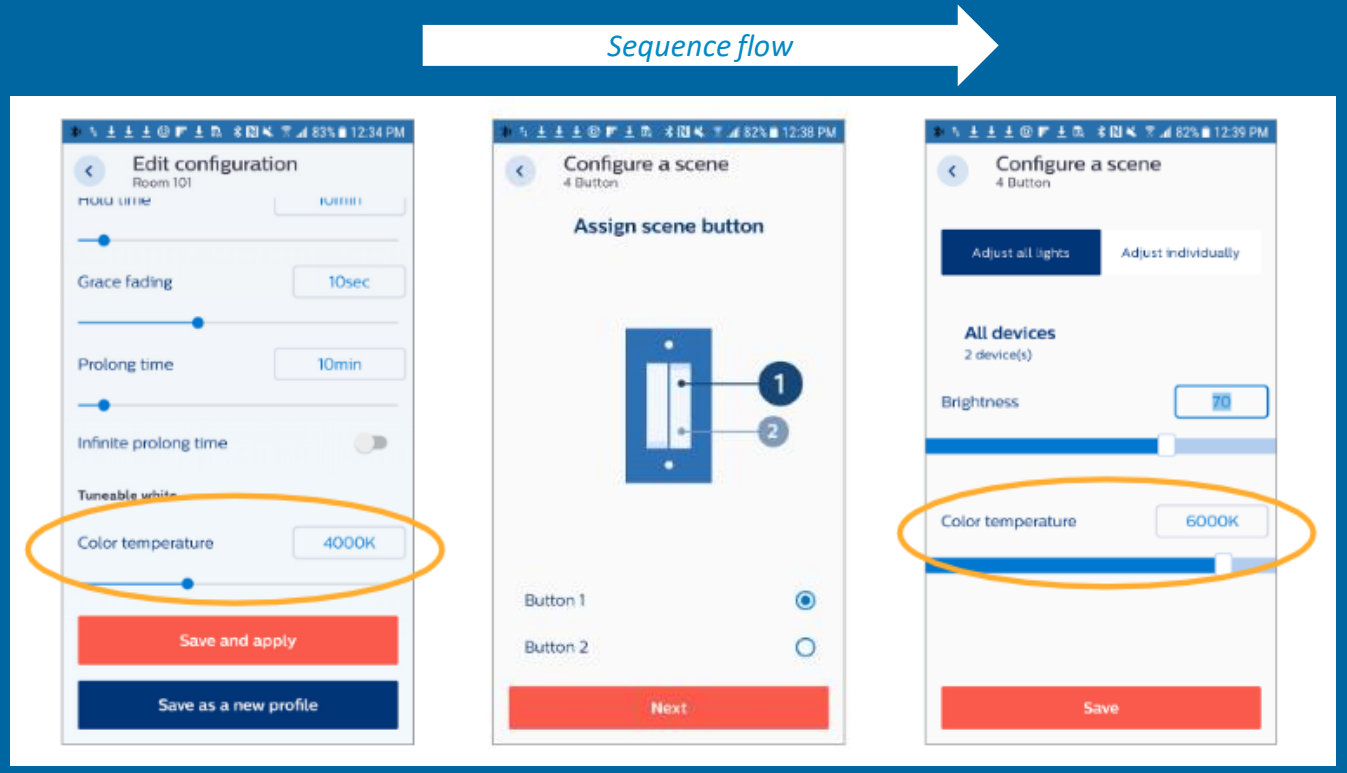
# Wireless switch commissioning cheat sheet

1. Set the wireless switch to commission mode by pressing the designated button of your choice
2. Execute the long-short-long sequence below to enter the commissioning mode:
   a. Press and hold the designated button (from Step 1) for > 7 seconds and release it
   b. Press and hold the same button for < 2 seconds and release it
   c. Press and hold the same button again for > than 7 seconds and release it
3. App will provide confirmation when a switch is added successfully
4. (If needed) To change the radio channel from default
   a. Short press the designated button (from Step 1) once to reset to channel 11
   b. Short press the designated button again until the light blinks (when an open channel is found)
   c. Exit by pressing any other button

| Channel ID | Lower Frequency | Center Frequency | Higher Frequency | |
|---|---|---|---|---|
| 11 | 2404 | 2405 | 2406 | ← Default |
| 12 | 2409 | 2410 | 2411 | |
| 13 | 2414 | 2415 | 2416 | |
| 14 | 2419 | 2420 | 2421 | |
| 15 | 2424 | 2425 | 2426 | |
| 16 | 2429 | 2430 | 2431 | |
| 17 | 2434 | 2435 | 2436 | |
| 18 | 2439 | 2440 | 2411 | |
| 19 | 2444 | 2445 | 2446 | |
| 20 | 2449 | 2450 | 2451 | |
| 21 | 2454 | 2455 | 2456 | |
| 22 | 2459 | 2460 | 2461 | |
| 23 | 2464 | 2465 | 2466 | |
| 24 | 2469 | 2470 | 2471 | |
| 25 | 2474 | 2475 | 2476 | |
| 26 | 2479 | 2480 | 2481 | |

Zigbee channels and their radio frequency (MHz)

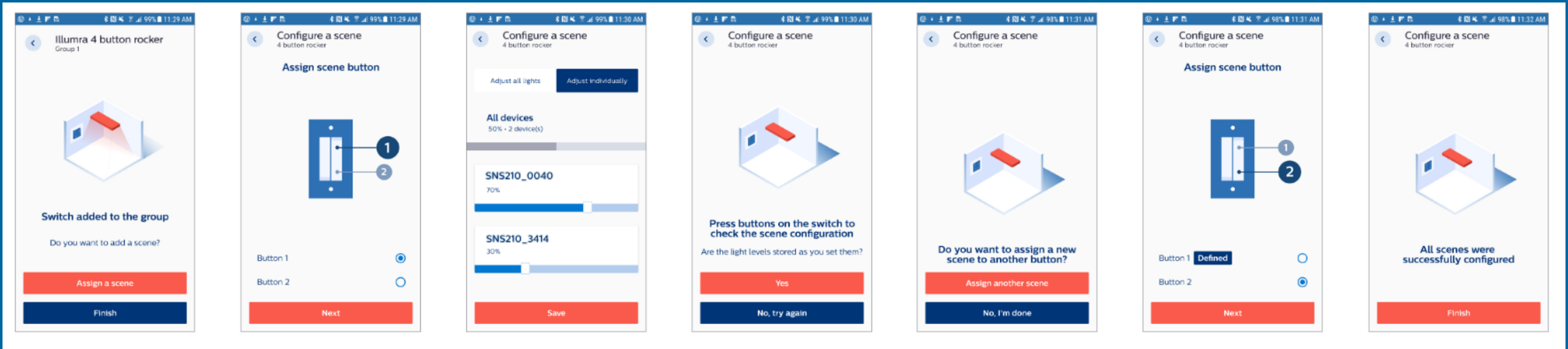
# Configuring CCT level




- Require Advance FlexTune SR driver and CCT-tuning LED module
- Color temperature slider will appear automatically
- Up to 2 scenes can be configured for each wireless switch
- All fixtures in group/zone must be FlexTune (i.e. cannot mix-match)

# Configuring scenes

*Sequence flow*

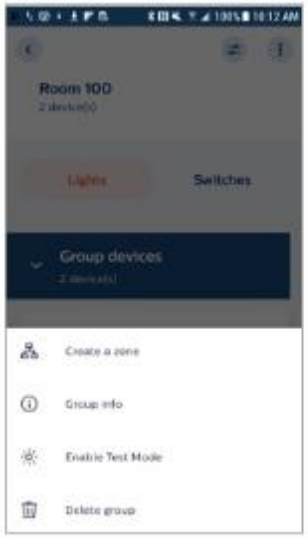



- Require a compatible dual-rocker (4 buttons) Illumra or Magnum Innovations Zigbee wireless switch
- Up to 2 scenes can be configured for each wireless switch
- Up to 5 switches (from the same manufacture) can added to a group

# Energy reporting*

*Sequence flow*









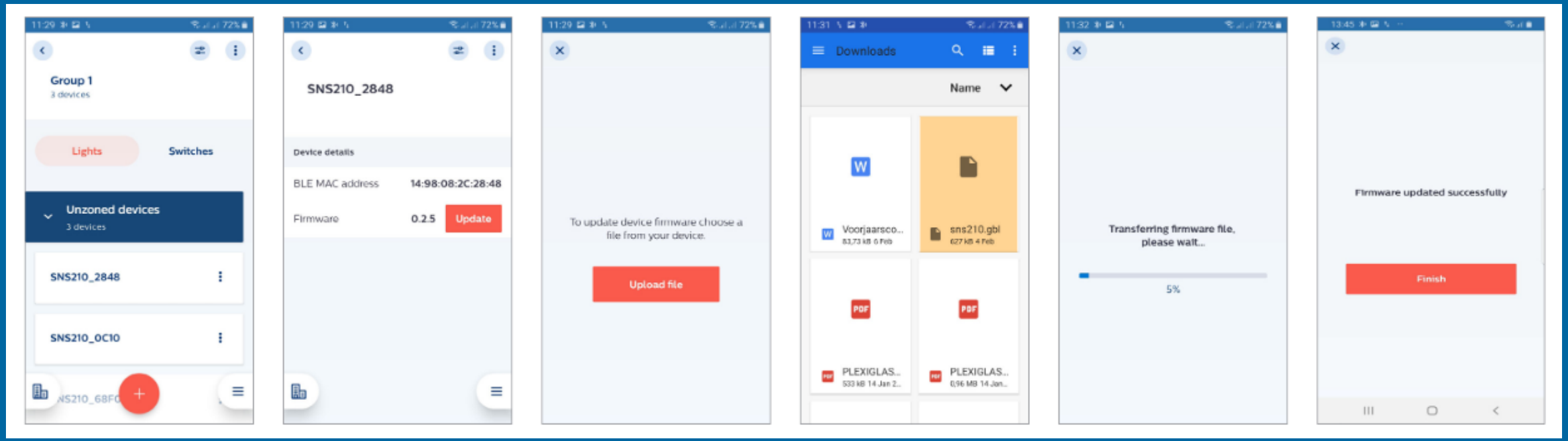
Energy report example

| User ID | Project Name | Group Name | Timestamp | Energy Used (kWH) | Selected Device ID | Number of Operative Fixtures in Group | ID of all Operative Devices in Group |
|---|---|---|---|---|---|---|---|
| username@xyzmail.com | Building HTC 1 | Room 100 | 2020-04-13T09:17:57.899-05:00[America/Chicago] | 43:347 | 14:70:A0:30:58:C8 | 2 | 14:70:A0:30:58:C8, FC:D8:A0:BC:44:90 |
| username@xyzmail.com | Building HTC 1 | Room 100 | 2020-04-13T07:44:25.276-05:00[America/Chicago] | 21:872 | 14:70:A0:30:58:C8 | 2 | 14:70:A0:30:58:C8, FC:D8:A0:BC:44:90 |
| username@xyzmail.com | Building HTC 1 | Room 100 | 2020-04-12T20:40:16.018-05:00[America/Chicago] | 0 | 14:70:A0:30:58:C8 | 2 | 14:70:A0:30:58:C8, FC:D8:A0:BC:44:90 |

* Energy reporting is supported for up to 20 SNS210 MC

# Over-the-air (OTA) firmware update for SNS210 MC

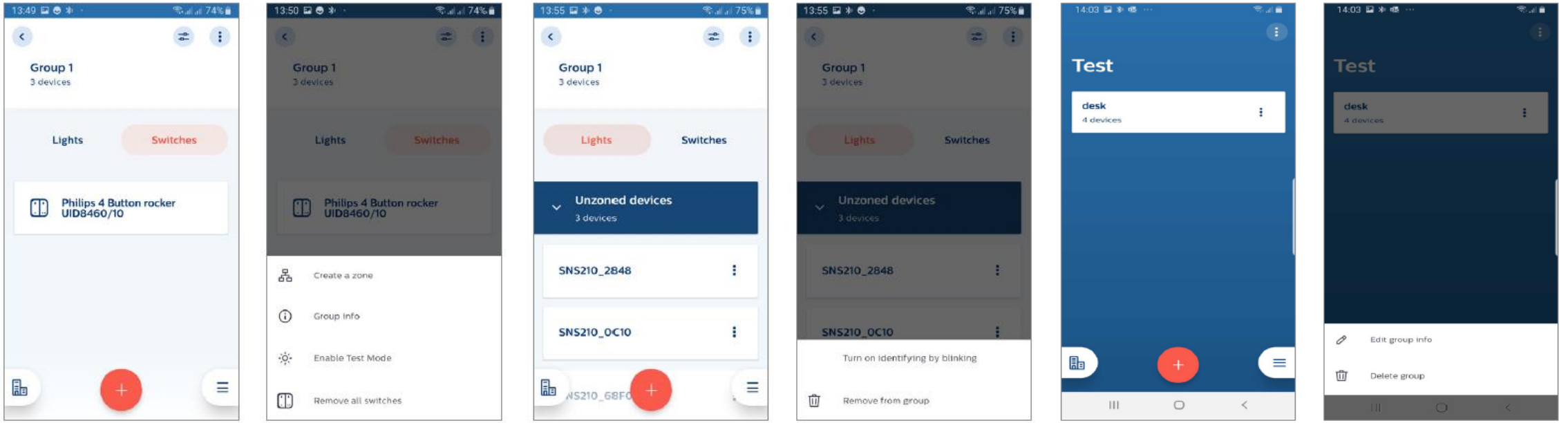
*Sequence flow*




- Firmware file (.gbl) must be downloaded to the smartphone
- Typical upgrade time is 3 to 7 minutes *per sensor* (at initial launch)
- At CR SNS210 MC will have firmware 1.1.16
- User action is required to download the file (not automatically)

# Remove/Reset devices (standard method)

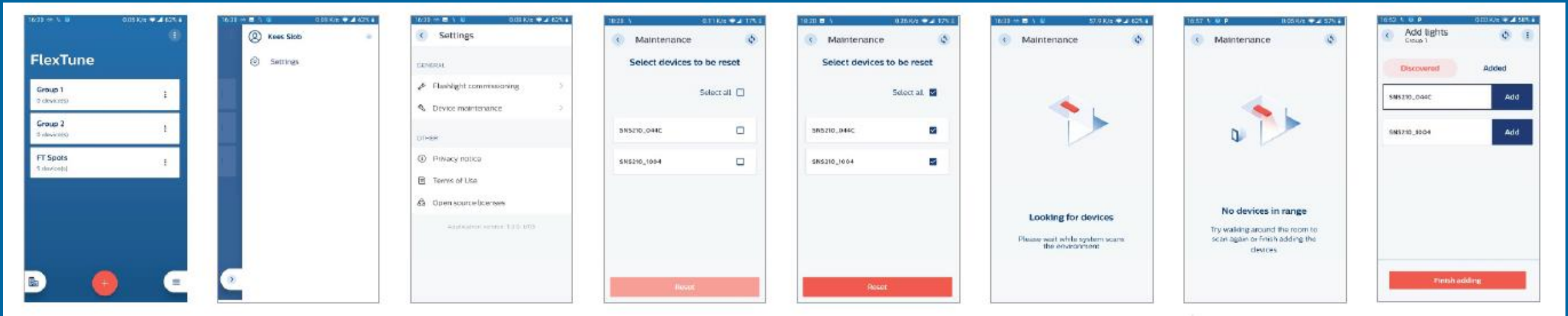
*Sequence flow*




- Once SNS210 MC are set by a user they cannot be used by another user (a security feature)
- To remove/reset SNS210 MC, it first need to be “released” from existing installation; they will go back to the factory mode
- For removal of a switch, all SNS210 MC controlled by this switch need to be in range of the commissioning smartphone and multiple attempts are allowed (e.g. 10 at a time for 3 times)

# Remove/Reset devices (safe mode)

*Sequence flow*




- For resetting only when the smartphone used to commission system is not available (otherwise use the standard method)
- Light must be on for more than 15 seconds
- 5 cycles of turning light on/off then scan with “Device Maintenance” to discover SNS210 MC in the safe mode

# Known limitations at CR

- **WARNING** - Philips MasterConnect app stores all the relevant information associated with a project/profile locally on a phone. Until cloud backup feature is arranged (with a future App update), project/profile data resides only locally on the phone. This phone with App and project/profile data needs to remain accessible for making any changes to the installation.
- When daylight based control is switched on and no calibration is initiated after configuring, the light output adjusts approximately to 500lux times the % value set for the Eco-on level. Illumination is set for a reference office situation. It is an estimation; the precise level depends on the sensor mounting and amount of light reflecting from surfaces in the field of view of the sensor. Depending on the settings the light level can then be even higher than the Field Task level. It is only limited by the operating current set at the driver. Different targets of the automated behavior in response to occupancy and daylight might cause unwanted light changes. To avoid this, it is recommended to complete the calibration.
- When occupancy sharing is disabled the sensors of a group still don't work standalone: all lights of the group still go to Eco-on level when occupancy is detected. Only granular dimming does not occur.
- When occupancy sharing is disabled, the use of manual override (scene recall) in combination with presence detection can result in unexpected light behavior: lights that detect occupancy might stay on even if no-one is in the room anymore.
- It is not supported to mix tunable white fixtures with non-tunable white fixtures in one network.
- In a group of lights all SNS210 MC sensors should be operated with the same firmware version. A mix of firmware versions can cause unpredicted behavior.
- Circadian Rhythm does not work in Manual On/Manual Off mode.
- At the moment it is not possible to edit and delete configuration profiles. To store a new configuration a new profile should me made.
- Currently it is not possible to reset a network in case the smartphone with the lighting configuration is lost or broken. See the Coming Soon section on page 42.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