General

* WiFi led on HVAC – Can we light it when connected to transponder? (Yes) Great, we should do this then.
* Include remote On-Off? (Yes) Same as above.
* 3D-printed clip or bracket to tightly install sensor in a defined fixed position. Readings vary depending on where and how the sensor is oriented towards the light source -> fixed position will provide more consistent readings across multiple sensors. (Okay)
* We’re currently using jumper connectors, but the PCB has two STEMMA QT connectors – could these be used instead / is it advisable / or are they for a different purpose? May this is irrelevant, I’m just asking in case it makes the integration into the HVAC units easier. (Lets work on it) This is not strictly necessary, but it’s good to know it can be done if needed for design purposes (e.g. for fitting the sensor unit within a specific shell). (Can be done).

HMI

* rechargeable battery with USB loading port for mobile use? (I do not understand ? ) Currently the HMI does only work when connected a power supply. My question is whether the HMI casing can hold a rechargeable battery so that the HMI unit can be used as a mobile unit. But this is really more a HW issue, so maybe I can solve this on my own. ( Yes it is simple. Just connect a power bank is enough).
* 3D-printed desktop stand (with charging dock) and/or wall bracket. (Why ? ). We need to provide some sort of stand for the unit to be stored, also related to the aove (charging dock). (Making a charging dock by 3D printing require an expert in Fusion 360 or Solid works. So I recommend hire an expert for this.)
* Display should probably be used in portrait orientation rather than then landscape to list higher number of devices. (Possible). OK, we’ll have to adapt it then.
* Does it support “swipe” to page from left to right? This is merely to understand the limitations we have for displaying information on one or more screens/pages. (We can apply Multiple Pages, But not smooth as iPad 😁). OK, smoothness shouldn’t be an issue as the unit will not be used as you’d use an iPad either, but we might need to show more than we can fit on one singe screen, so it’s good to know we can have multiple screens (“swipe” is nicer, but it could also be with a “paging” button allowing you to navigate page-up and down. (Can be done)

Other (this is pending while we check on possible external partners, e.g. Kaiterra).

* Add additional IAQ monitoring sensors outside the device and air ducts
  + **Temp and RH** sensor, i.e. Adafruit SCD-40 - True CO2, or Sensirion SHT40I-BD1B (<https://sensirion.com/products/catalog/SHT40I-BD1B>)
  + **Particulate Matter** sensor, i.e . Adafruit PMSA003I Air Quality Breakout (<https://www.adafruit.com/product/4632> or <https://www.adafruit.com/product/4505>), or Gravity SEN0233 Air Quality Sensor (<https://www.dfrobot.com/product-1612.html>), or Sensirion SPS30 (<https://www.digikey.es/en/products/detail/sensirion-ag/SPS30/9598990>)
  + **Ozone** sensor, i.e. Gravity: Electrochemical Ozone Sensor SEN0321 (<https://www.dfrobot.com/product-2005.html>) or Gravity: Factory Calibrated Electrochemical Ozone Sensor SEN0472 which is 3x the price – not sure why/if needed or justified (<https://www.dfrobot.com/product-2516.html>)
  + **Formaldehyde** sensor, i.e. Sensirion SFA 30 (<https://sensirion.com/products/catalog/SFA30>)

The ultimate objective is to show how IAQ parameters improve while ReSPR’s devices are running. (Can you explain IAQ please ). I think we solved this via WhatApp earlier; IAQ is the acronym for Interior Air Quality, basically measured through the parameters (any really) via the parameters we could monitor through the sensors listed above. (Can be done with available sensors)

The additional sensor(s) is/are fitted within a specific external housing which should be placed somewhere in the room or wall with an appropriate or bracket. (Explain Detail More). As we have previously discussed this is on hold for the moment. The idea is/was to add additional sensors to monitor different IAQ parameters to provide a broader range of air quality information to the user; for the time being our development is merely for monitoring the efficiency of our NCC cell via the light sensor. Although this is needed, it’s only relevant to the maintenance staff. If we were to add further IAQ information along with this, we would also target a broader user base, e.g. people working in an open space office. (Can be done)

Data collected through the sensors is transmitted to the HMI (would it be possible to have multiple HMI?) providing users “real-time” information about relevant IAQ parameters. ( Extra Hardware and WiFi Router Will be required). Just to make sure I got this right: if we want to display the data we’re monitoring on more than just one HMI, we’d need to though WiFi? I.e. The sensor(s) cannot send the data to multiple HMI / or multiple HMIs cannot collect data from the sensors? Is that so? (Yes)

As IAQ sensors and dashboards are not new and “widely” available on the market, this stage of development is on hold, as discussed before. We’ll see if there’s an existing solution on the market which could allow us to integrate our data (the one we collect from our light sensor) together with their own to display it on one same dashboard or UI altogether. I have reached out to Kaiterra with the enquiry but I haven’t heard from them yet. I’ll let you know when they do.

This is what I am looking at: <https://support.kaiterra.com/sensedge> and <https://www.kaiterra.com/sensedge-mini-indoor-air-quality-monitor>. The Sensedge model has an integrated UI, while as the Mini version relies on a web-based dashboard. We had such a system running in our US office; the dashboard was displayed on a big LCD screen installed in an open air office space. If we could integrate our light sensor reading within that dashboard that would be excellent, but I don’t know if that’s possible. <https://www.kaiterra.com/dashboard>.