PRODUCT DATASHEET Advanced Issue, Preliminary Only

Forwards Looking Imager

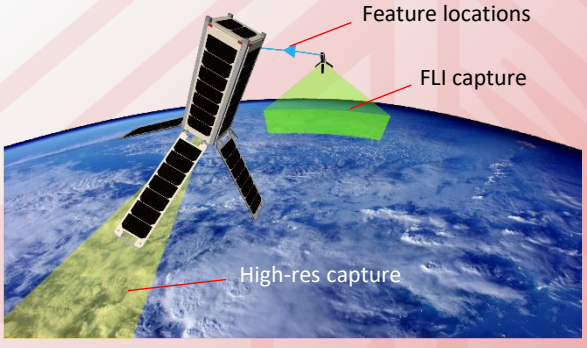
Advanced Feature Detection System

The Forwards Looking Imager provides real-time and actionable knowledge about the upcoming sub-satellite environment for onboard planning of effective operations. Designed initially for the LEO environment to meet the needs of CubeSat and small satellite systems, the deep learning-based algorithms can be trained to report incoming subsatellite observation features such as clouds or water turbulence to maximise utility of mission payloads, ensuring optimal use of resources such as power and bandwidth. Highly configurable for user applications, challenge us to meet the demands of your mission in LEO, or elsewhere.

FEATURES

- Provides up to **4 minutes future knowledge** of the subsatellite environment for LEO missions
- Enables goal-focussed, real-time decision-making and planning, **maximising the utility of onboard resources**
- Deployable in constellations to enable networked responses to environmental changes
- Runs bespoke neural networks to **suit your application**
- Applicable to Earth observation, telecommunications and beyond-LEO missions
- Available as a **highly-configurable imager** and FPGA-based module or embedded IP blocks
- Support **external imager** integration
- Integrates with simulation environment for end-to-end testing and generation of realistic input imagery
- Module **compatible with standard CubeSat** structures and form factor
- **Additional processing and customisation**, including absolute pointing, data compression and more, available on request

Visualised cloud detection result



Example tip-and-cue application, driven by advance knowledge of the environment

TYPICAL SPECIFICATION

Performance	
Swath width	up to 1000 km
Inference resolution	250 m to 2 km
Feature confidence	90-97% (case dependent)
Inference time	< 2 s, < 5 s to OBC
Look ahead	up to 240 s

System	
Camera system	RGB sensor, filter & lens
Algorithm	Custom CNN
Processing	FPGA SoC-based

Physical	
Active power	< 2 W
Operating temp	-20 to 65°C
Mass	< 100 g | 250 g
Design environment	3 years, LEO
Mechanical housing	95 x 95 x 35 mm
Interfaces	Harwin Datamate

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CRAFT PROSPECT

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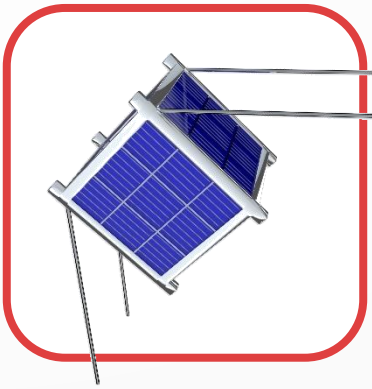
CRAFT PROSPECT

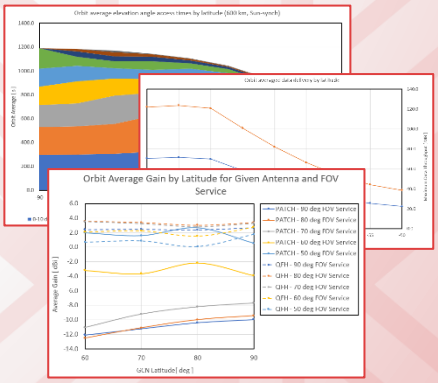
A Space Engineering Practice

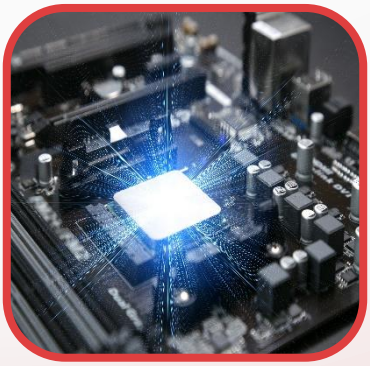
How we can support your mission...



Small space mission & systems engineering

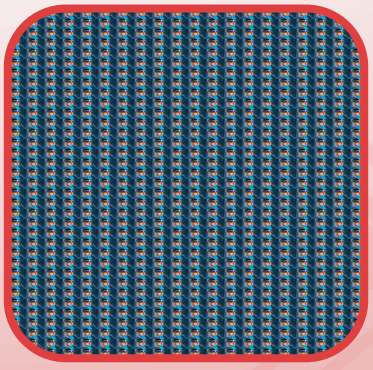
Our design and operations team support ongoing missions, enabling developers to explore trade spaces and meet quality of service metrics based on realistic small satellite capabilities. Get experienced and independent insight into CubeSats.





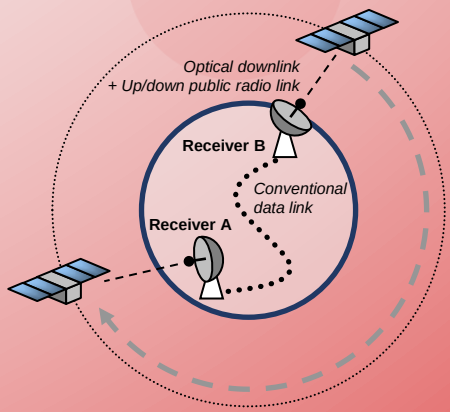
Enabling technology products and services

We have developed AI / ML based technologies to enable or enhance your mission return allowing more cost effective and responsive operations. Challenge us to deliver more autonomous and agile systems for your mission service.



Novel downstream space applications

Working across the supply chain from end user to technologist we are leading the development of new space systems and services such as quantum-enabled secure telecommunications. How can we help to deliver your missions?



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