A Landscape of Events :Wind

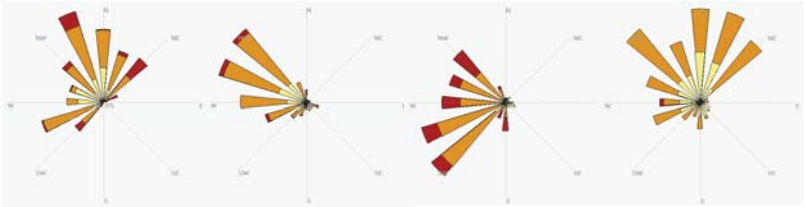
CONSTRUCTING DATE: 03.17.08 – 05.15.08

Project Process

Process I : Virtual	Process II : Pysical	Process III : Hybrid
Data and Methodology	Mechanical System	Aesthetic Components
Python/Processing	Arduino(microcontroller) Step Motor/Water Pump	Corrosion Cement/ Aluminum Laser cut/ CNC

Data Analysis

Process I

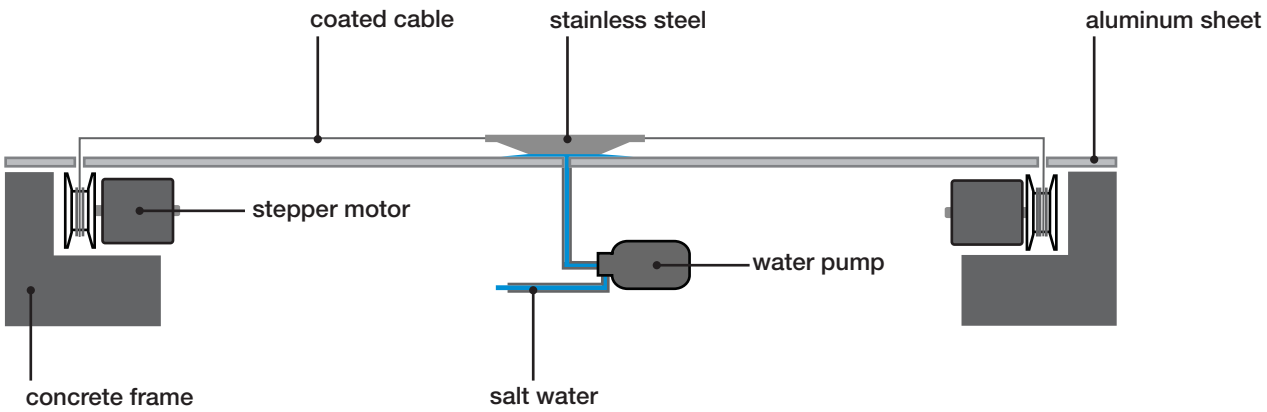


sample data windrose_station 44007 : 1-4 weeks

updating Timeline

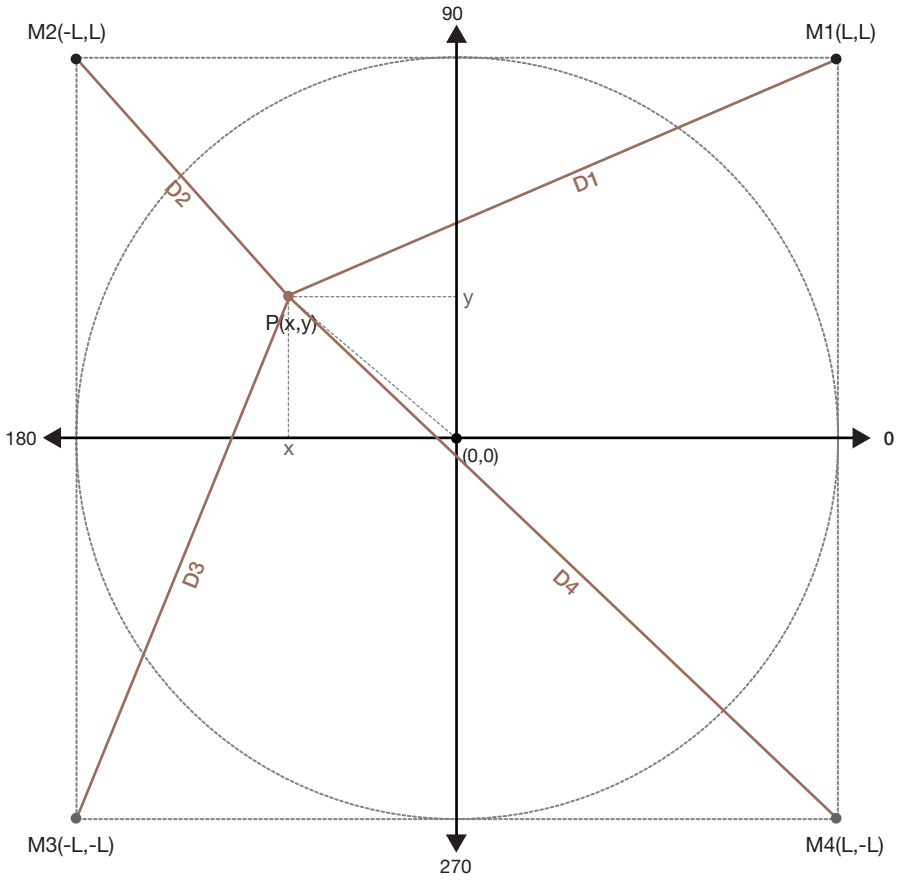
Module Diagram

Process II



MATH

Process II



$D1 = \sqrt{(L-x)^2 + (L-y)^2}$

$D2 = \sqrt{(-L-x)^2 + (L-y)^2}$

$D3 = \sqrt{(-L-x)^2 + (-L-y)^2}$

$D4 = \sqrt{(L-x)^2 + (-L-y)^2}$

[Example Code : D1]

Distances

```
distance_1[i] = sqrt (2 * sq(L) - 2 * L * (map(s,0, MAXsp, 0, L)) * (cos(radians(d)) + sin(radians(d))) + sq(map(s,0, MAXsp, 0, L)));
// i=station, l= a radius of a aluminum sheet, MAXsp= a maximum wind speed
```

Step Numbers

```
int motor_1 = (int) (200 * (dis_1 - (sqrt(2) * L)) / PI * D);
// for a 200step motor
```

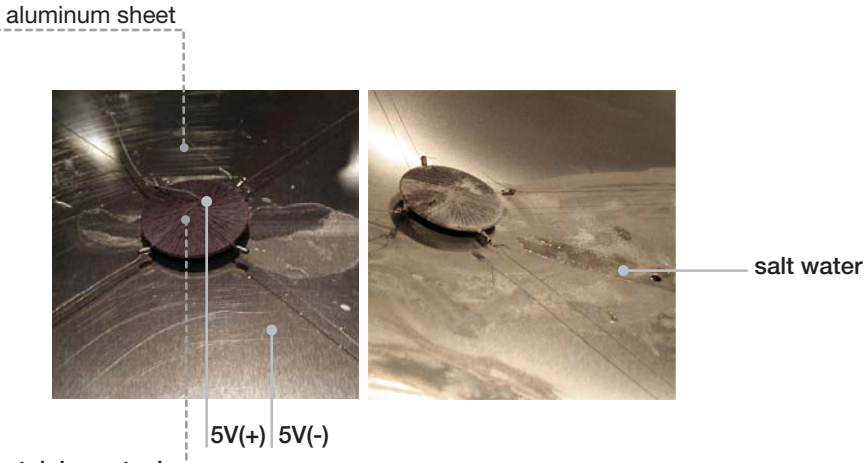
CORROSION

Process III

Table 1
GALVANIC SERIES
In Flowing Seawater

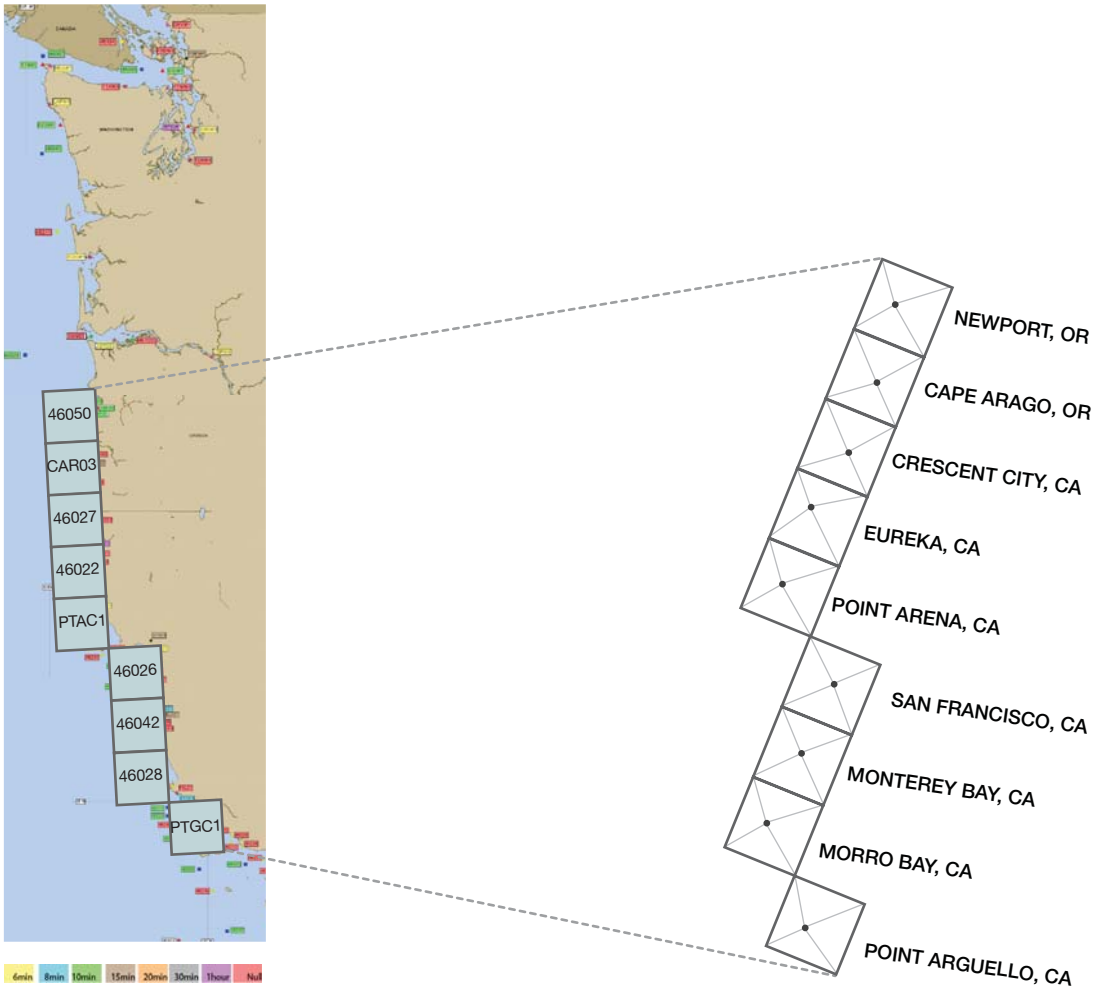
Alloy		*Voltage Range of Alloy vs. Reference Electrode**
Magnesium	**Anodic or Active End**	-1.60 to -1.63
Zinc		-0.98 to -1.03
Aluminum Alloys		-0.70 to -0.90
Cadmium		-0.70 to -0.76
Cast Irons		-0.60 to -0.72
Steel		-0.60 to -0.70
Aluminum Bronze		-0.30 to -0.40
Red Brass, Yellow Brass, Naval Brass		-0.30 to -0.40
Copper		-0.28 to -0.36
Lead-Tin Solder (50/50)		-0.26 to -0.35
Admiralty Brass		-0.25 to -0.34
Manganese Bronze		-0.25 to -0.33
Silicon Bronze		-0.24 to -0.27
400 Series Stainless Steels**		-0.20 to -0.35
90-10 Copper-Nickel		-0.21 to -0.28
Lead		-0.19 to -0.25
70-30 Copper-Nickel		-0.13 to -0.22
17-4 PH Stainless Steel †		-0.10 to -0.20
Silver		-0.09 to -0.14
Monel		-0.04 to -0.14
300 Series Stainless Steels ** †		-0.00 to -0.15
Titanium and Titanium Alloys †		+0.06 to -0.05
Inconel 625 †		+0.10 to -0.04
Hastelloy C-276 †		+0.10 to -0.04
Platinum †	**Cathodic or Noble End**	+0.25 to +0.18
Graphite		+0.30 to +0.20

* These numbers refer to a Saturated Calomel Electrode.
** In low-velocity or poorly aerated water, or inside crevices, these alloys may start to corrode and exhibit potentials near -0.5 V.
† When covered with slime films of marine bacteria, these



MAPPING

Process III



MOLDING





constructing concrete frames



laser cutting for labeling

INSTALLATION

Process III