COVID-19 Testing Deployment Strategy

Introduction

This document covers the strategy the Opentrons technical support team will use to install the COVID-19 testing system. The goal of this installation is to install the entire testing system for ***half-plate throughput***. By ***half-plate throughput***, we mean the maximum throughput possible when running 48 samples in the RNA extraction protocol. Once this goal is reached, your support engineer will work with you to determine whether throughput can be increased further and plan further development. Below, you will find an overview of the installation process.

Stages of Installation

There are three stages of installation. Each stage will include 2 major tasks: 1) setting up robots and 2) developing protocols. Each day, your assigned technical support engineer will provide an agenda for the day based on the structure of this installation strategy and progress made in the installation process.

First Stage - 8 Sample Throughput

In this stage, your team will work with technical support to setup one robot in each station, so that by the end of this stage, you will have one robot that runs sample reformatting, one robot that runs RNA extraction, and one robot that runs qPCR prep at 8 samples per run.

Second Stage - Half-Plate Throughput

In this stage, your team will work with technical support to setup 1 robot in each station, so that by the end of this stage, you will have one robot that runs sample reformatting, one robot that runs RNA extraction, and one robot that runs qPCR prep at half-plate throughput.

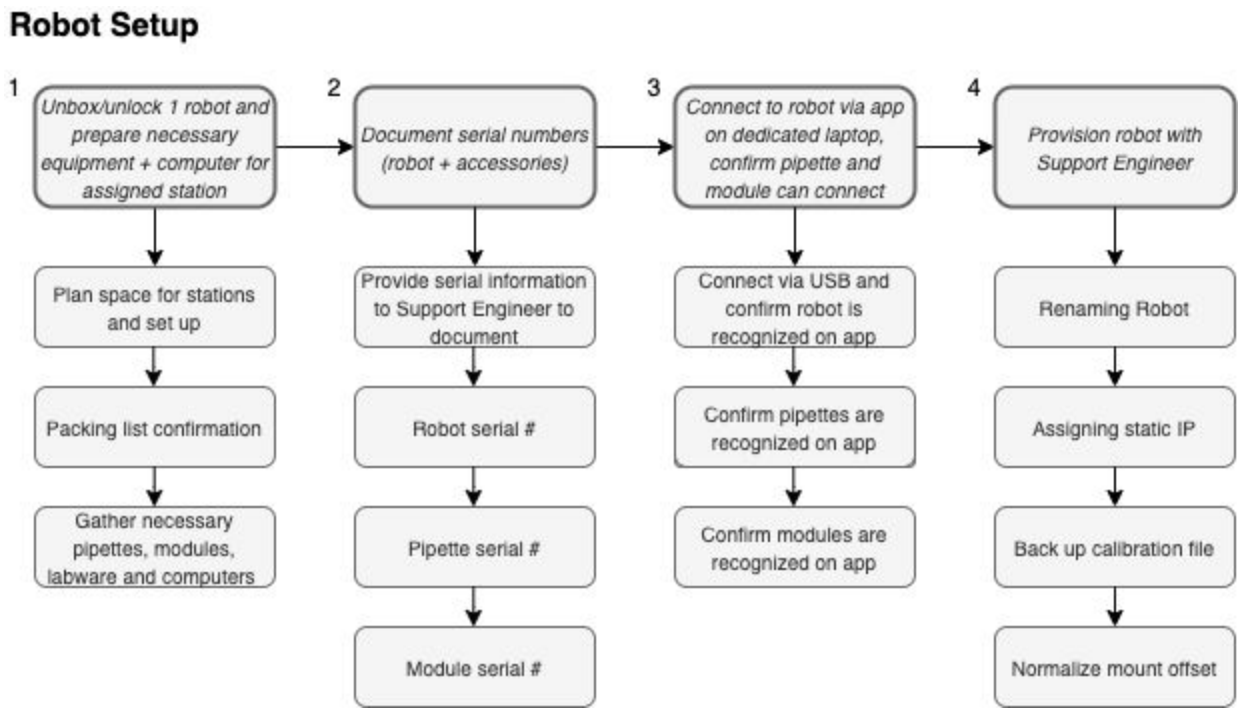
Third Stage - Ramp Throughput

In this stage, your team will work with technical support to setup the last two remaining robots, and ramp throughput from the robots setup in stage 1 for half-plate throughput.

Setup and Development

Robot Setup

“Robot setup” refers to the process of unboxing a robot and all required pipettes, modules, and labware, as well as going through a streamlined setup procedure that the Opentrons technical support team has created. Please look below for a visualization of this process.



Protocol Development

Protocol Development refers to cycles of preparing the protocol for production-readiness. This includes calibrating the robot, testing the protocol for proper movement behavior and basic pipetting with water, and making changes to the original protocol to go through another test cycle. Please look below for a visualization of this process.

Protocol Development