DOCK Challenge

When the team scans the Arrival QR code, the MS assigns a distance tape to measure. The Team must make the measurement, then use the distance value to compute a launch profile. The Team scans the Dock QR code to submit the launch profile. The MS evaluates the launch profile, and returns Success or Retry. On a Retry, the Team scans the Retry QR code to receive another distance tape to measure. On Success, or after 3 failed attempts, the Team scans the Latch QR code to end the challenge.

All messages to the server have the following header field values, unless specified otherwise:

   Content-type: application/json
   Accept: application/json

All content is exchanged in JSON format, unless specified otherwise.

Team   BRATA   Master Server   Pi

Scan Arrival QR Code

HTTP Request

```
POST start_challenge/<station_id>
{
    "team_passcode":  "<passcode>"
}
```

HTTP Response

```
{
    "message":  "Dock using [TAPE=d], [AFT=d.dd],
                 [FORE=d.dd], [FUEL=dd.dd], [F-RATE=dd.dd]"
}
```

Return message to Team

HTTP Request

```
POST start_challenge
{
    "team_name":  "<team_name>"
}
```

Display welcome screen

HTTP Response

Team measures tape, computes flight profile, formats flight profile message

Scan Dock QR Code

```
POST dock/<station_id>
{
    "team_passcode":  "<passcode>",
    "message":  "[T-AFT=ddd.d] [T-COAST=ddd.d] [T-FORE=ddd.d]"
}
```

```
POST data
{
    "aft":  "<aft>",
    "fore":  "<fore>",
    "fuel":  "<fuel>",
    "f_rate":  "<f_rate>",
    "t_aft":  "<t_aft>",
    "t_coast":  "<t_coast>",
    "t_fore":  "<t_fore>"
}
```

```
{
    "message":  "Docking Parameters received!"
}
```

Return message to Team

Team observes flight status display

Display docking animation
Indicate docked or not docked

Not docked

Docked

Team observes that flight attempt is unsuccessful

Scan Retry QR Code

```
POST retry/<station_id>
{
    "team_passcode":  "<passcode>"
}
```

```
{
    "message":  "Dock using [TAPE=d], [AFT=d.dd],
                 [FORE=d.dd], [FUEL=dd.dd], [F-RATE=dd.dd]"
}
        or
{
    "message":  "You have made 3 docking attempts.  Scan
                 the Latch QR code to complete the Challenge."
}
```

Return message to Team

Try again

Finish

Team observes that flight attempt is successful

Scan Latch QR Code

```
POST latch/<station_id>
{
    "team_passcode":  "<passcode>"
}
```

```
{
    "message":  "Docking latches engaged! Continue to next Challenge!"
}
    or
{
    "message":  "Insufficient fuel left for another attempt!
                 Continue to next Challenge!"
}
```

Return message to Team