

Smart Backpack

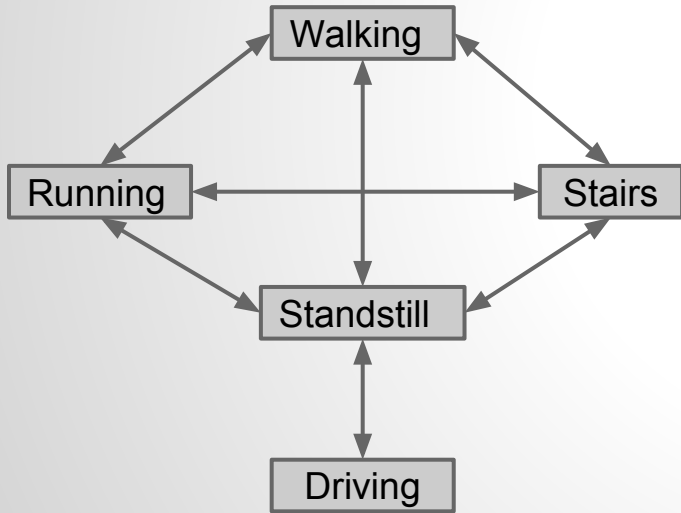
Xabi, Felix, Elena

Our Backpack knows...

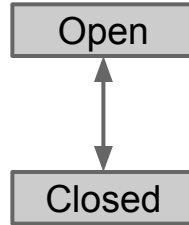
- if the zipper is opened or closed
 - Light sensors
- whether we are walking, running, going up/down the stairs, driving or at a standstill
 - Accelerometers
- the ambient temperature
 - Thermistor
- our walking velocity
 - GPS
- our current locality (city, street...)
 - GPS

Situations/states

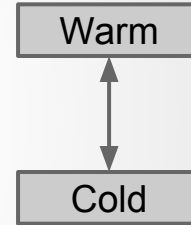
Current activity:



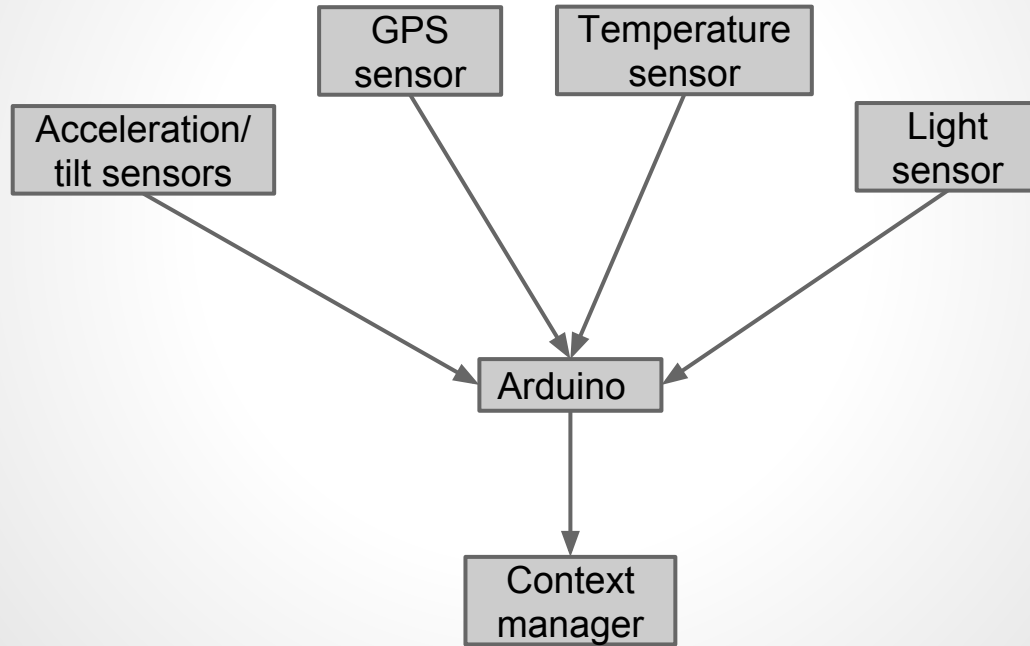
Backpack zip
state:



Environment:

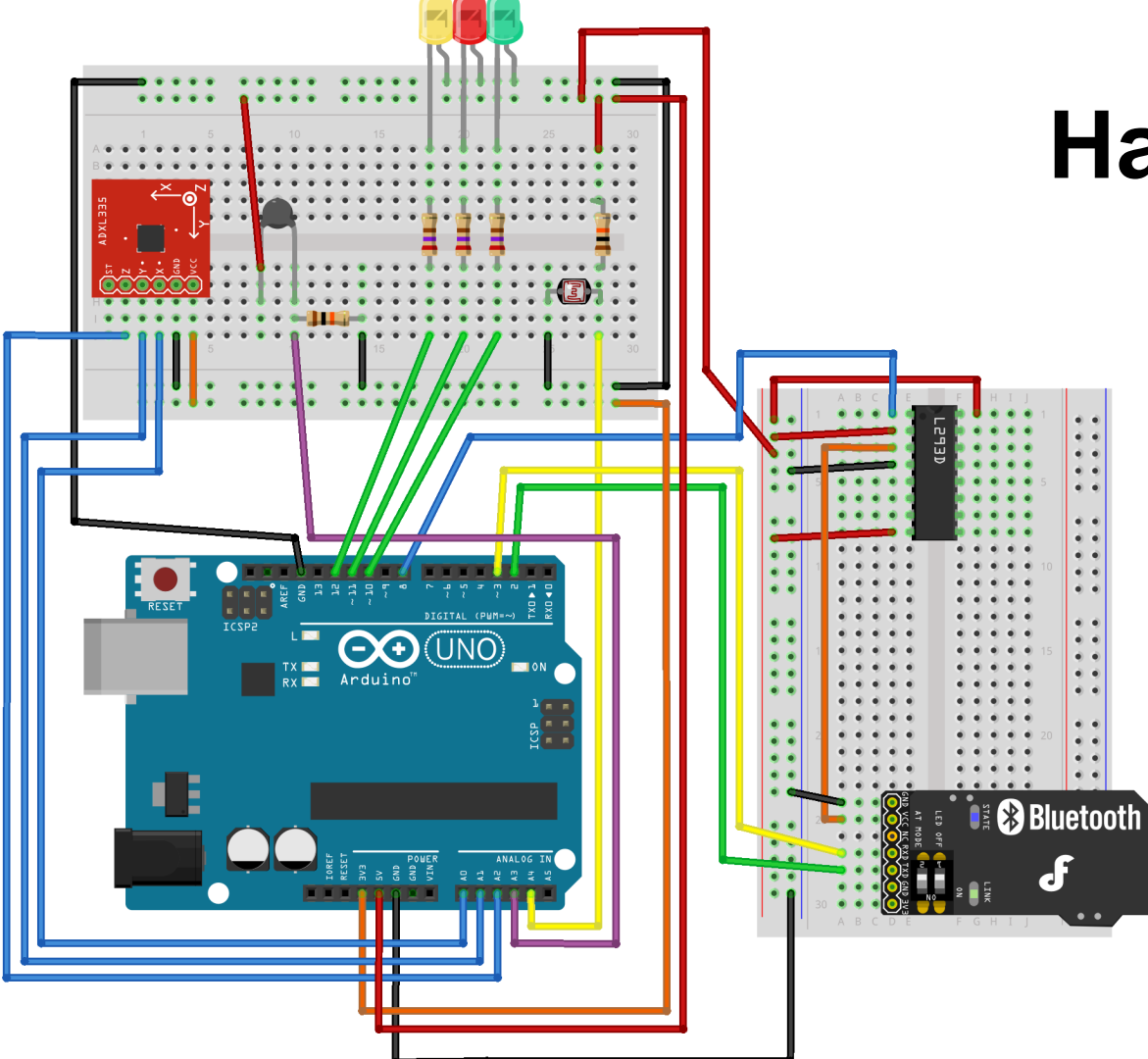


System architecture

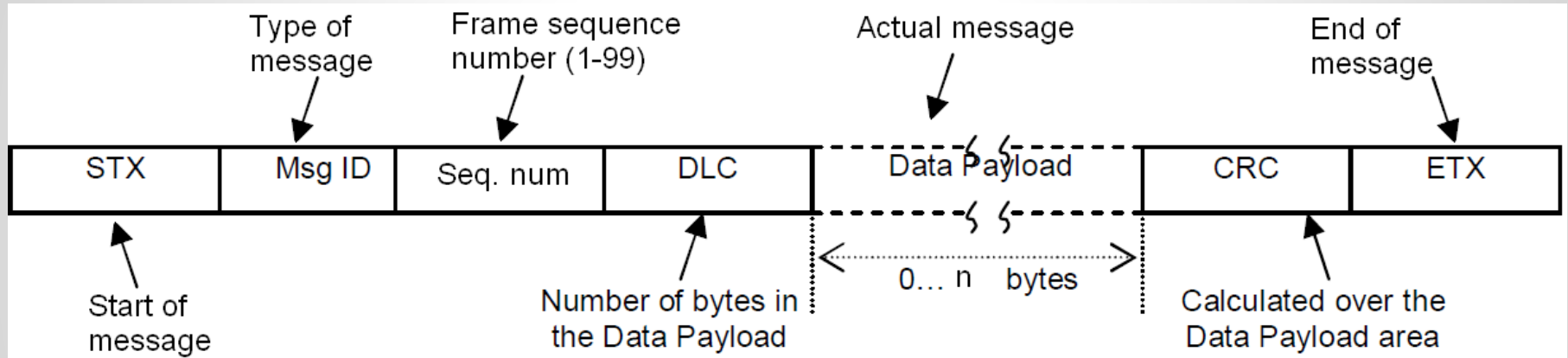


Hardware setup

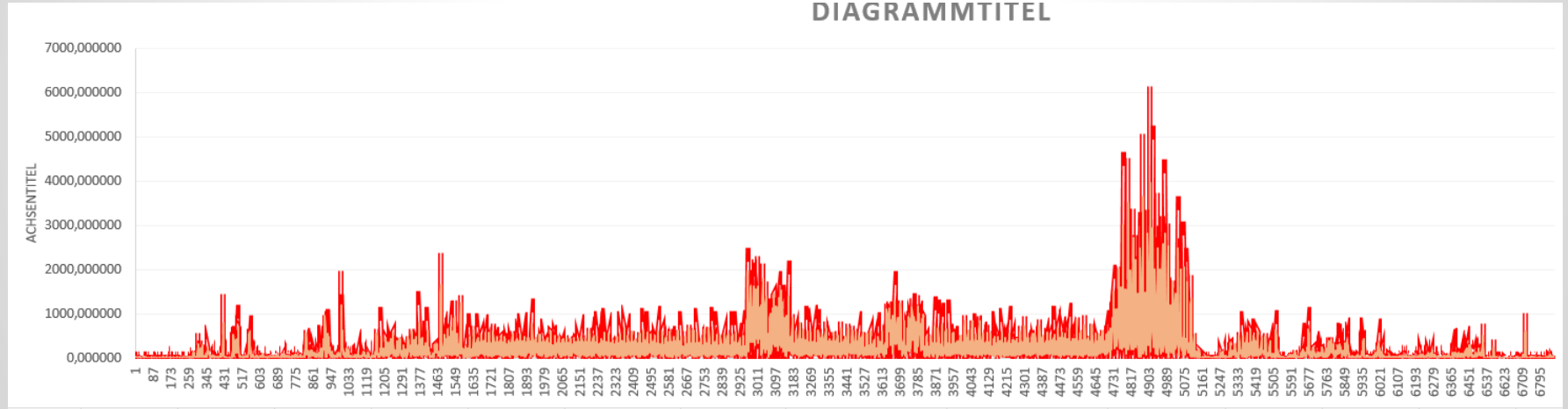
- Arduino Uno
- Accelerometer
- Thermistor
- Light resistor
- Bluetooth module
- GPS sensor (Android)
- LEDs
- Mobile display (Android)
- Voice Speaker (Android)



Bluetooth Protocol



Accelerometer processing



Demo