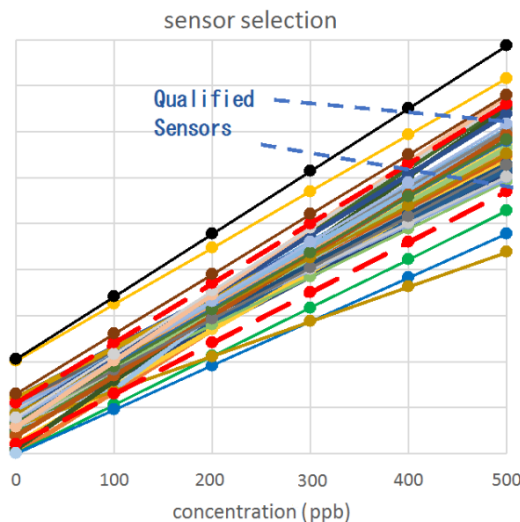


# SCI Sensor Quality Control

SCI's sensor instruments have a rigorous three stage quality assurance and calibration process. In the first stage each individual sensor is challenged with standard gases to screen out low performing sensors. The second stage involves generating calibration files unique to each sensor unit using a custom machine learning algorithm and the sensor's response to complex pollutant mixtures, varying temperature and varying humidity in a controlled test chamber. Once in the field, sensors can be periodically re-calibrated with neural networking algorithms to improve sensor response to complex ambient conditions. This cloud-based calibration can be done automatically during field deployment using existing reference method monitors or with portable instruments.

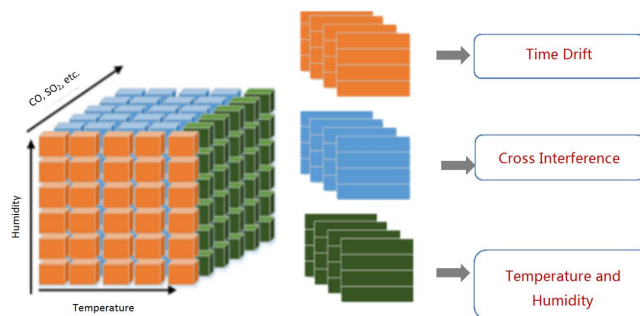
## Step 1. Sensor Selection

Sensors are calibrated using reference standards for the pollutants of interest. Sensors that fall outside of our strict calibration guidelines do not move onto the next phase of calibration.



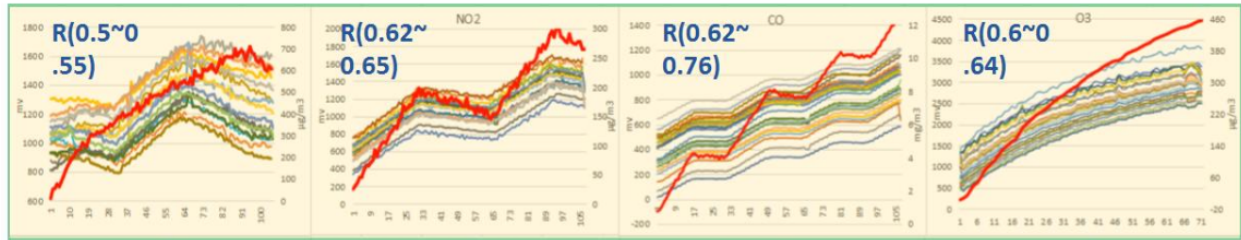
## Step 2. Sensor Instrument Factory Calibration

In this phase each sensor node is challenged with a range of concentrations for each pollutant, any potentially interfering species, and challenged with a range of temperatures and humidity. Each sensor node receives a unique calibration via machine learning.

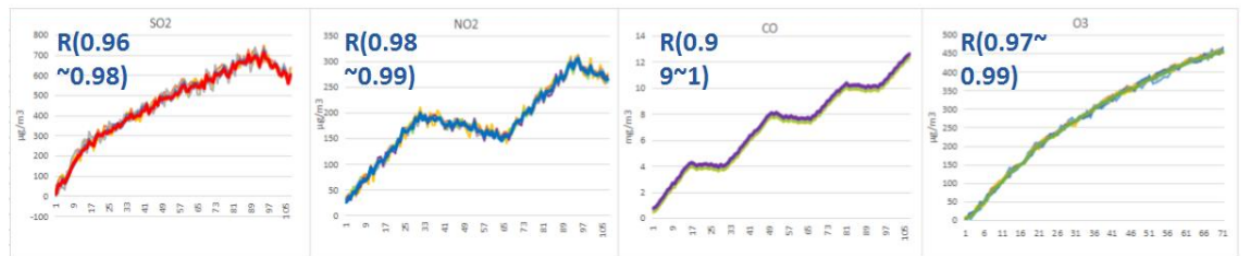


Below are the results that we typically see following our factory sensor calibration procedure.

### Before Calibration



### After Calibration



### Step 3. Periodic Recalibration in the Field

Once Sail Bri Cooper sensors are installed in the field data from the sensors is uploaded automatically to the cloud. Periodically this sensor data can be re-calibrated using data from a nearby stationary reference instrument or data from a portable reference instrument.

