



OPEN
SOURCE
SATELLITE

The Open Source Space Ecosystem

Anita Bernie, KISPE Space

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abernie@kispe.co.uk

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Open Source Satellite



Contents



Convergence of Open Source and Space

OSCW 2019

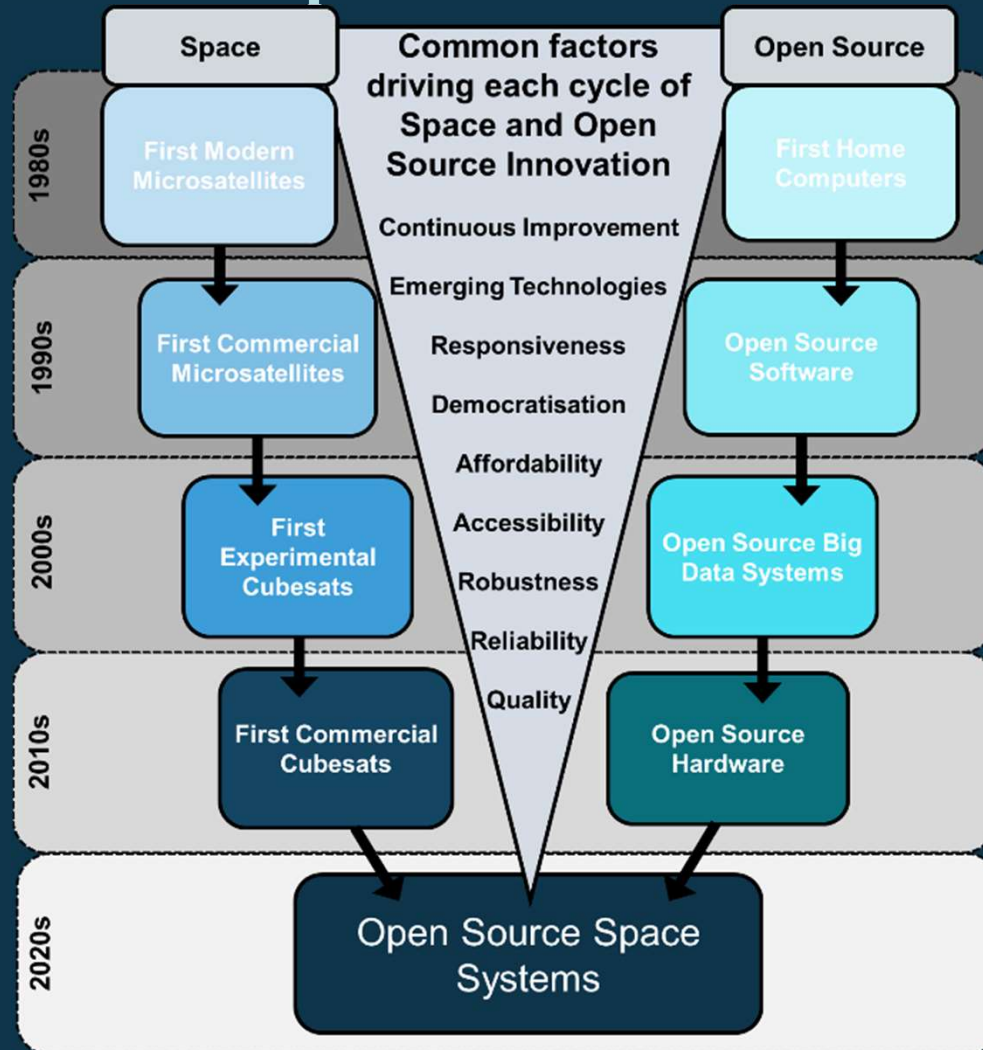
Open Source Space Ecosystem

Open Source Satellite Programme

Participant discussion and contributions

Further questions or want to get involved?

Convergence of Open Source and Space



1980s: First modern microsatellites and first home computers

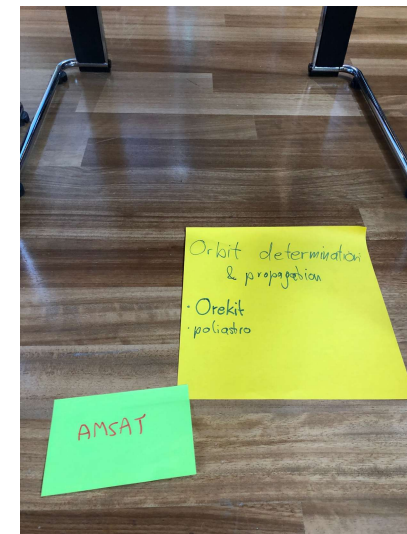
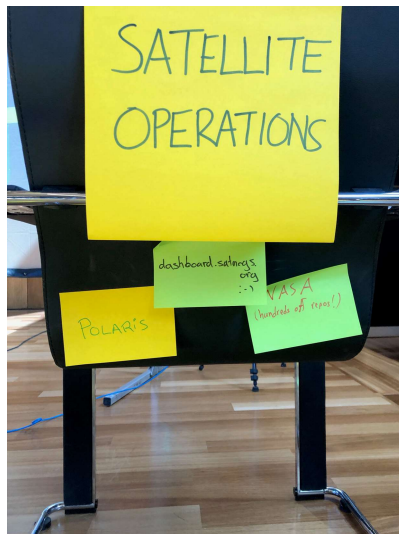
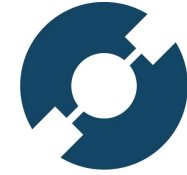
1990s: First commercial small satellites, LINUX and MySQL

2000s: First cubesats, GitHub, BitLab

2010s: Commercial cubesats, Arduino, RPi, maker community

2020s: First Open Source mission results, Open Source Space

OSCW'19: Value Chain



Open Source Space Ecosystem



Microsatellite Systems, Spacecraft & Missions



Cubesat Systems, Spacecraft & Missions



Ground Stations



Modelling, simulation, analysis and design



Operations, Tracking, Orbit Prediction, Space Situational Awareness (RF and Optical)



Satellite Imagery Analysis



Training Models



Testing



Components



Rocketry



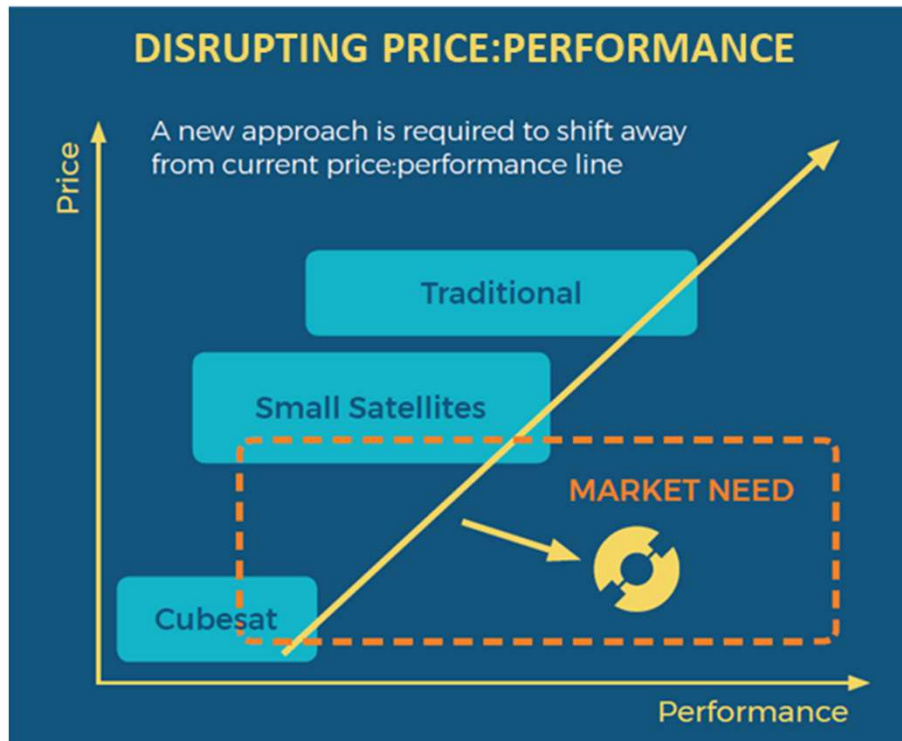
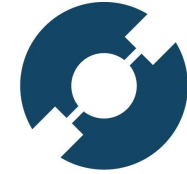
Exploration



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Open Source Satellite Programme



 **OPEN SOURCE SATELLITE**

A cost-effective modular, scalable, flexible, robust and reliable microsatellite platform

Delivering:

- Spacecraft mass 20kg-250kg
- 70% payload mass fraction
- 10W-1kW payload power
- 14-month delivery
- 5-7 year lifetime
- Flexible payload accommodation
- 3-axis stabilised
- Altitude 400km-850km
- Launch vehicle flexibility
- Rapid commissioning
- Low-cost operations

Price target of \$1m for 50kg, £1m for 100kg

Developing the world's first open source microsatellite platform

Platform processor selection

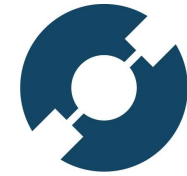


Electron Testing at UoS REEF facility



Next step...Proton testing!

Collaborations



Discussion and Contributions

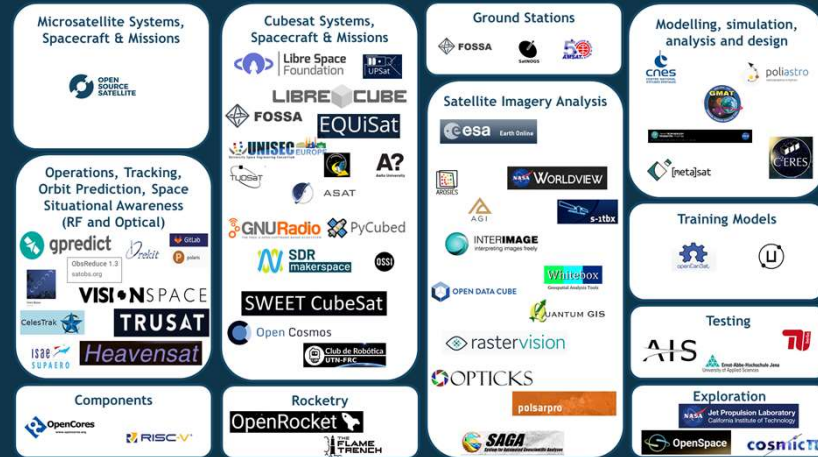


Which segments and capabilities are most in need of development?

Which additional areas need to be included?

“Who” is missing from the map?

Are there alternative ways of categorisation?





Get Involved:



www.OpensourceSatellite.org/register



[linkedin.com/company/open-source-satellite](https://www.linkedin.com/company/open-source-satellite)



@SatelliteOpen



info@opensourceSatellite.org



Building A2, Cody Technology Park,
Farnborough, GU14 0LX



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