



CATSAT TEAM
UPM_SPAIN



Catsat Members_:

Miguel Ángel de Frutos /:

TeamLeader_ Electronical /Software

Carlos Freire /:

Navigation_Structure

Alejandro Bujarrabal /:

Structure_Navigation

an Fernández /:

g_Navigation

Almudena Buelta /:

Administration_Management

“El Gato” /:

am’s Pet

Spanish Cansat Competition



facebook.

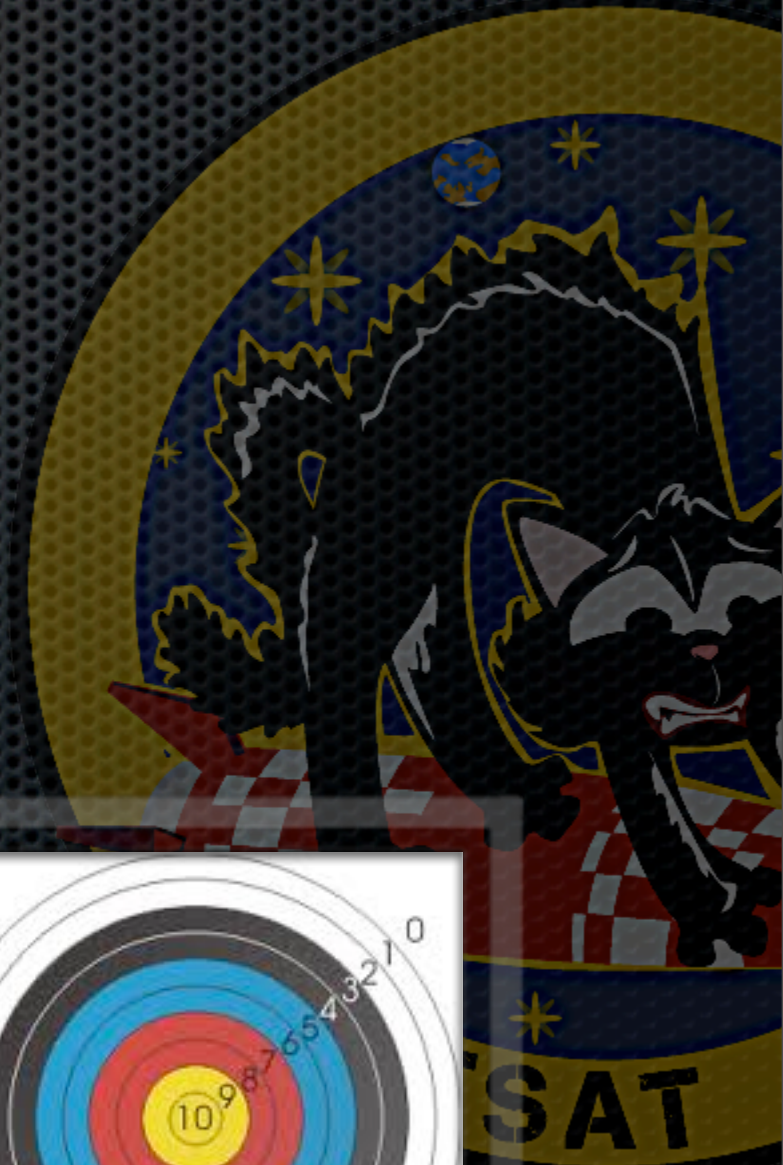
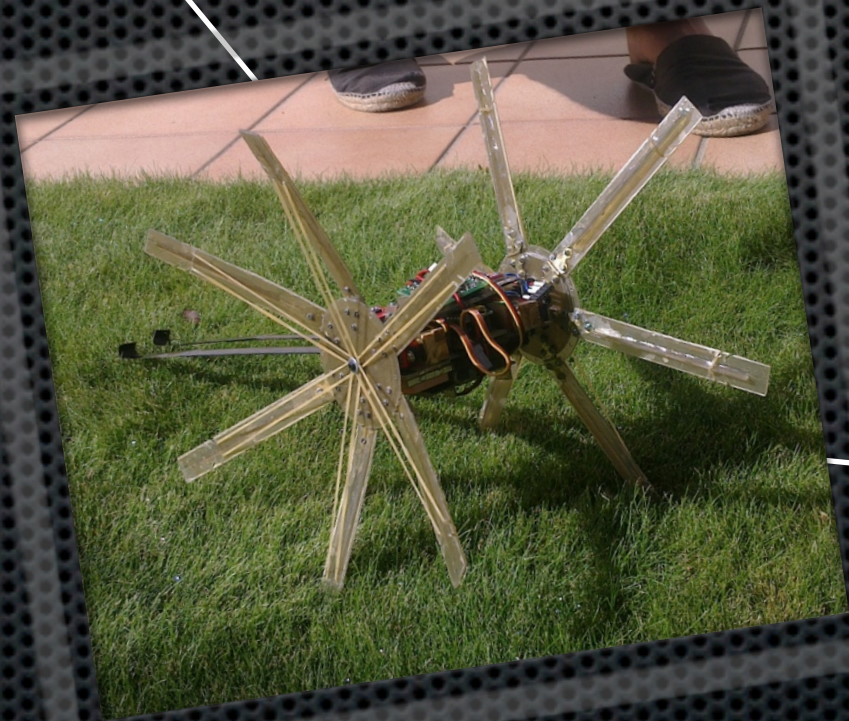
<http://sites.google.com/site/catsatteam/>

Mission Steps:

*Inside the balloon.
Cansat in standby.*

*Ground movement
towards the target.*

*Parachute
deployment.*



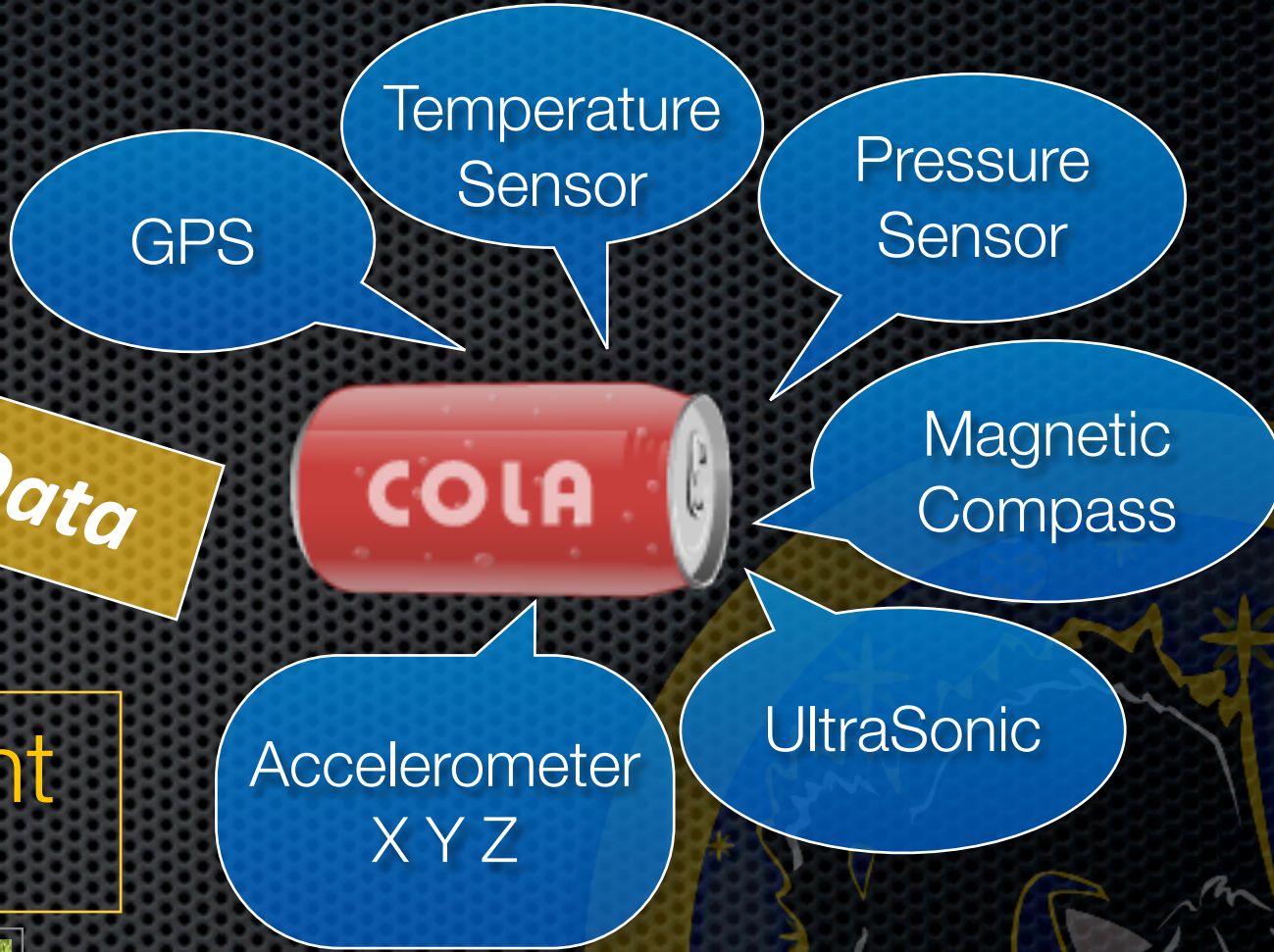
Mission:



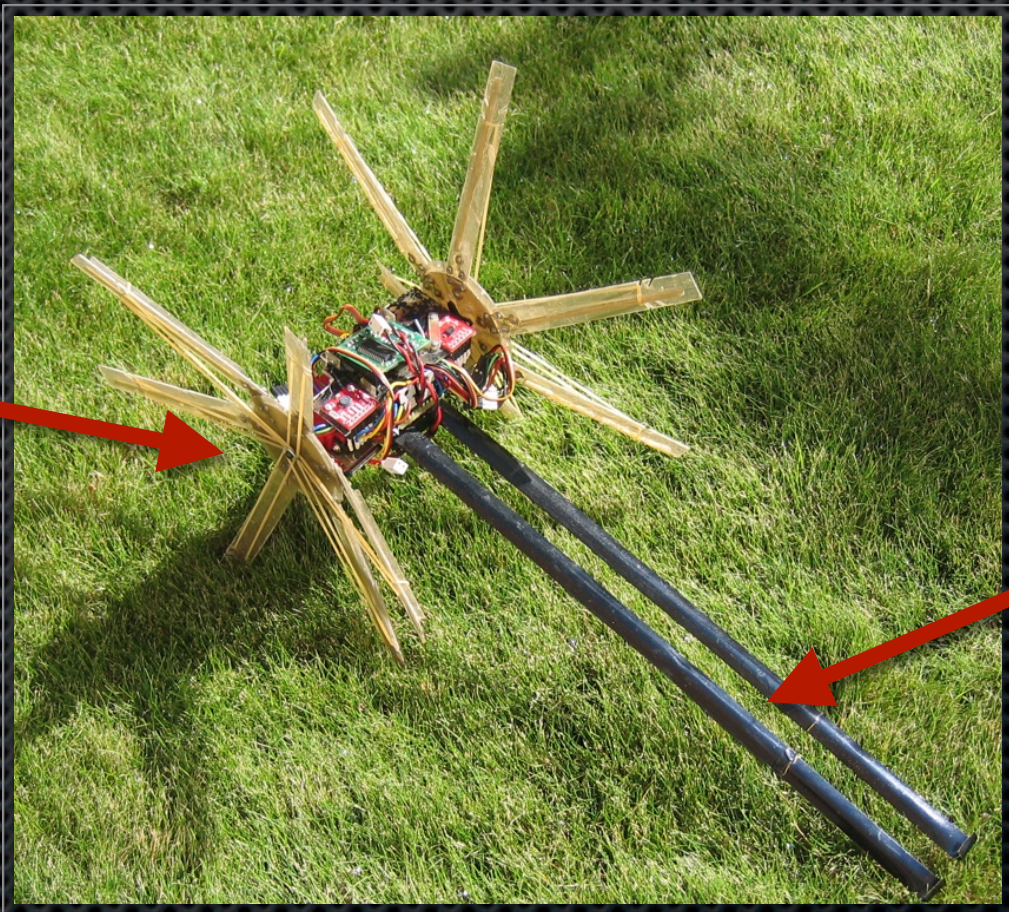
1. Telemetry (14 r/s)

Data

Data

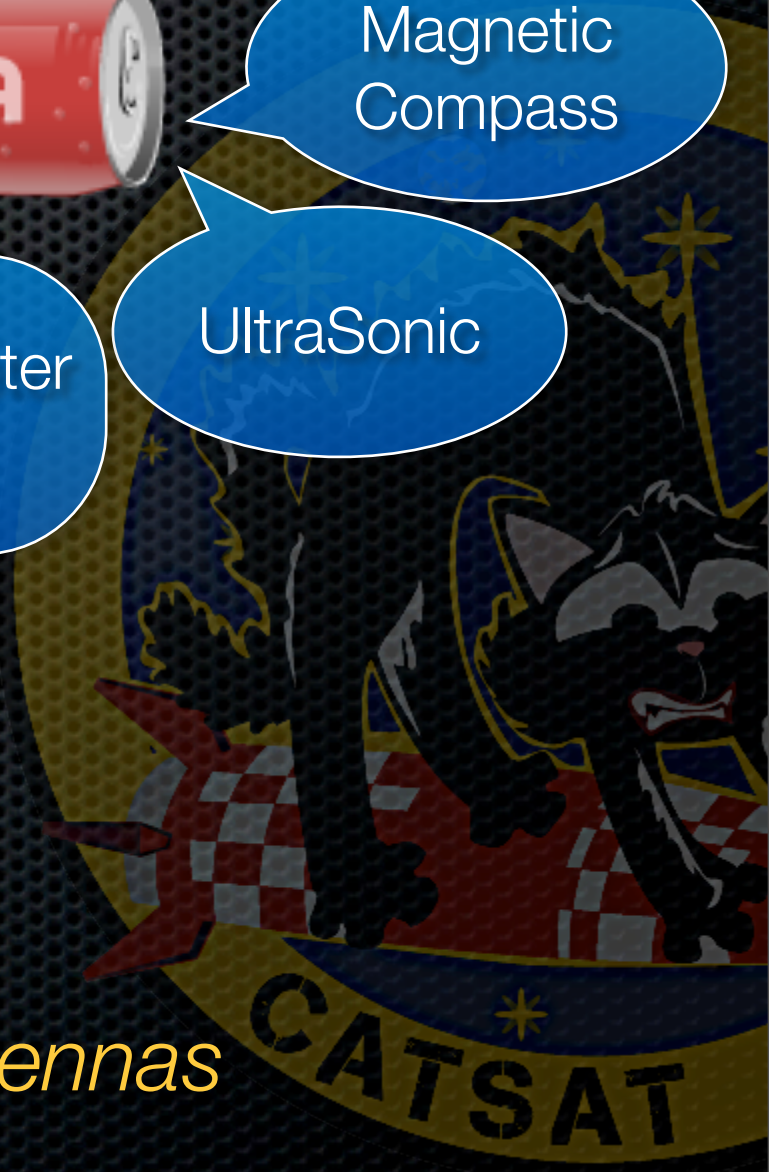


2. Antennas Deployment
(Non Functional)



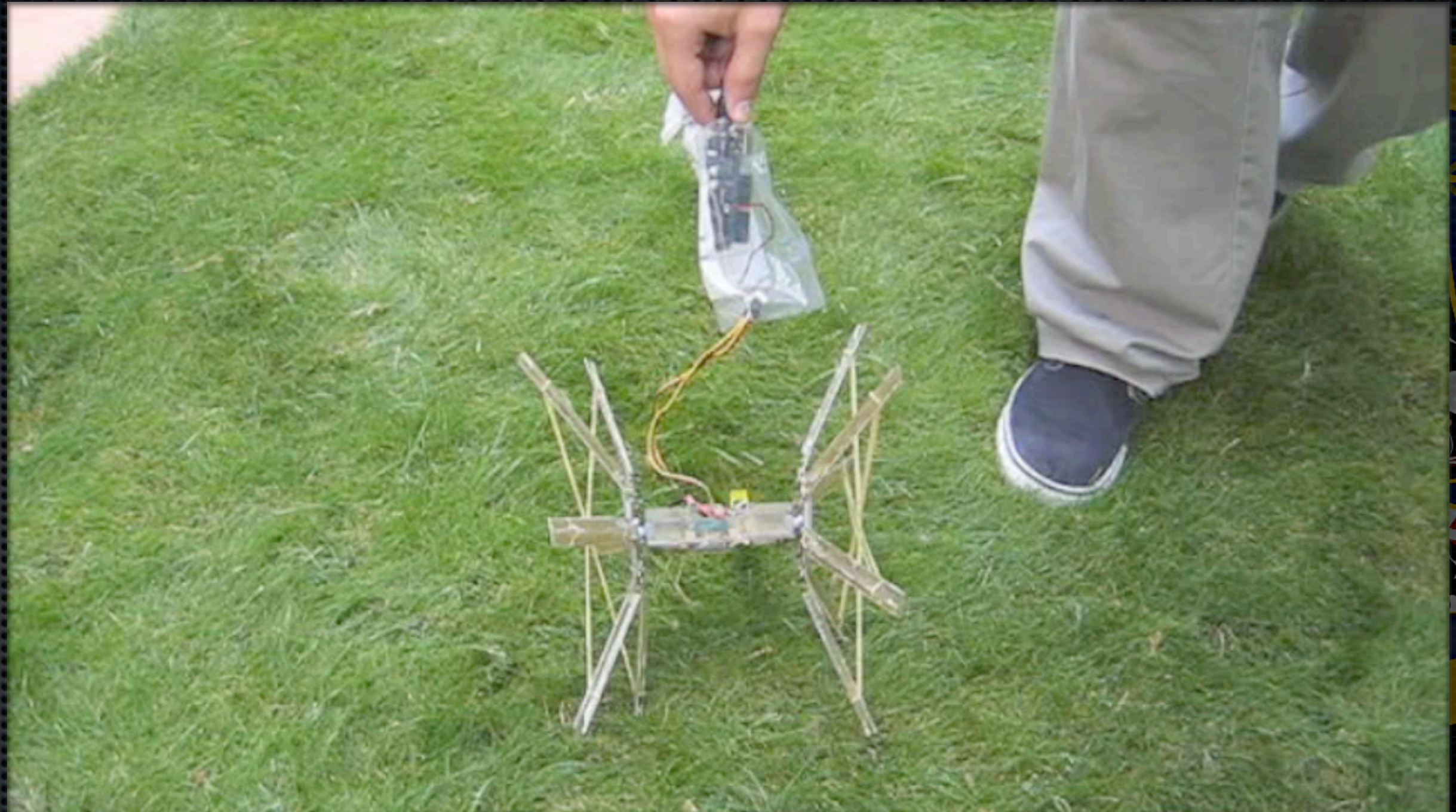
Wheels// Antennas

Legs// Antennas

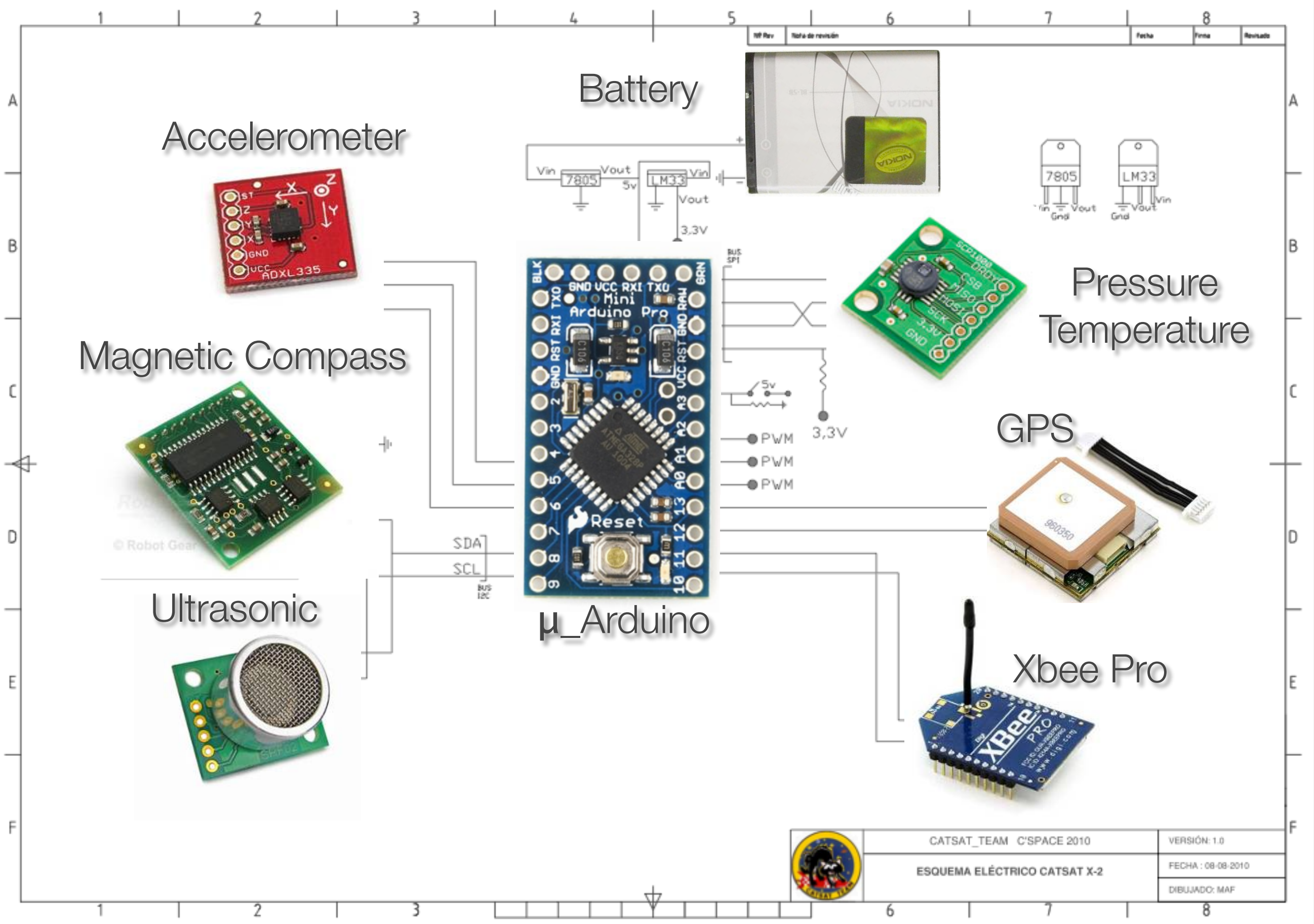


3^a ComeBack/Navigation:

- Rover Cansat
- ComeBack Mission
- Explore foreign lands.
- Avoid obstacles.
- Big wheels.



Electronic Subsystem:



Ground Station:

Radio Link

Sensor Readings

GPS Signal

Data from GPS

Temperature

Height & Temperature

Magnetic Compass

Ultrasonic Distance

Accelerometer

The screenshot displays the 'Ground Station v4' interface with the following data and components:

- Status:** RX: ON LINE (highlighted in green)
- Date/Time:** 8/10/2010 19:35:12 GMT
- Coordinates:** 42.420094 N, 6.379834 W
- Heading:** 196.54 (grados)
- Speed:** 0.44718 (m/s)
- Orientation:** Ax: 469, Ay: 538, Az: 553
- Temperature:** 28 °C
- Pressure:** 92243 Pa
- Ultrasonic Distance:** 271 cm
- Brújula:** 275.0 (grados)
- Altitude:** 782.47974 (metros)

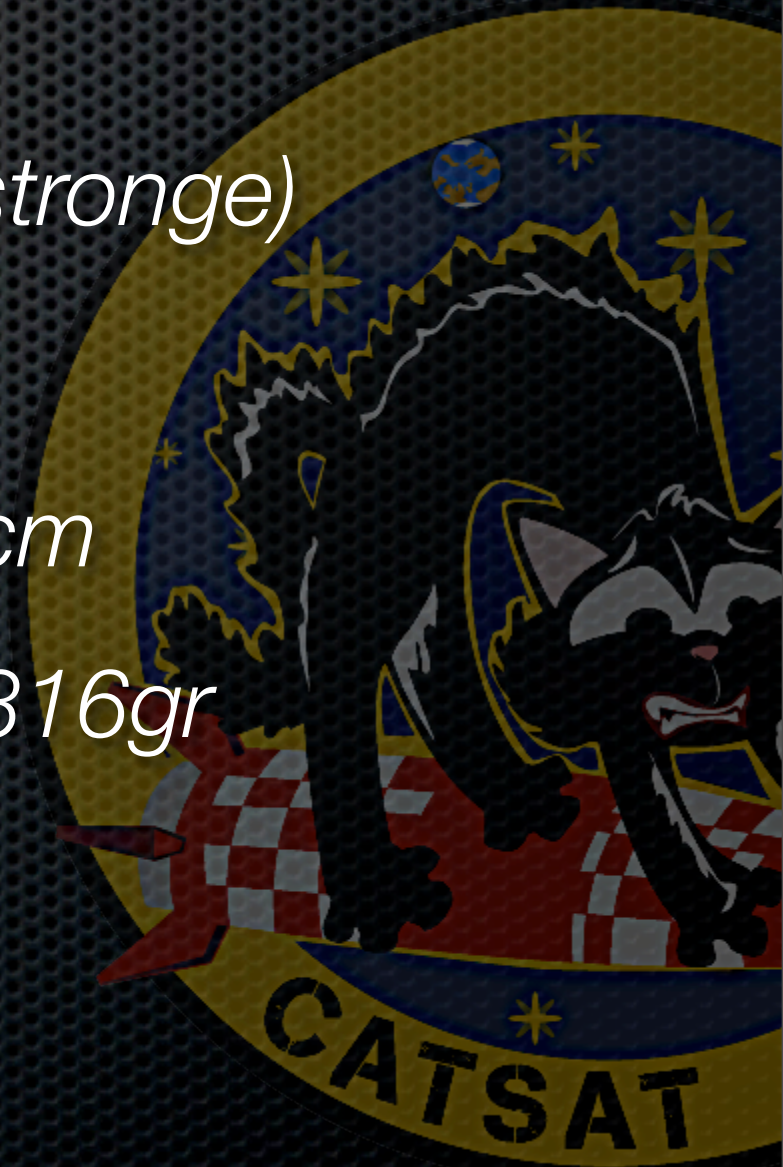
Visual elements include the UPM logo, a CATSAT-X2 team logo, a temperature scale (0°C to 100°C), a magnetic compass showing 275.0 degrees, a 3D accelerometer plot with X, Y, and Z axes, and a vertical ultrasonic distance scale (0 cm to 600 cm).

Structure:

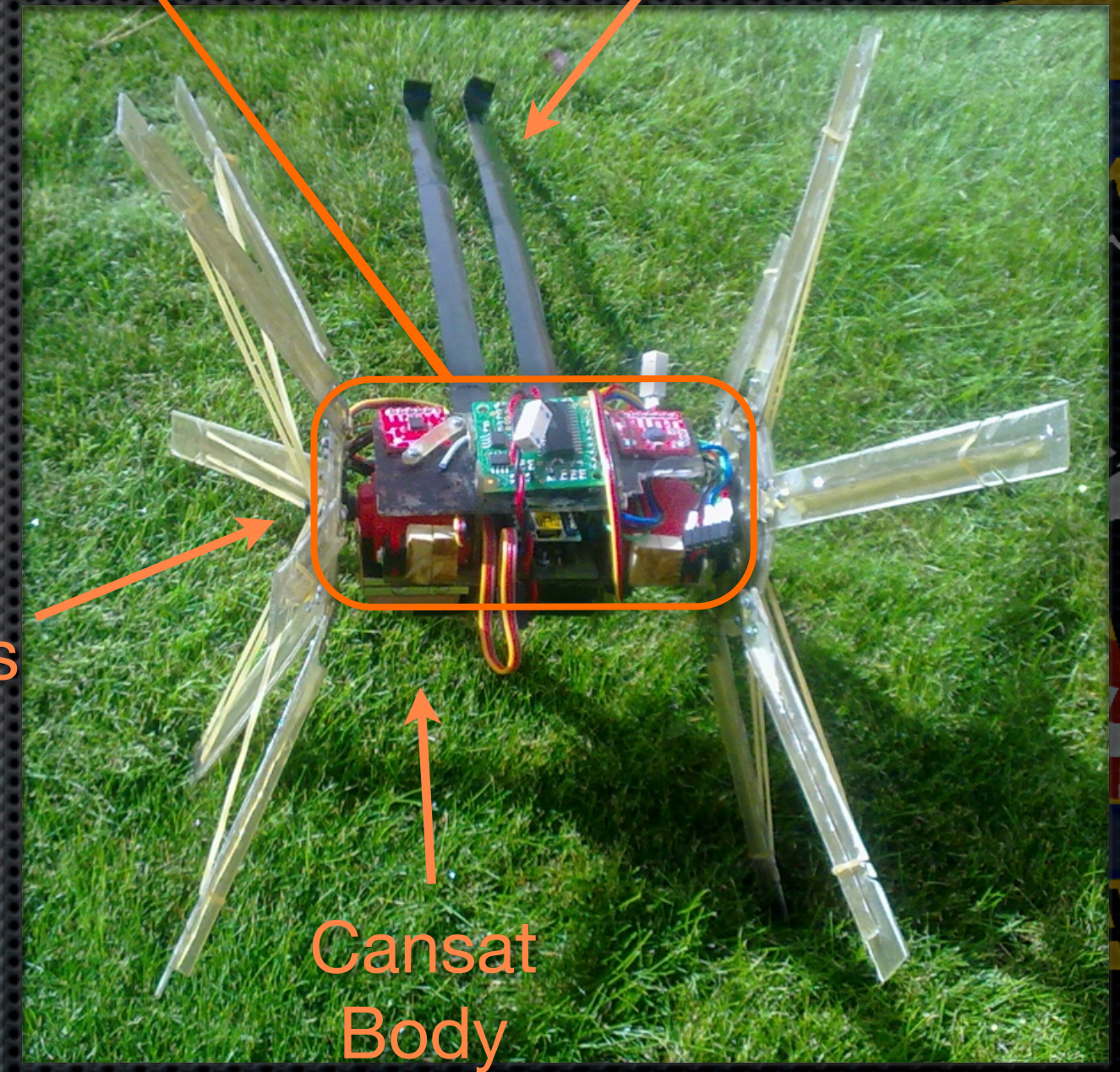
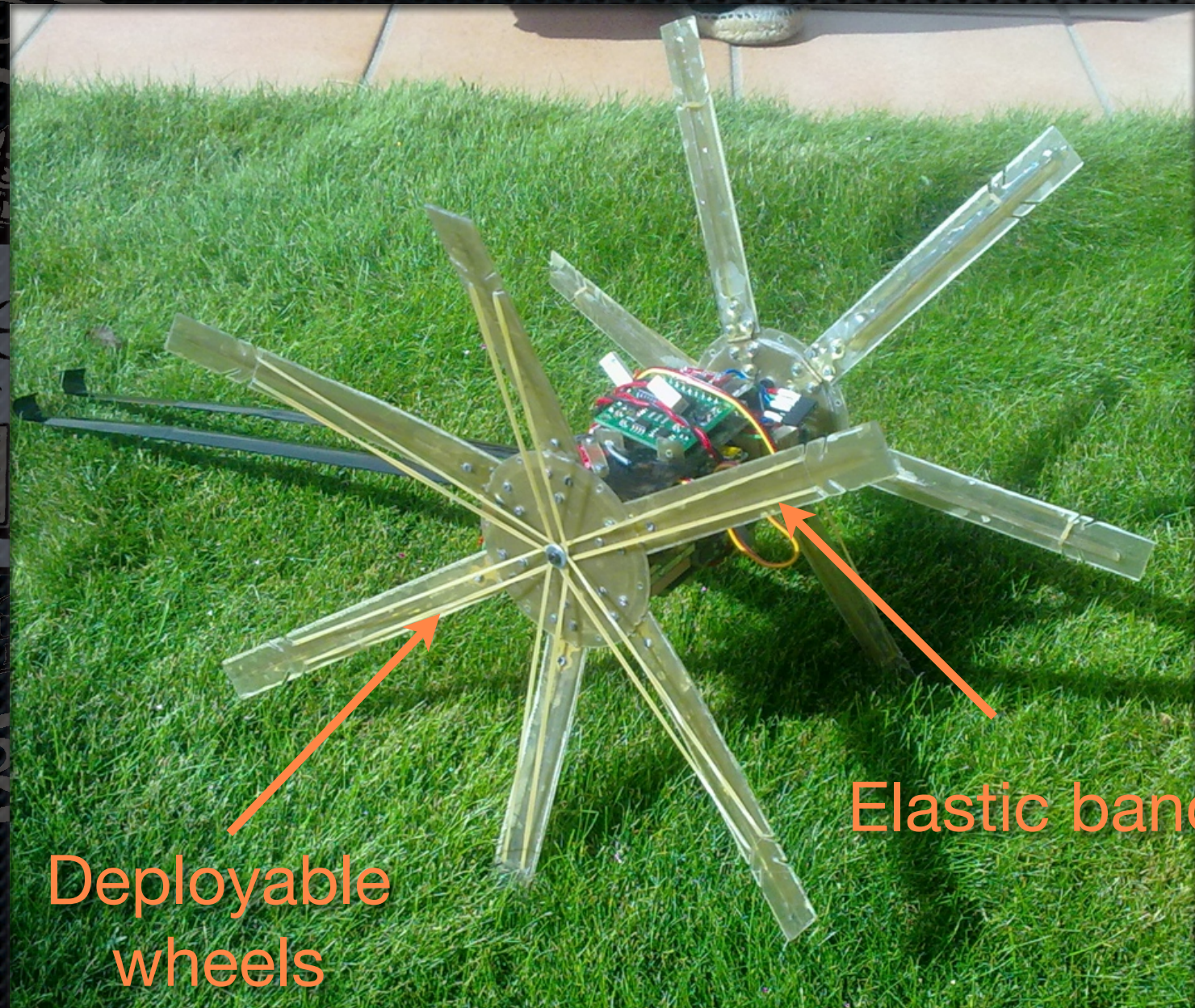


Cansat Closed

- Fiber Glass (light and strong)
- 100% Hand made
- Dimensions: 11'5x6,5cm
- Final weight CATSAT: 316gr



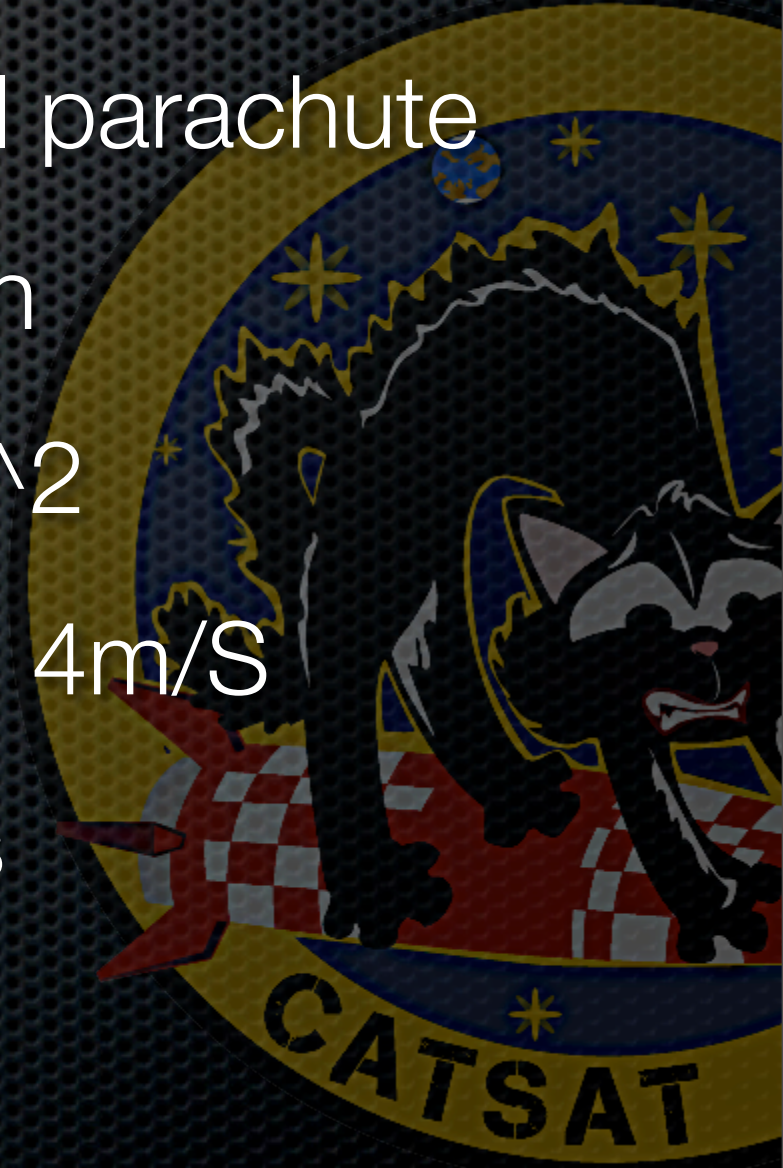
Structure:



Parachute:



- Semispherical parachute
- Made of Nylon
- Area: $0,47 \text{ m}^2$
- Falling speed: 4 m/S
- Nylon threads



BUDGET OF THE MISSION: WORKING HOURS:

Component:	Price (€):
<i>Microcontroller</i>	30
<i>Gps</i>	50
<i>ADXL</i>	20
<i>SPC1000</i>	25
<i>SFR02</i>	6
<i>CMPS03</i>	25
<i>Xbee PRO (x2)</i>	50
TOTAL ELECTRONIC	206
<i>Fiber Glass</i>	50
<i>Screws, elastic bands, ...</i>	20
TOTAL STRUCTURE	70
PARACHUTE	5
TOTAL	351

Subsystem:	Hours:
<i>Electronical</i>	30
<i>GroundStation</i>	30
<i>Structure_Body</i>	40
<i>Structure_Wheels</i>	40
<i>Parachute</i>	6
<i>Navigation Algorythm</i>	15
TOTAL HOURS	170



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