

## **greenerthumb Design**

### **fan**

**fan** connects its STDIN to the STDINs of listed out-programs and STDOUTs from listed out-programs to STDINs of listed in-programs.

### **message**

**message** is where **greenerthumb** messages from the ICD are defined and the bytes-JSON conversion is implemented.

### **bytes**

**bytes** converts JSON messages from STDIN to bytes written to STDOUT.

### **json**

**json** converts bytes messages from STDIN to JSON written to STDOUT.

### **bullhorn**

**bullhorn** allows data to be sent on a network from publishers to subscribers (3).

### **publish**

**publishes** data from STDIN to all subscribers.

### **subscribe**

**subscribes** to a publisher and write data to STDOUT.

### **sense**

**sense** writes **greenerthumb** JSON messages from sensors to STDOUT. These can be **fanned** into **message/bytes** piped into **bullhorn/publish**. This allows sensors to be excluded (1).

## **air**

**air** senses the 'Air Status Message' (2a).

## **soil**

**soil** senses the 'Soil Moisture Status Message' (2b).

## **log**

**log** logs JSON messages from STDIN to a file. This can be used with **bullhorn/subscribe** piped into **message/json** to log sensed data (4).

## **plot**

**plot** plots **greenerthumb** JSON messages from STDIN. This can be used with **bullhorn/subscribe** piped into **message/json** to plot sensed data (5).

## **process**

**processes** logs to find statistical values.