Avi-on Pro: Detailed Workflow for Large or Complex Projects

How do you commission Avi-on controls with Avi-on Pro for Mac + ZoneScanner?

Step 1) Plan Project & Timeline: Schedule Avi-on Assistance in Advance

For Pre-Paid Startup:
Schedule an Appointment
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For DIY Startup:
Watch How To Videos
—
For All Projects:
Read Wiring Diagrams

Schedule any remote or onsite commissioning, App training, or pre-wire meetings
Scan QR at right >>>
Or, go to Avi-on.com/Contact
or text/call (877) 284-6689

Avi-on.com/Contact

Scan QR code at right >>>
Wiring Diagrams
Product Data Sheets
How To Install Videos
Commissioning Videos

www.Avi-on.com/Resources

- LTE RAB is strongly recommended for remote assistance on large scale or complex projects and/or for remote claiming functionality. Mobile Commissioning App does not support remote claiming
- Wi-Fi RAB is limited to projects < 50 Avi-on devices

Step 2) Gather Key Controls Info

- Building and energy codes such as emergency UL 924, automated light sensing (ALS), and/or occupancy/vacancy
- (If applying for utility rebates) Energy savings targets: before and after project baselines
- Lighting levels such as high- and low-end trim
- Sensor zones and order of operations
- Wall station locations and reasons for override

Step 3) Download & Update Your Avi-on Digital Toolbox

Download *Mobile Commissioning App* From App Store

The *Mobile Commissioning App* comes in handy during large scale projects

iTunes (iOS) Google Play (Android) App Overview

Login or Register New Account

Scan QR for How to Video

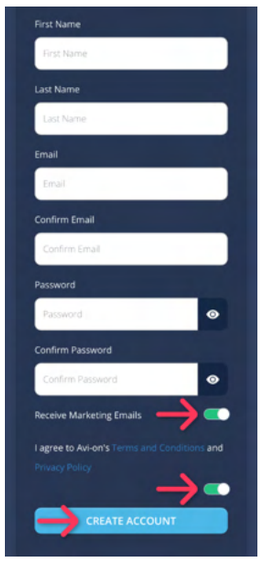
Avi-on is a secure controls platform where every user has a password-protected account and Location Managers are able to manage security for their Avi-on Locations

ADDERS or NEW PROJECTS SHIPPED "SETUP"
Location Already Created

- Get access to EXISTING location from Project Manager
- Or, for projects with pre-paid Warehouse Setup, find location information included in shipping docs
- Location managers can manage user access or transfer their locations using Location.Avi-on.com

NEW PROJECTS: No Location Created

1) Open *Avi-on Mobile App* or *Avi-on Pro*
2) Enter your VALID email and info shown at right >>>
3) IMPORTANT: Select "yes" to Bluetooth AND location pop-ups
4) Check your account's email box for verification email and click verification link to complete the registration process
5) Create a new location for the project



Schedule *Avi-on Pro* Training & check that your equipment is in good condition & up to date

New to Avi-on Pro? Please plan ahead

- **Several weeks BEFORE beginning your project,** contact commissioning@avi-on.com to apply
- In addition to training, purchase is required of a Mac Laptop + Pro USB Dongle for Avi-on Pro. *PCs do not have the Bluetooth quality that Macs do, so there is no PC version of Avi-on Pro*

Already have Avi-on Pro? Get the latest version

- Schedule an *Avi-on Pro Refresher Training* to learn about the latest features
- Check your digital equipment: launch and login to *Avi-on Pro for Mac Laptop + Avi-on Pro USB Dongle (there is no PC version)* (make sure Dongle is BG version)
  - Mac must be recent, in good condition and on current OS

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- Avi-on Pro will automatically update your dongle once connected. It will also prompt you if a new version of Avi-on Pro is available and will let you update from there.

Download & Setup the *ZoneScanner App*

ZoneScanner

Scan Avi-on QR Stickers and Assign Them to Zones Using *ZoneScanner App*

- Login to the Avi-on Mobile commissioning app (using your credentials from above)
- Navigate to the location that you would like to access using the Locations tab
- Select the "Join Location with ZoneScanner App" option. This will provide you with a link to the ZoneScanner App and a 4-digit code to login to that location
- Login to the ZoneScanner App using the 4-digit code

- Enter zones into the *ZoneScanner App*
- Pay special note to any occupancy/vacancy or Daylight Harvesting (ALS) code requirements when placing daylight or motion sensors
- See separate *ZoneScanner* instructions for more details

Download ZoneScanner App ZoneScanner How To Video

Assemble Added Tools

Put these added tools into your backpack

- Mac Laptop
- Avi-on Pro USB Dongle
- USB-C to USB-A adaptor cable for Pro Dongle
- Active data plan on a mobile hotspot
- Voltage tester
- 'Brick' charger for your phone

Step 4) Host Pre-Wire Meeting with Key Decision Makers

Meet in advance over phone or zoom, or in person

1) **Who is the project manager? Who is the controls project expert?**
2) **Timeline: is this a phased roll-out? What is the overall schedule for installation & startup?**
3) **How or when are controls showing up onsite?**
   a) When is what controls product shipping, and where will it arrive?
   b) Are fixtures coming pre-installed from the manufacturer or installed onsite?
   c) Are wall stations AC or battery-powered (more or less wire)? Do we need to cut drywall to install them?
   d) What building and energy codes are important to follow on this project?
   e) Is the customer expecting special settings in certain offices or zones?
4) **Why use the ZoneScanner App** during installation to reduce install time?
   a) How the Device Name on the App will be the last 4 digits of the QR sticker
   b) Why installers need to have data ON, and/or sync data frequently
5) **Are there building security or procedures to follow to enter/leave the site?**

Step 5) Host Onsite Installer Training

1) **Designate an Avi-on controls liaison to coordinate questions & details**
   a) Explain what Avi-on controls are being installed & why
   b) Note low voltage power wires are usually red & black; XFAC high voltage are black & white with a pink AC load; 0-10V dimming are gray (-) & purple (+); CCT are gray (-) and orange (+)
   c) Share link to wiring diagrams at **Avi-on.com/Resources**
2) **Share zones and locations where Avi-on controls will be installed & why**
   a) For ZoneScanner projects: each installer practices scanning Avi-on QR stickers & assigning zones and using last 4-digits of QR sticker
   b) N*on-ZoneScanner projects:* practice documenting last 4-digits of QR sticker in phone's Notes App
3) **Check smart phones & data connection:** make sure everyone has a data plan or Wi-Fi, that any Apps are logged in and connected
4) **Make a plan to install and connect any LTE/Ethernet or Wi-Fi Bridges**

Step 6) Install Avi-on controls

Power & Connect Network Accessories

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LTE RABs are Avi-on's newest & most powerful commissioning tool

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See separate detailed instructions for each type

- **NTMs** keep clock time and are required for schedules, sunrise/sunset, & other settings
- **LTE/Ethernet RABs** enable remote startup & commissioning assistance; shipped "plug & play"

NTM (recommended) **LTE/Ethernet Bridge** (preferred) **Wifi Bridge** (< 50 nodes)

- **For Paid Commissioning Assistance,** an LTE RAB enables an *Avi-on Controls Technician* to

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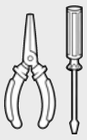
of RAB	assist in starting up project BOTH remotely AND in parallel with electricians/installers, saving time and speeding up the completion of the project • **For set-up, the Wi-Fi RAB** needs to be within range of the Avi-on lighting network and the local Wi-Fi router. Recommend doing Wi-Fi RAB setup in an area with several powered Avi-on Bluetooth devices, and then moving the RAB to a secure location. *If IT will not allow Wi-Fi, you will need to order and substitute the LTE/Ethernet RAB*
Recommended **Scan & Install Fixtures Using *ZoneScanner App***	• *Optional:* If you haven't already, setup the ZoneScanner app using the Digital Toolbox instructions above • The ZoneScanner App enables installers to 'scan & install:' scan Avi-on product QR codes & assign them to specific zones • The ZoneScanner App can speed project startup for projects with in-fixture controls and/or a large number of devices • The ZoneScanner will assign the MAC address from the product's QR sticker as the Device Name • See separate instructions for automatically importing data to Avi-on Pro
Install Wall Stations, Sensors, & Other Avi-on Devices 	• Click QR code at right for wiring diagrams and product info >>> **www.Avi-on.com/Resources**

Step 7) Power SMALL Areas → Add ('claim') devices to the Avi-on account with App

What Do the Shipping Documents Say? *Is your project 'setup' and are some of your devices 'pre-claimed'?*	**NEW PROJECTS or ADDERS** **Location Already Created** **"Pre-Paid Warehouse Setup" on PO** • **Setup** = Pre-Claimed Controllers (and RAB) = IFAC, LVFA, and XFAC already added to the project location • **Location information included in the shipping documentation** • **When you wire and power "claimed" devices, then the small onboard LED will NOT be flashing** • While Setup shortens startup time, field commissioning will still be required LTE/Ethernet RABs are often "setup" • Sensors, wall stations, and other devices require claiming in the field • Any setup ("pre-claimed") devices can only be used in the specified location. To use the devices in other locations, use the *Commissioning App* to REMOVE from the project's location. • If the device ends up in the wrong physical location (particularly in multi-building rollouts), field un-claiming and re-claiming will be required, increasing commissioning cost	**NEW PROJECTS** **No Location Created?** **"Setup" is not listed on the PO** • **No setup** = Unclaimed Devices • Ask the project manager for access to EXISTING locationOR create a NEW location. • VERY IMPORTANT: Only use 1 location per building. If devices are added to multiple locations in the same building, unclaiming and reclaiming will be required, increasing commissioning cost • **When you wire and power "unclaimed" devices, then the small blue LED on the controller will be FLASHING IN SETS OF TWO** • When devices are "unclaimed," then they can be directed to any project • The controls technician/installer will ADD all devices to the location as part of the startup and commissioning steps in this document

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Import *ZoneScanner Data* into *Avi-on Pro*

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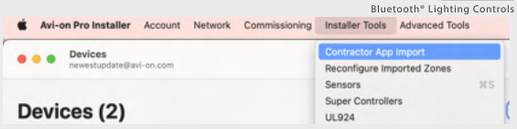
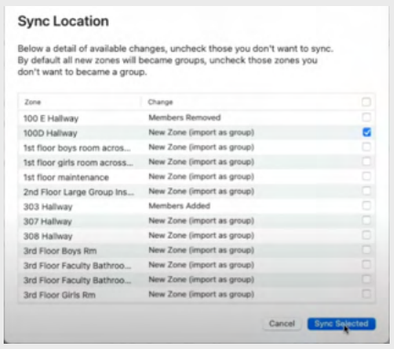
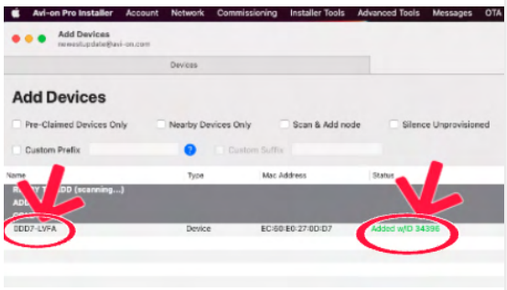
If you are unable to "see" all of the devices to be imported, ask all *ZoneScanner* users to connect to Wi-Fi and sync their *ZoneScanner Apps* with the cloud

- **Avi-on Pro ONLY:** import zones & fixture assignments for in-fixture controls from the *ZoneScanner* App using the *Avi-on Pro* "import" menu
- See separate workflow instructions for ZoneScanner
- Zones cannot be imported to the location with the *Avi-on Commissioning App. The zone scanner output .CSV file can be used as a handy reference for fixture locations and is particularly useful for remote troubleshooting and support after project install*





Avi-on Pro ONLY: ADD Avi-on devices to the project's Avi-on location



You can verify that the devices were added in a couple of places

- Look on the "Add Devices" page
- Move back to the Devices Page to verify that the device was added by clicking the "sun" icon. This causes a powered device to blink OFF and then back ON.
- **For projects using Avi-on Pro and a LTE RAB,** a remote technician can use "remote claiming" and add devices while offsite.
  Remote claiming works best if you have an onsite assistant to verify details as you go along

Step 8) Program Settings & Sensors

Program, Customize, & Refine Controls Settings

Choose the App + Bridge Combo that Fits Your Project Size & Complexity

- **Avi-on Pro is designed for projects of any size or complexity**
  - When there is an LTE Bridge installed, much of project startup can be done onsite or remotely by a technician using Avi-on Pro and with assistance from onsite personnel. Wi-Fi RABs can be used on projects with < 50 devices.
  - If there is no Bridge installed, the Controls Technician must be onsite using Avi-on Pro with the Avi-on Dongle or, for simple changes on projects < 200 devices, with the *Mobile Commissioning App*
- **Mobile and Pro do not have the same features.** The larger and more complex the project, the more you will need Avi-on Pro.
- **If you find either App to be slow, first check your data connection, then reduce the number of devices that you are programming**
  - An LTE/Ethernet RAB on Ethernet is most likely to have the fastest connection, then LTE RAB on cellular, followed by a Mobile Hotspot with data plan, then a Wi-Fi RAB, then a data plan on a phone or tablet
  - Cut the number of devices that you are interacting with by half. Keep cutting until your data connection is able to keep up with the number of devices that you are processing

Avi-on Pro Commissioning

Workflow with ZoneScanner

ZoneScanner

- In ZoneScanner App, create zones, "scan & install", then import data to Avi-on Pro per instructions above
- Create groups
- Associate imported zones with groups
- Associate groups with sensors and wall stations
- Adjust dimming, trim, and/or color
- Set and adjust occupancy, vacancy, and/or sensor sensitivity
- Establish overrides (if any)
- Add or adjust schedules or scenes
- Do any controls diagnosis and optimization
- Test and finalize

Workflow without ZoneScanner

- Create groups
- Add devices with groups
- Associate sensors and wall stations with groups
- Adjust dimming, trim, and/or color
- Set and adjust occupancy, vacancy, and/or sensor sensitivity
- Establish overrides (if any)
- Add or adjust schedules or scenes
- Do any controls diagnosis and optimization
- Test and finalize

Step 9) Request Additional Services from Avi-on.com/Commissioning

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Power & Connect Optional BACnet Link — For BMS or BCS integration	The *Avi-on BACnet Link* is an optional service used to connect Avi-on networks to Building Maintenance Systems or Building Controls Systems (BMS/BCS) BACnet Link setup requires the Avi-on BACnet programming tool (runs on MAC or Windows) and an existing BACnet IP device on the same ethernet LAN as the BACnet bridge. Internet connection is required for the programming tool when setting up the system. Once programmed the BACnet bridge can function stand alone on-site	**BACnet Link**
Schedule Optional Services — Energy Utility Data — Ongoing Support	Notify Avi-on when the project is ready for additional services like **energy data reporting,**, and/or **ongoing maintenance contracts** **Avi-on.com/Contact or Text or Call (877) 284-6689** Avi-on Project Startup/Commissioning provides initial project programming and setup. Reconfiguration changes and/or troubleshooting are covered by Avi-on support contracts	

Step 10) Host Walk Through & Customer Sign-Off

- If desired, use Location.Avi-on.com to manage user access and security for your Avi-on location/s
- Consider offering the customer a maintenance agreement for future updates and reconfiguration

Returns, Orders, Quotes, Pricing, & Billing	***Sales:*** ProSales@avi-on.com ***Orders & Returns:*** PO.RMA@avi-on.com ***Quotes & Pricing:*** QuoteTeam@avi-on.com ***Accounts & Billing:*** AP@avi-on.com **Startup Assistance:** Commissioning@avi-on.com

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