ukuFundiSat satellite course

Presented by
Dirk Slabber

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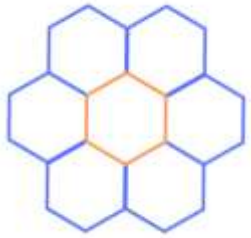


isiLIMELA
SPACE SYSTEMS

A bit about myself

- 2008 - MTN Science Centre
- 2022 - Stellenbosch University Engineering (BEng)
- 2024 - Electronic Systems Laboratory (MEng)
- CubeSpace - Satellite Simulation Engineer

Stellenbosch UNIVERSITY IYUNIVESITHI UNIVERSITEIT

ESL Electronic Systems Laboratory

CUBESPACE

Satellites in South Africa

History

1980s

1999

SunSpace

2009

Today

Satellites in South Africa

Today

Stellenbosch University
iYunivesithi
Universiteit

Cape Peninsula University of Technology

University of KwaZulu-Natal

SANSA
South African National Space Agency

CubeSpace

NewSpace Systems

SIMERA SENSE

Dragonfly aerospace

CubeCom

AAC Clyde Space

Satellites in South Africa

Today

Source: SpaceX

116 RSA products in 80 satellites

DRAGONFLY aerospace

CUBESPACE

NEWSPACE SYSTEMS

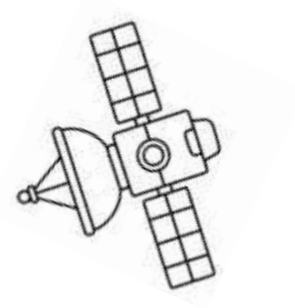
SIMERA SENSE

CUBECOM

- 305+ high-tech employees
- Supporting space manufacturing supply chain

- Over 70% of commercially built satellites contain RSA components
  ~ James Barrington Brown (NewSpace)

Lets build capacity, lets build a CubeSat!



ukuFundiSat kit

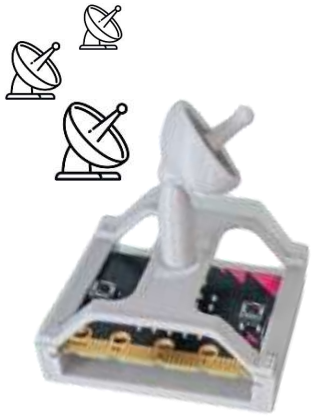
Attitude control

Power system

Radio

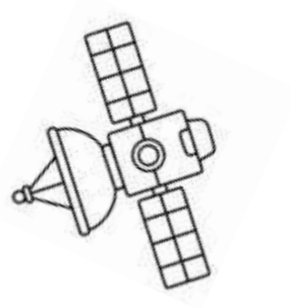
On board computer

Structure



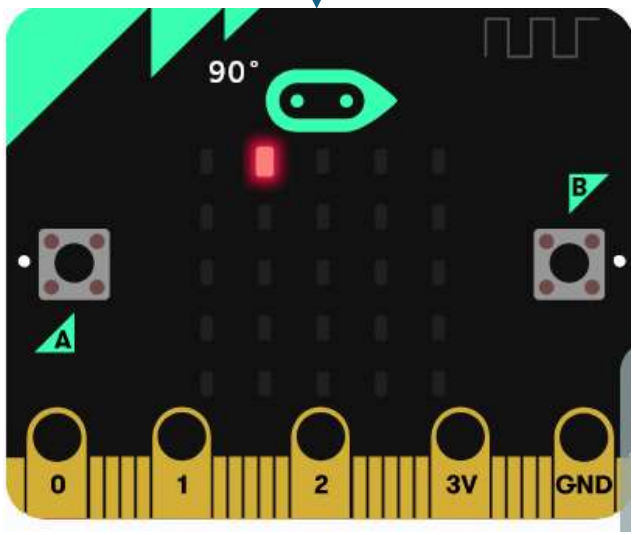
Groundstation

Lets build capacity, lets build a CubeSat!



ukuFundiSat kit

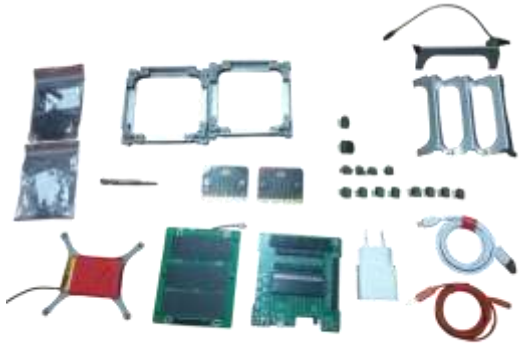
Microbit



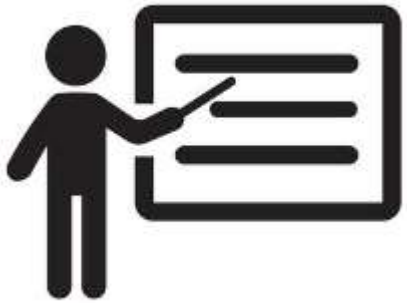
- **Made by BBC non-profit for teaching about robotics**
- **R300 per unit**
- **Online IDE. Can even program via phones**
- **LEDs, Radio, Compass, Microphone, Speaker and much more**

How the course is presented

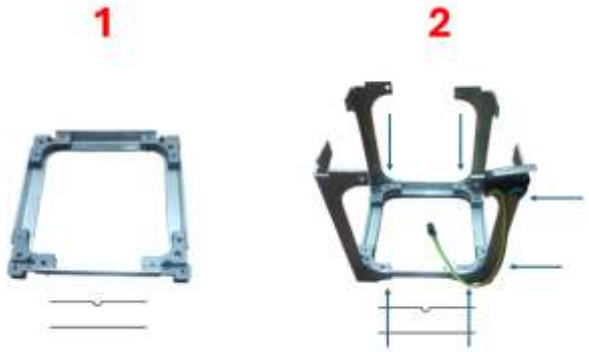
1) Take kit



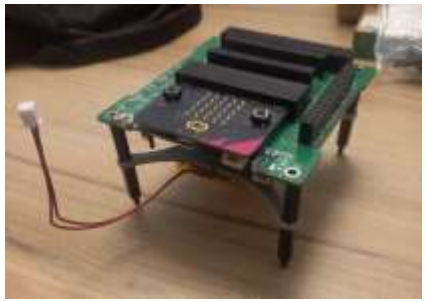
2) Learn



3) Assemble



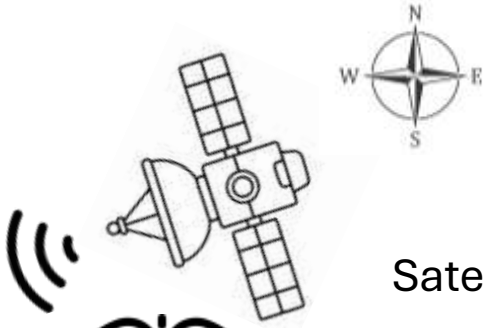
4) Test component



5) Integrate

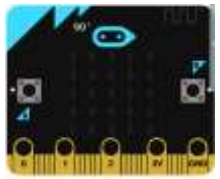
Lets build a CubeSat!

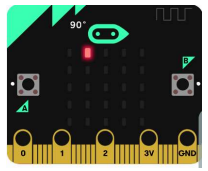
- First MicroBit exercise: Creating a satellite groundstation link

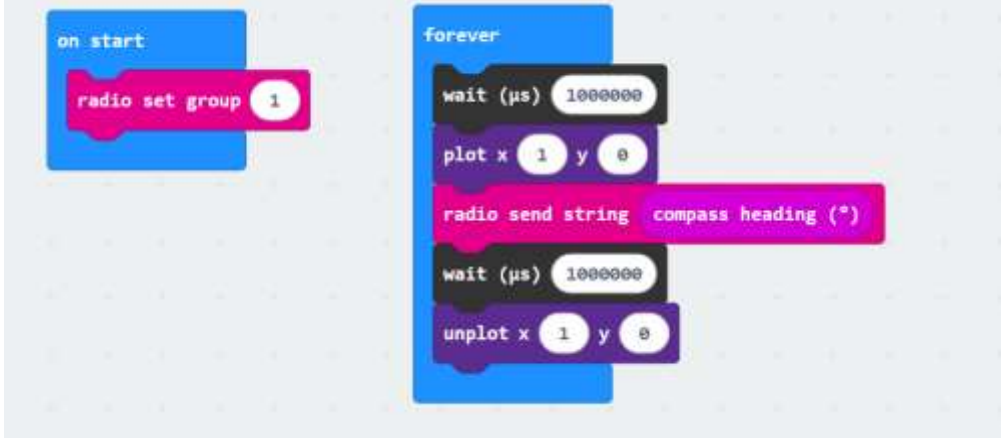


Satellite

Groundstation





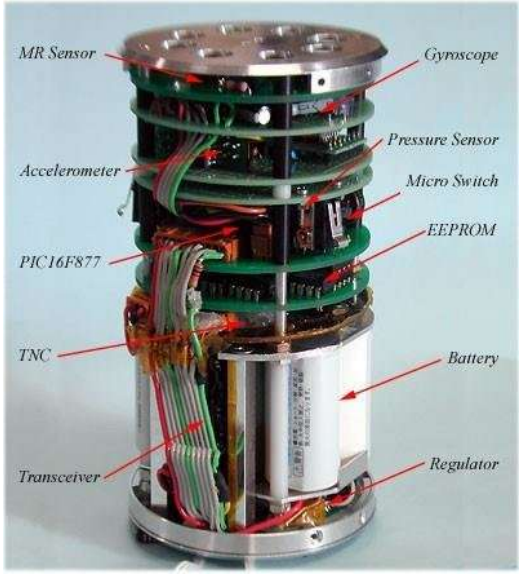


Goals!

What we are working towards

- Hopefully inspire more projects, competitions and learning experiences.

- First trail run course in October 2025.



Thank you!

"Education breeds confidence. Confidence breeds hope. Hope breeds peace." - Confucius

isiLimela Space Systems

Dirk Slabber