



community metering

micromecanica s.a.

kWh

1 4 9 3 0

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INDUSTRIA URUGUAYA.

1 FASE

2 HILOS

1kWh.

450

220 V

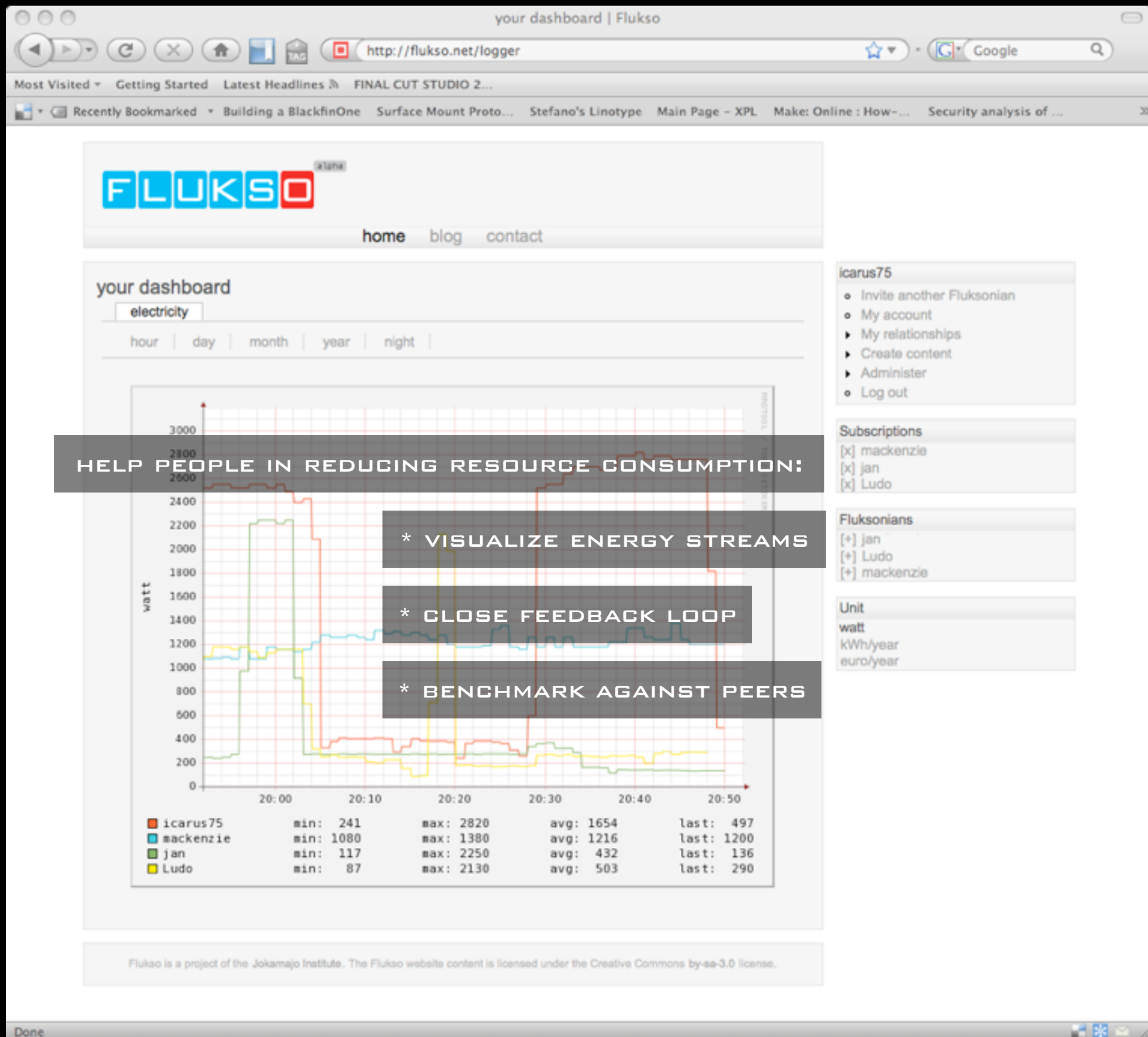
10 A

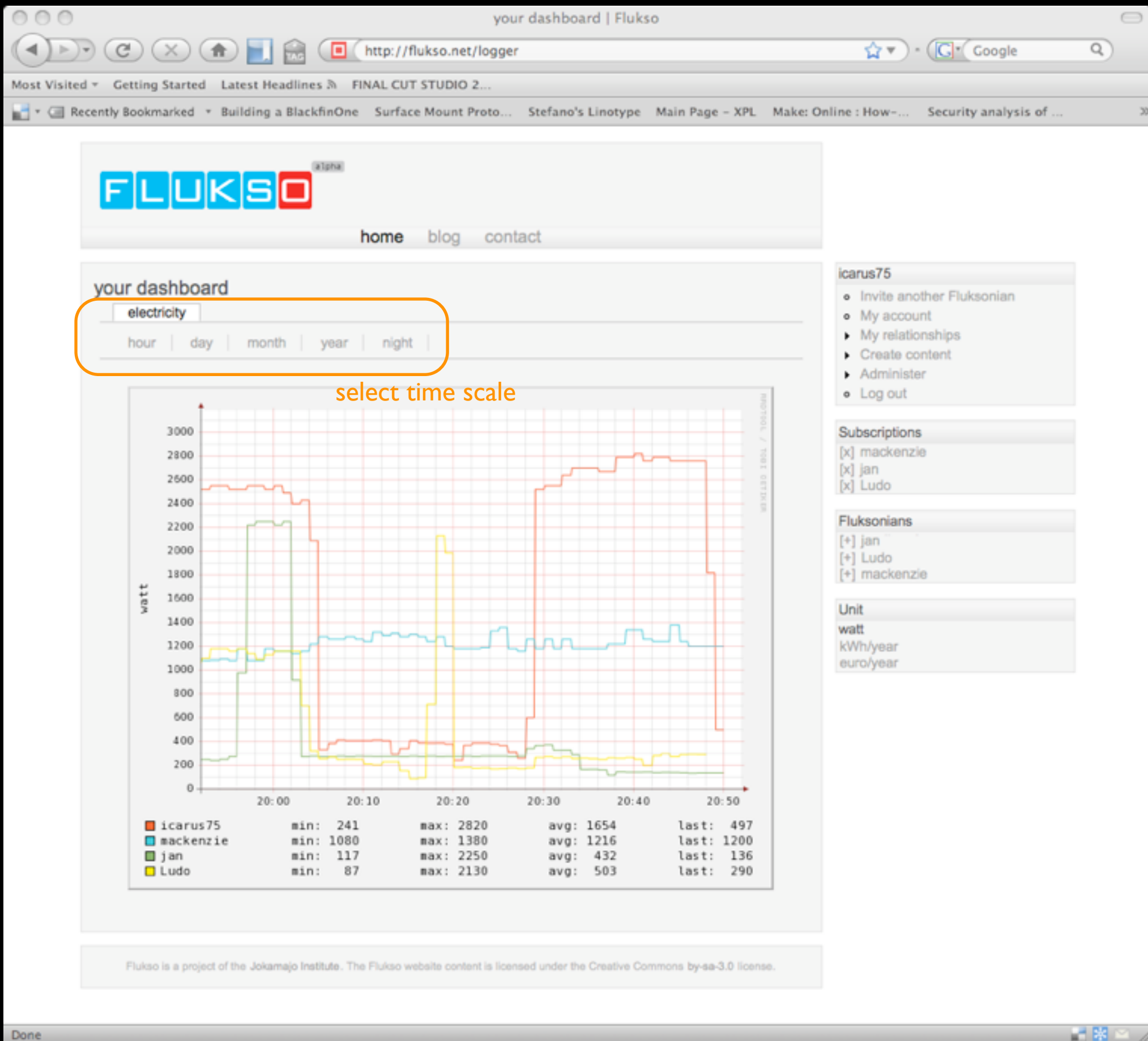
50 Hz I max.

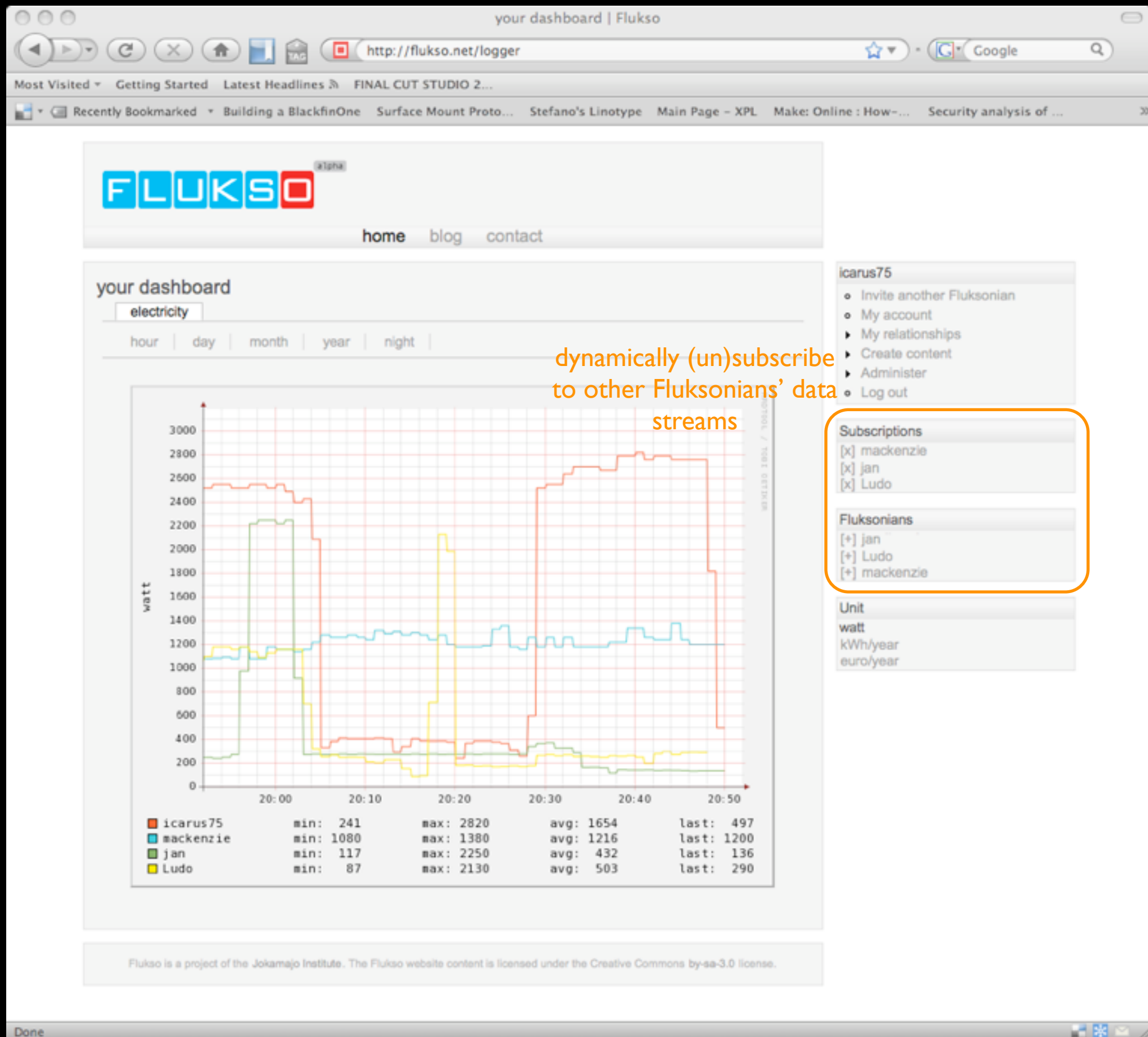
6

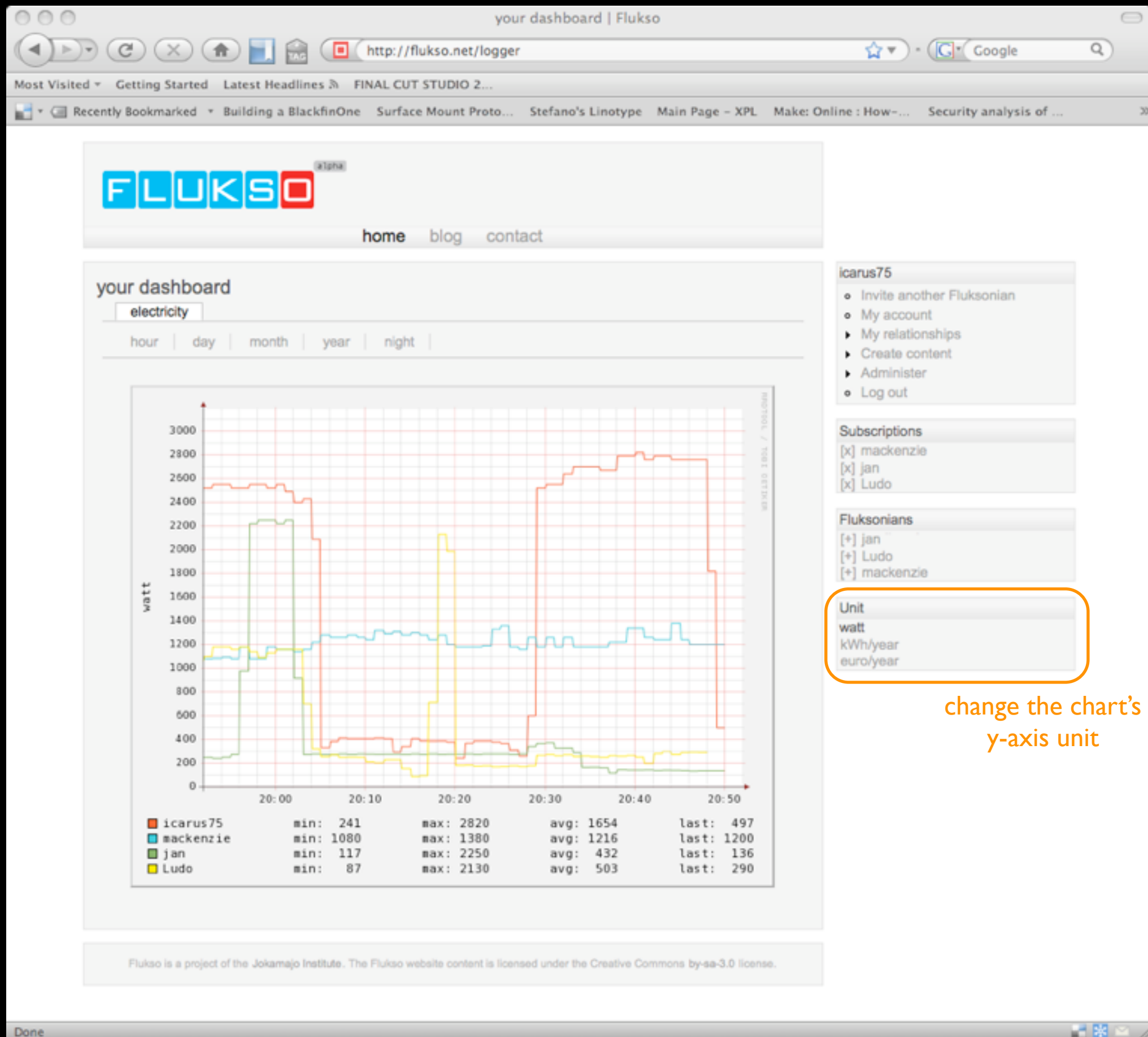


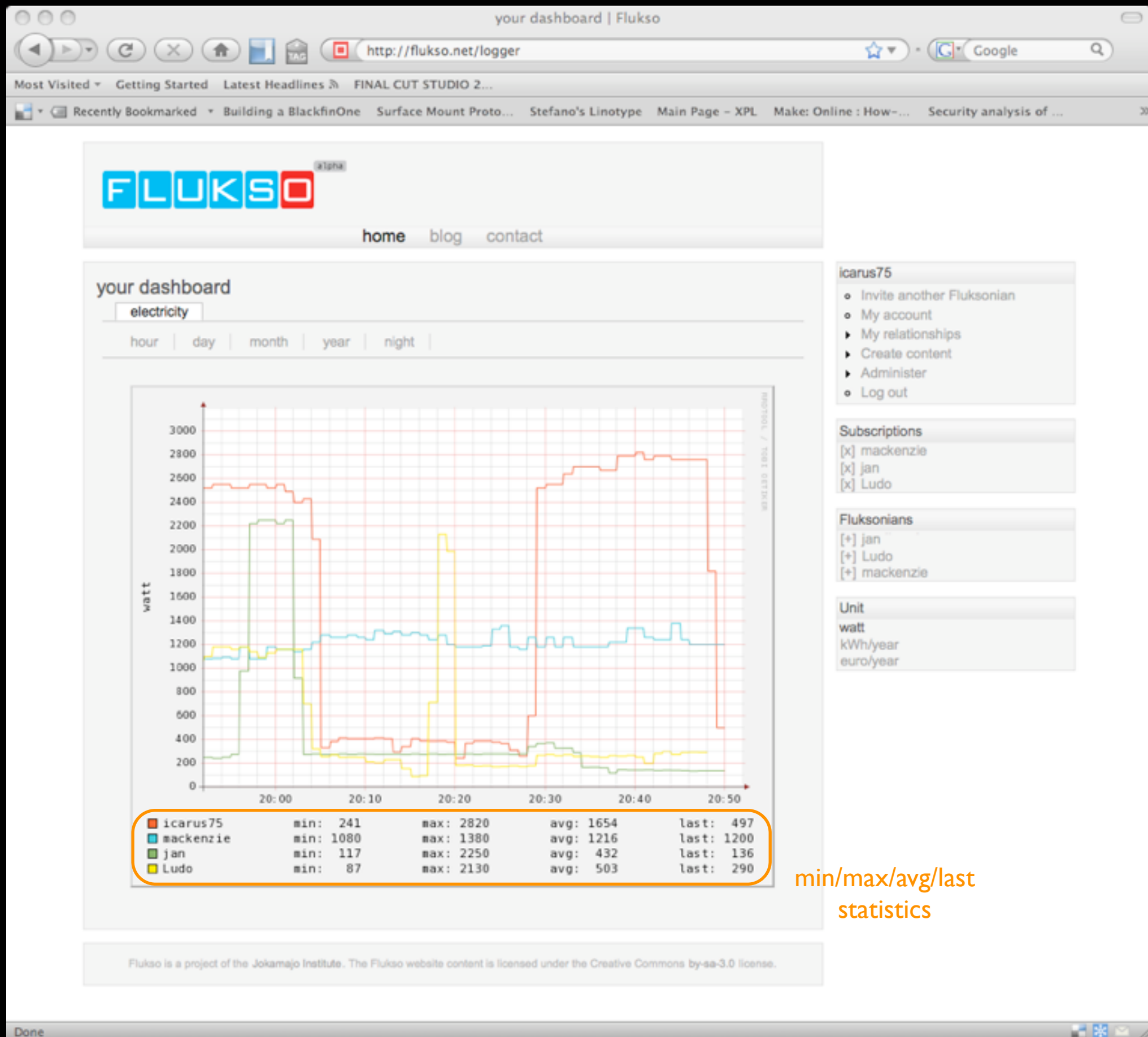
IPO M6S1z AÑO 1988 CLASE

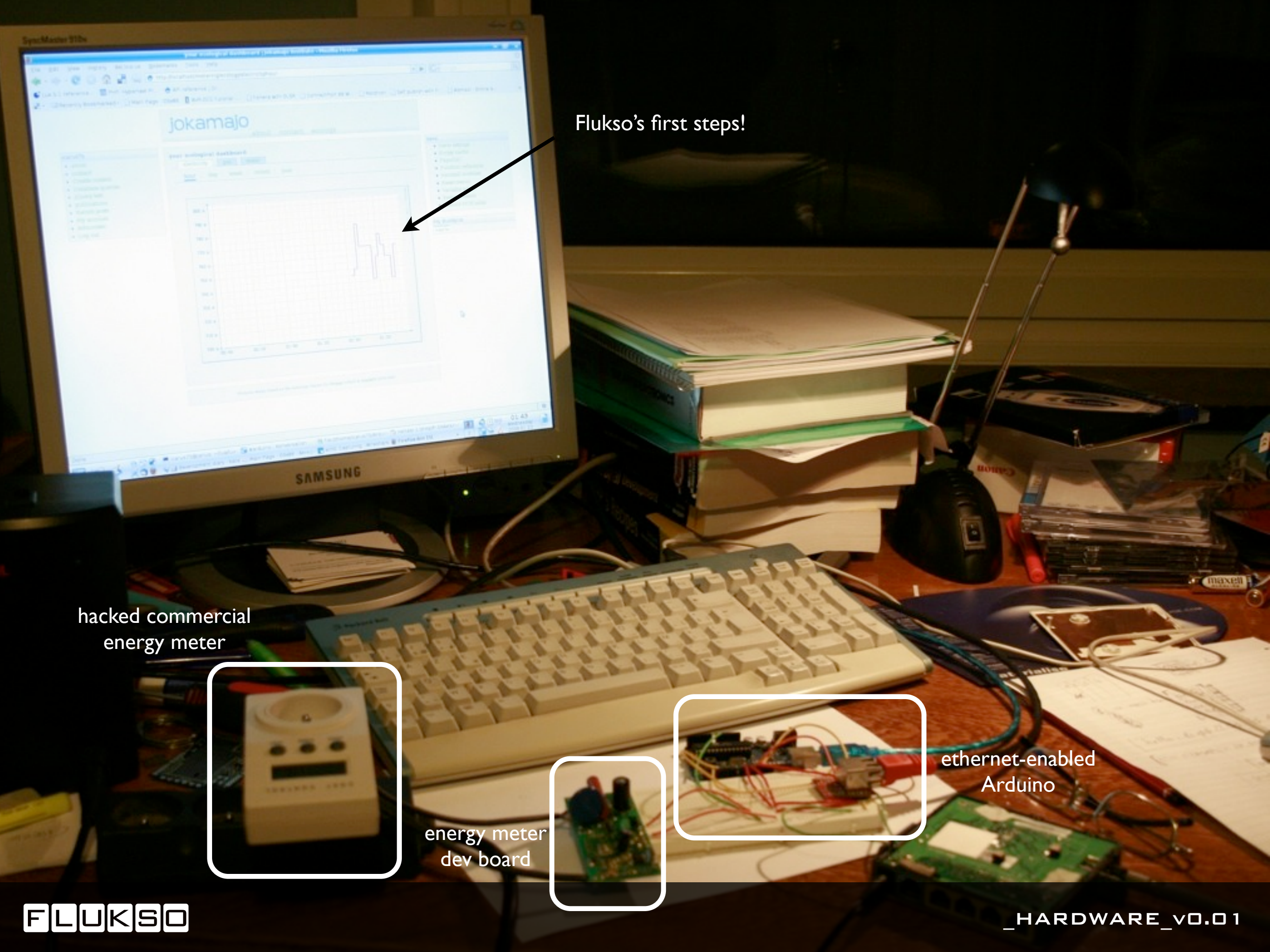










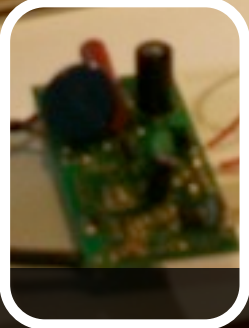


Flukso's first steps!

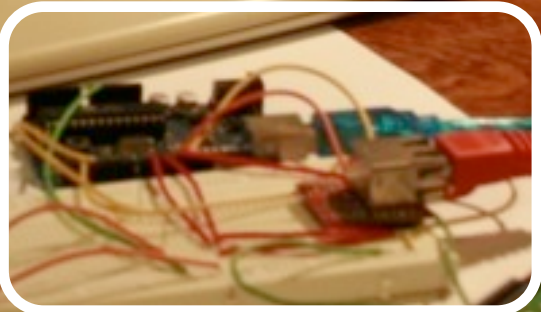
hacked commercial
energy meter

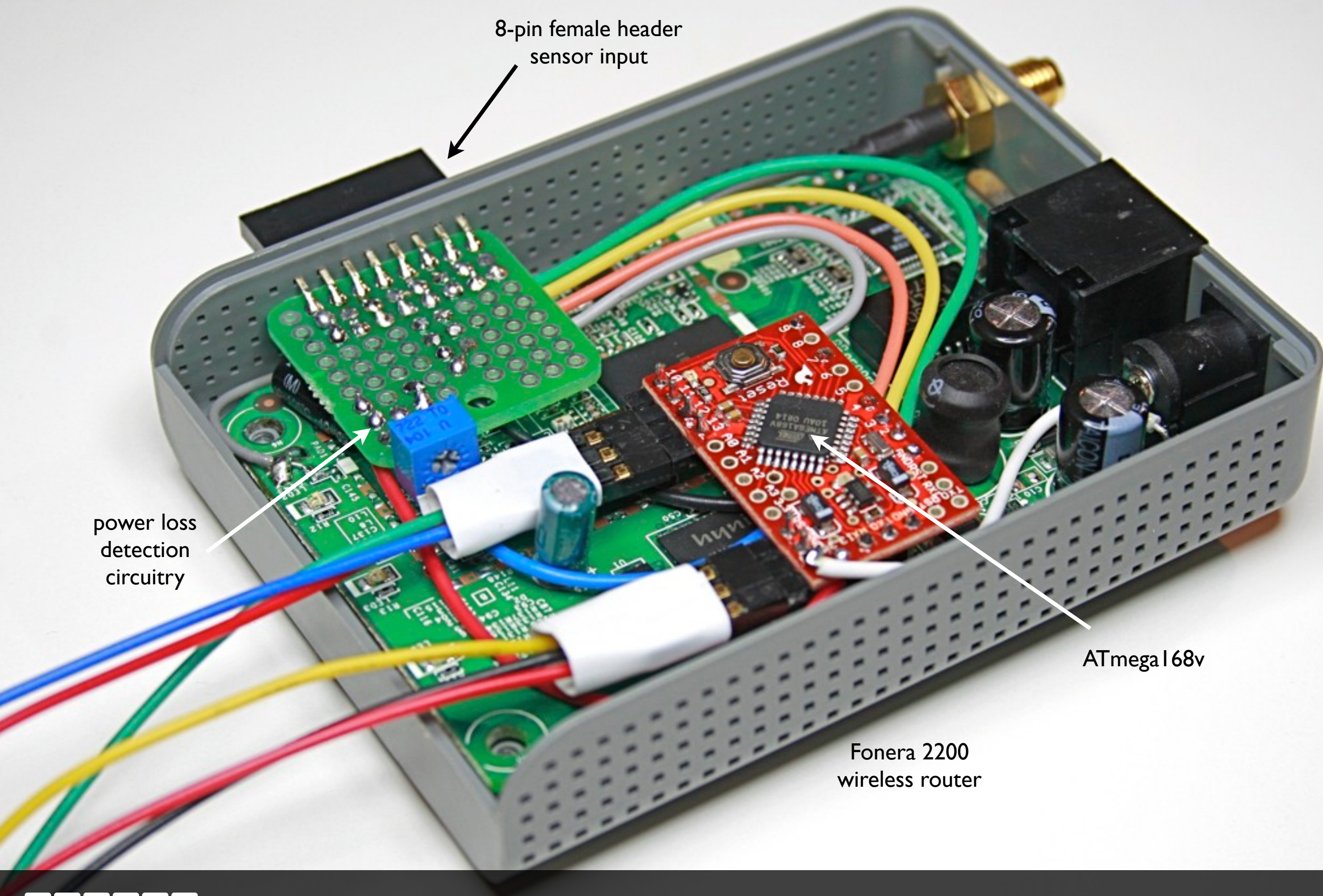


energy meter
dev board



ethernet-enabled
Arduino





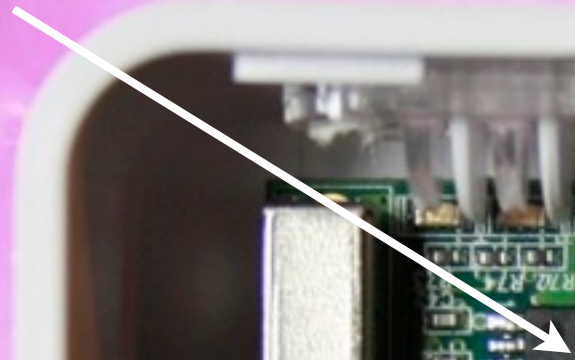
8-pin female header
sensor input

power loss
detection
circuitry

ATmega168v

Fonera 2200
wireless router

4MB Flash/16MB RAM



Flukso sensor board



UART and power to main board

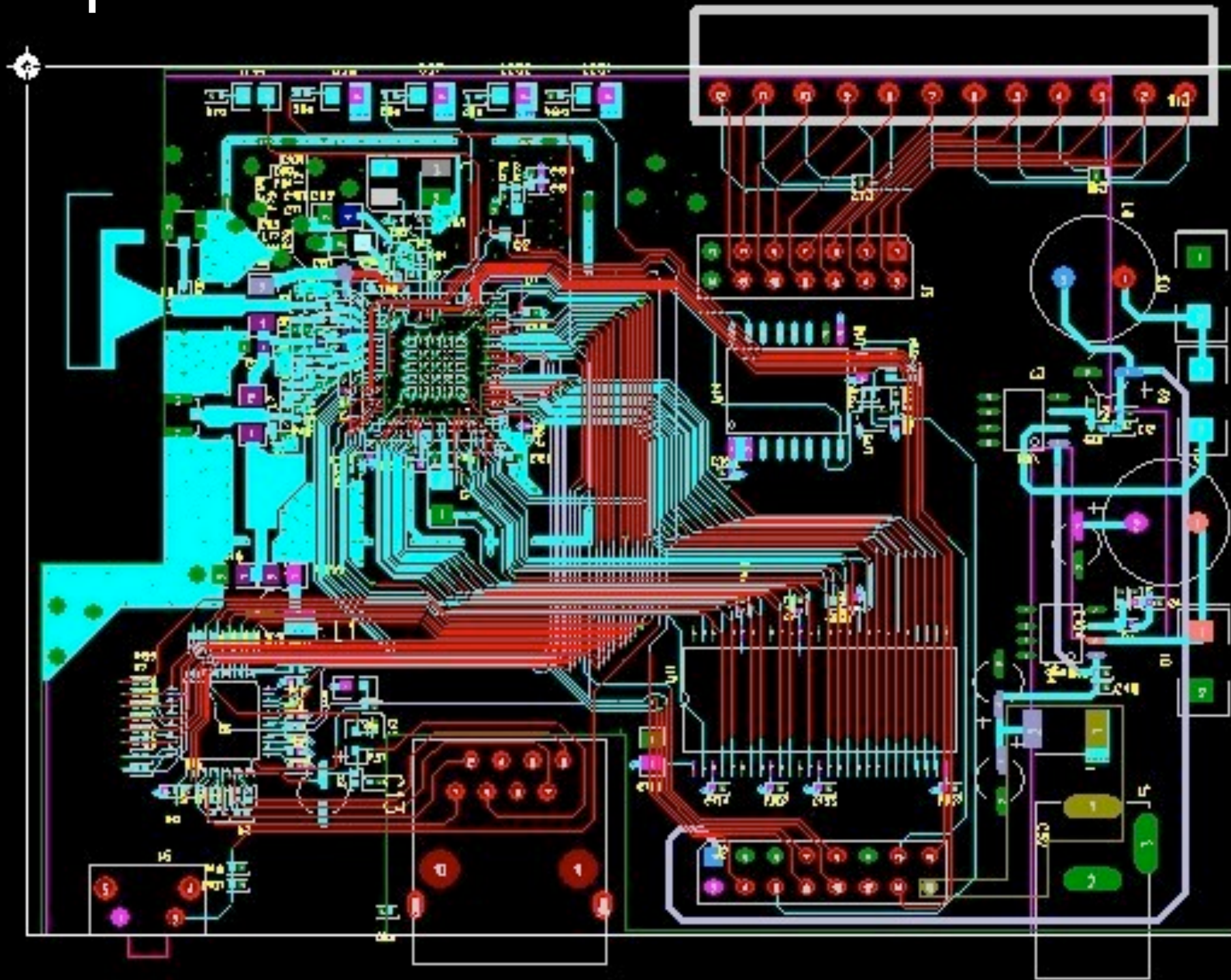


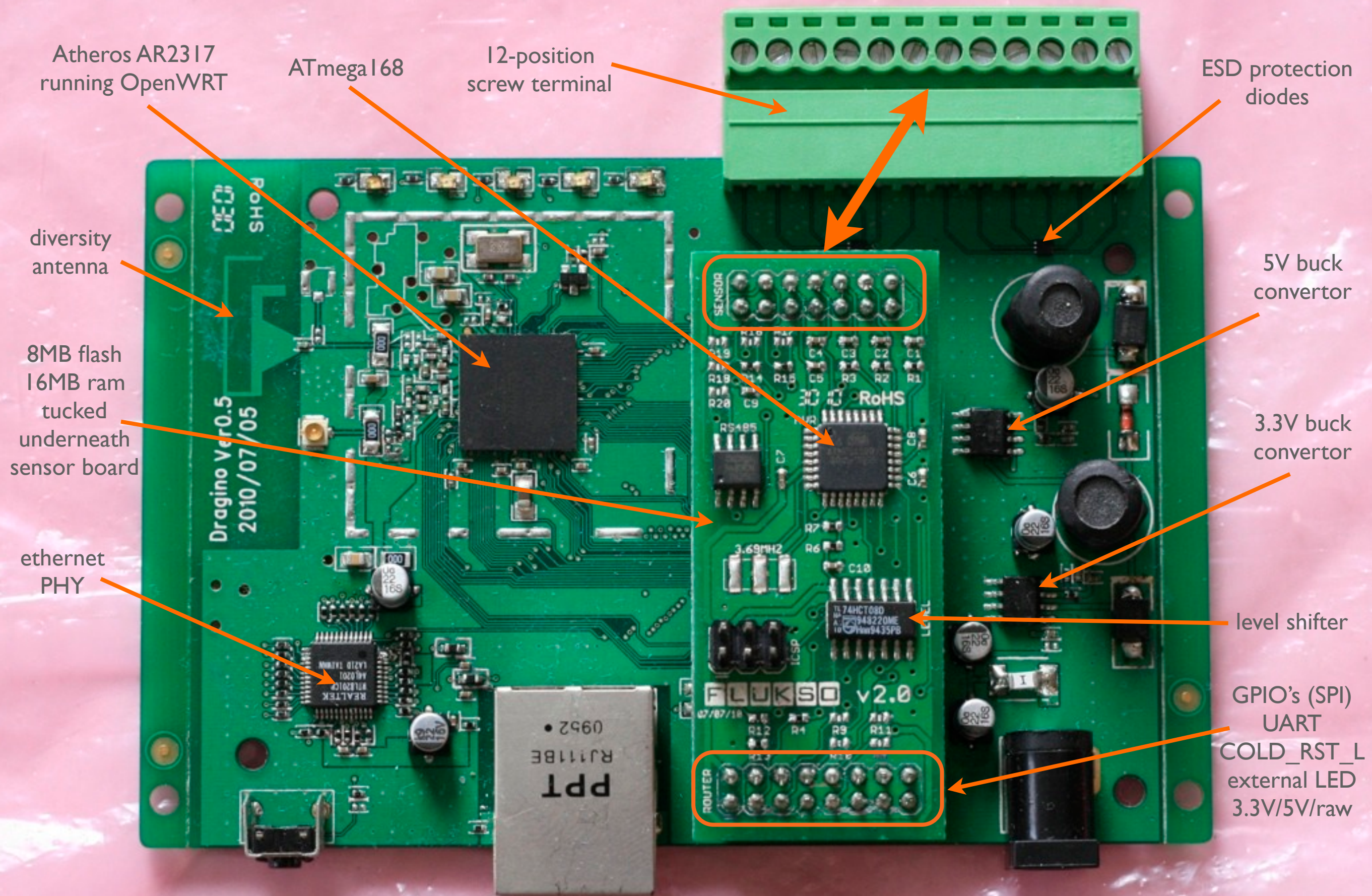


current
clamp

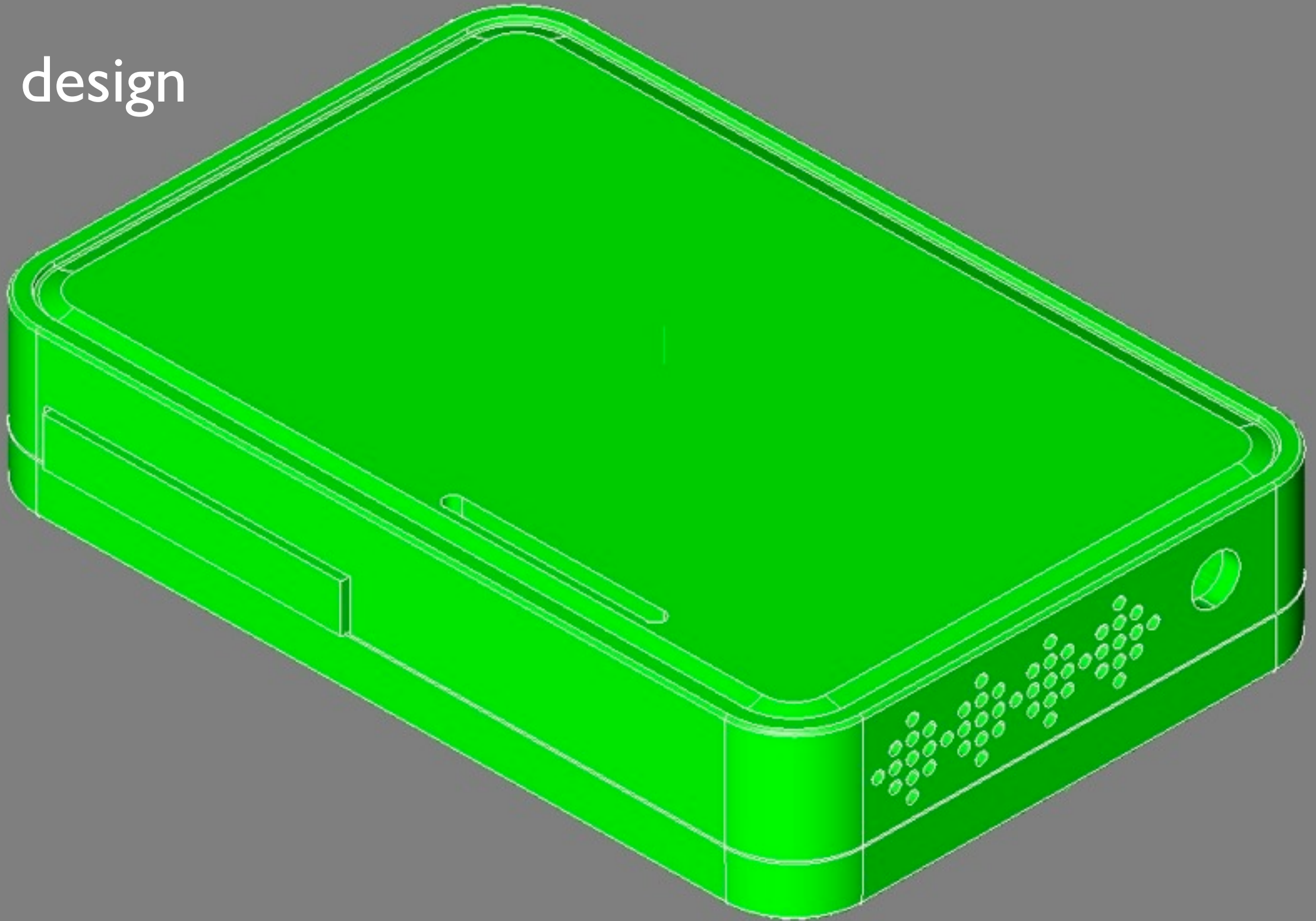
Fluksometer

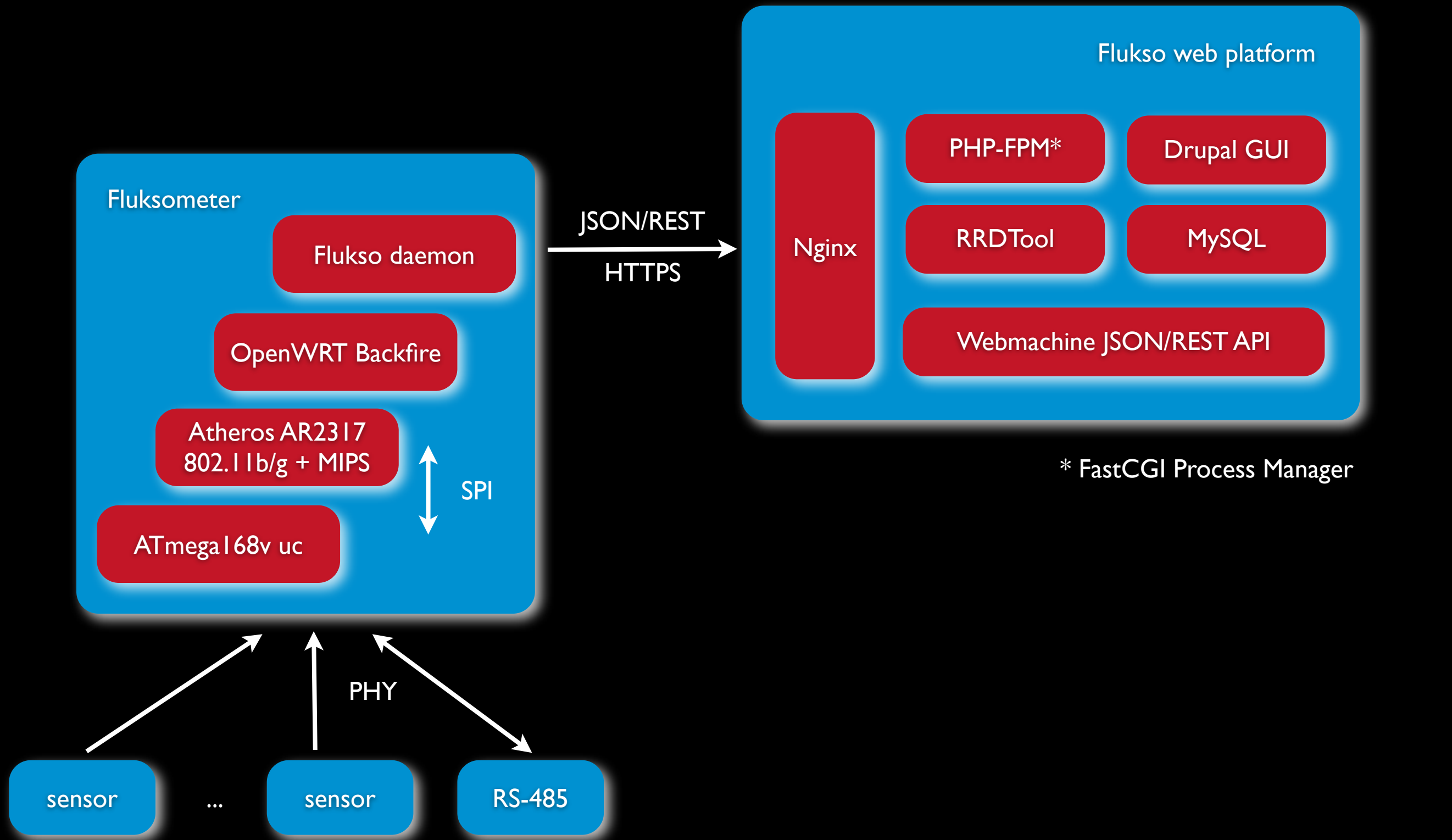
Dragino: open hardware

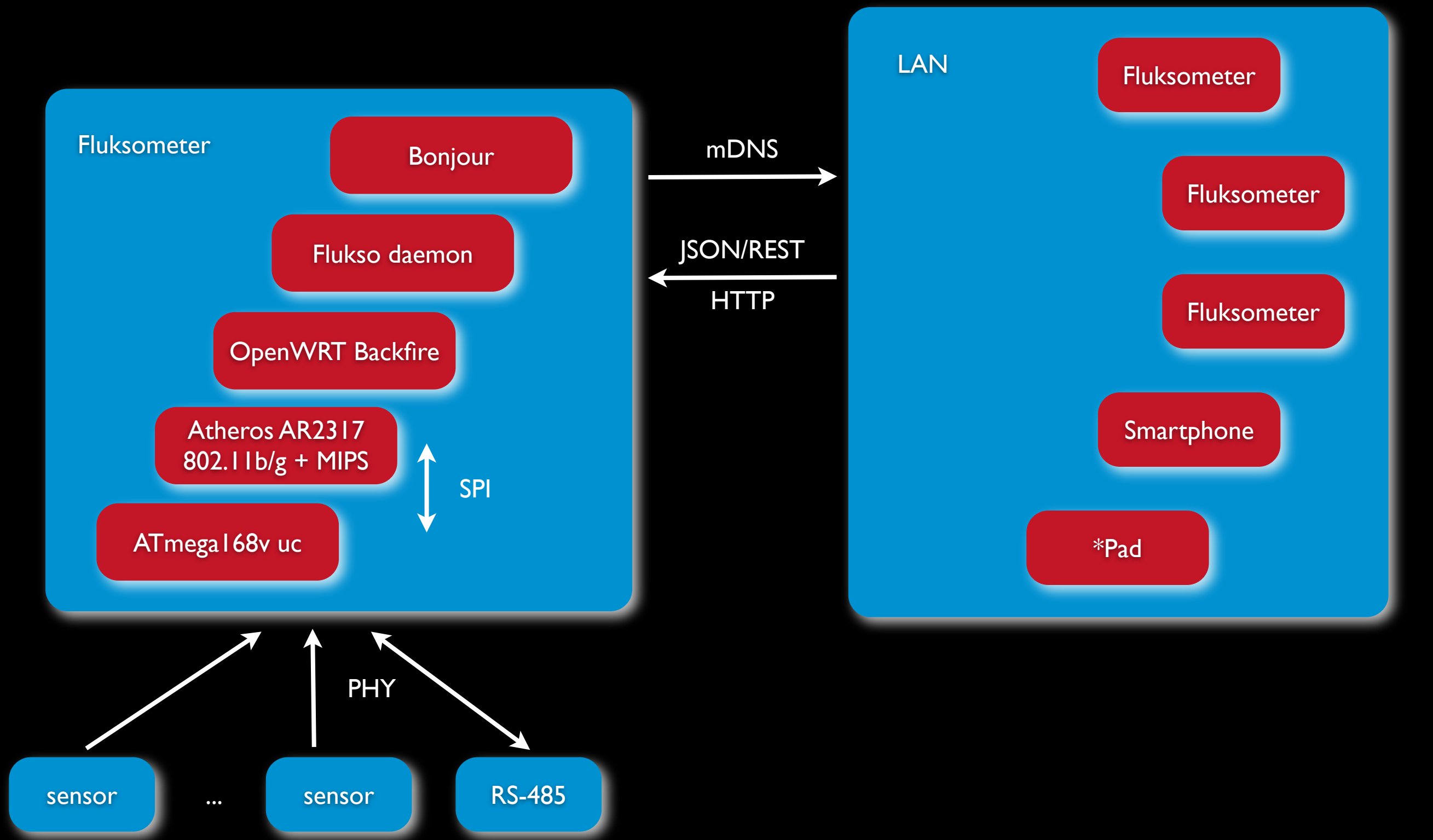




Mold design







Features

- HTTPS:AES-256 TLSv1 with server certificate validation
- Autoregistration to api.flukso.net [no pre-provisioning]
- Avrdude to update sensor board through SPI
- Local [real-time] JSON/REST API on Fluksometer
- Service discovery of sensors in the LAN through Bonjour

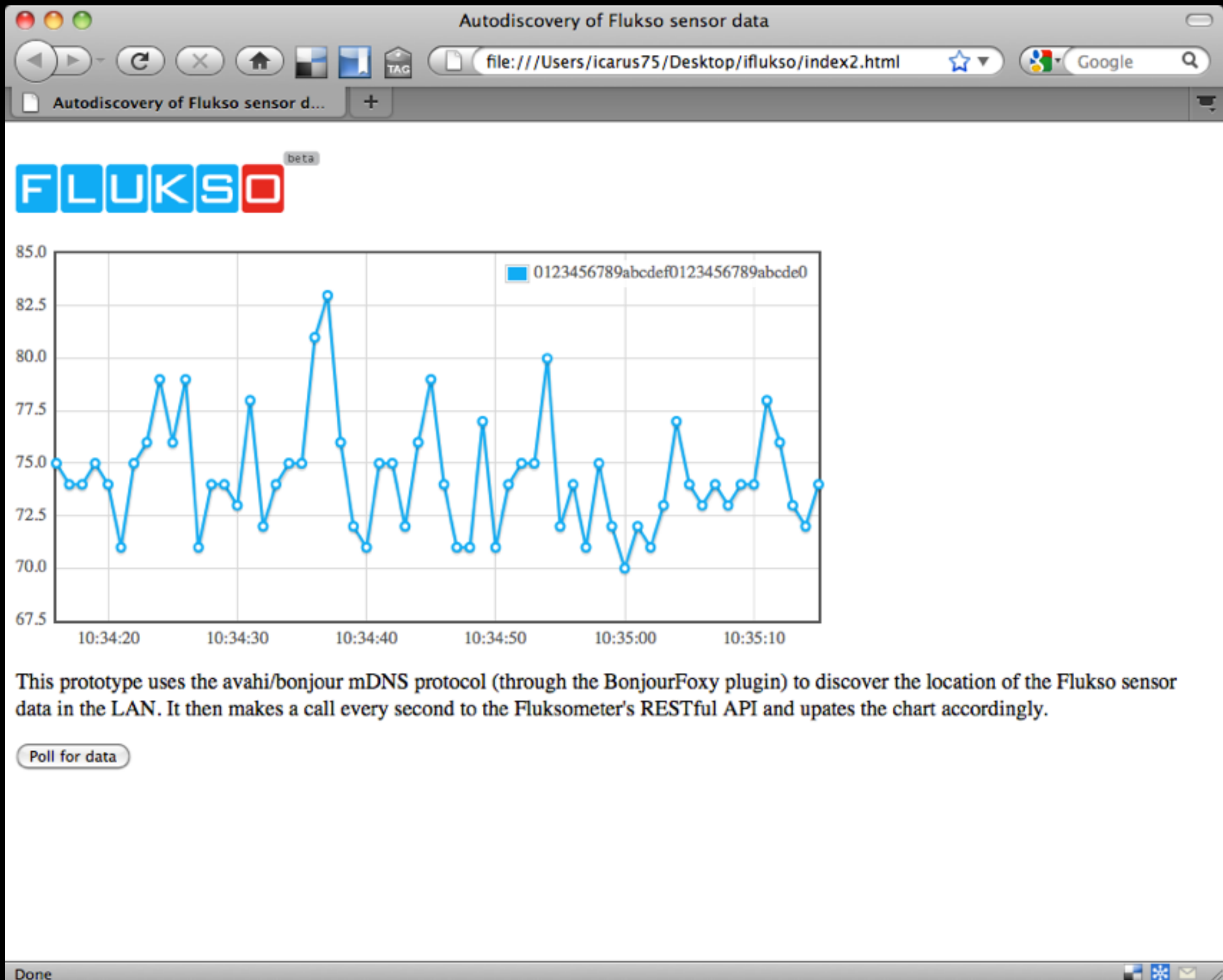
Bonjour Browser			
Network Interface	Service Name	Type	Domain
5	cirrus [00:1d:e0:58:b6:27]	_workstation._tcp	local.
5	nimbus	_afpovertcp._tcp	local.
5	com.apple.qmaster.hostinfo-factory-192.168.1.2	_nssocketport._tcp	local.
5	Secure Shell on flukso	_ssh._tcp	local.
5	Flukso RESTful API on flukso	_flukso._tcp	local.
5	Web Server on flukso	_http._tcp	local.

Network Interface	5
Service Name	Flukso RESTful API on flukso
Type	_flukso._tcp (Unknown)
Domain	local.
Host	flukso.local.
Port	8080
TXT Record	id1=0123456789abcdef0123456789abcde0 id2=0123456789abcdef0123456789abcde1 id3=0123456789abcdef0123456789abcde2 path=/sensor version=1.0

```

icarus75@nimbus:~$ curl -v --trace-time 'http://flukso.local:8080/sensor/
0123456789abcdef0123456789abcde0?
version=1.0&interval=minute&unit=watt&jsonp_callback=get_sensor_data'
20:29:39.330757 * About to connect() to flukso.local port 8080 (#0)
20:29:39.343290 *   Trying 192.168.1.7... connected
20:29:39.345815 * Connected to flukso.local (192.168.1.7) port 8080 (#0)
20:29:39.345920 > GET /sensor/0123456789abcdef0123456789abcde0?
version=1.0&interval=minute&unit=watt&jsonp_callback=get_sensor_data HTTP/1.1
20:29:39.345920 > User-Agent: curl/7.19.7 (universal-apple-darwin10.0) libcurl/7.19.7
OpenSSL/0.9.8l zlib/1.2.3
20:29:39.345920 > Host: flukso.local:8080
20:29:39.345920 > Accept: */*
20:29:39.345920 >
20:29:39.530797 < HTTP/1.1 200 OK
20:29:39.530869 < Connection: close
20:29:39.533617 < Transfer-Encoding: chunked
20:29:39.535869 < Content-Type: application/json
20:29:39.535926 <
20:29:39.538671 * Closing connection #0
get_sensor_data([[1288290519,125],[1288290520,125],[1288290521,127],[1288290522,125],
[1288290523,126],[1288290524,128],[1288290525,130],[1288290526,129],[1288290527,128],
[1288290528,127],[1288290529,125],[1288290530,135],[1288290531,124],[1288290532,124],
[1288290533,125],[1288290534,127],[1288290535,125],[1288290536,124],[1288290537,125],
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[1288290573,125],[1288290574,126],[1288290575,124],[1288290576,124],[1288290577,124],
[1288290578,124]])

```







Macarena C., ?

www.flickr.com/photos/room_onfire/403830495/



Join us at www.flukso.net!

HW/SW repository at <http://github.com/icarus75/flukso>