DCUBED

Do Big Things in Space

www.dcubed.space

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Dcubed Fast Facts

LOCATIONS	Germany and USA
FOUNDED	2019
TEAM	40+ and counting
FLIGHT HERITAGE	30+ products in space
CUSTOMERS	In 20+ countries across 4 continents

Shape-Memory Release Actuators

STATE OF THE ART REPORT

Release Nuts



Pin Pullers

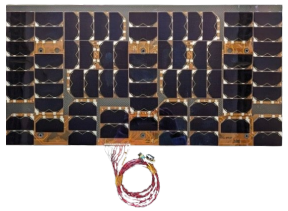

Product	Nano Release Nut **SmartPack nD3SP**	Nano Release Nut **nD3RN**	Micro Release Nut **uD3RN**	Nano Pin Puller **nD3PP**	Micro Pin Puller **uD3PP**
Size & Mass	74x35x**4mm**, 27grams	17x17x17mm, 12grams	25x25x25mm, 40grams	17x17x17mm, 12grams	25x25x25mm, 40grams
Tested Load	Axial Load: 200N	Axial Load: 380N	Axial Load: 4kN	Shear Load: 50N	Shear Load: 250N
TRL	8 (9 in 2024)	9	8 (9 in 2024)	9	7 (9 in 2024)
Temperature-Range	-65°C to 75°C (Operational)				
Field-Resettable	150+ times				
Leadtime	6-12 weeks*				

*depending on order intake

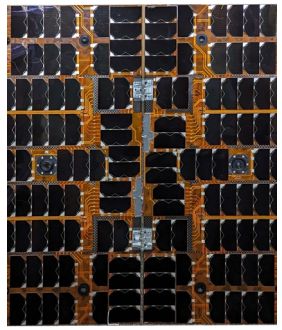
Check out our actuator videos here.

Nano & SmallSat Solar Arrays

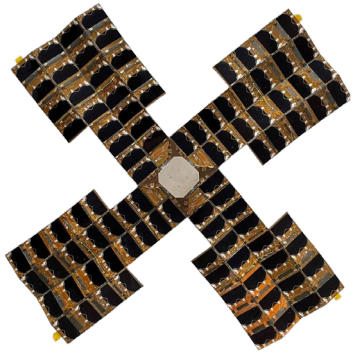
BODY MOUNTED
(80-400W)



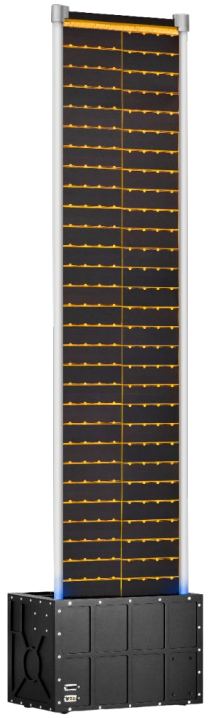
DEPLOYABLE
(120-600W)



ORIGAMI
(100-400W)



IN-SPACE MANUFACTURED SA
(500-2000W)



90% cost reduction
for Blanket Solar Arrays

33% less mass/area
enabled by flexible PV

31% less leadtime
due to
modularity

42% higher power/mass
enabled by 3D printing

45% more power/volume
enabled by 3D printing

100% scalability
for any SA

Time for a paradigm shift

PROBLEM

Current solar array solutions can not be scaled

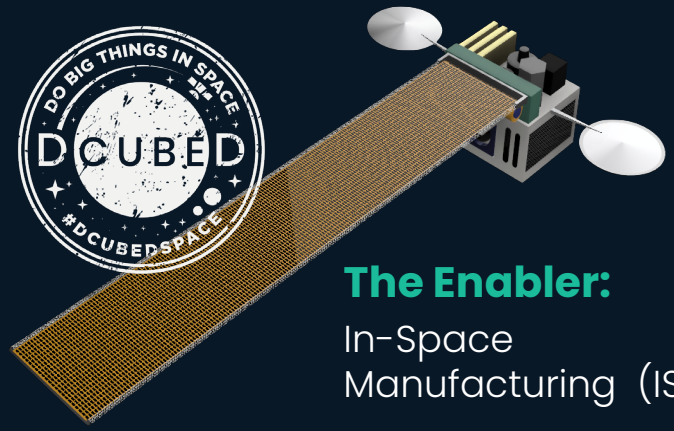
Body mounted panels

Only a few hundreds of Watt possible

Rigid folded panels

SOLUTION

Combining advanced flexible solar arrays with disruptive new tech

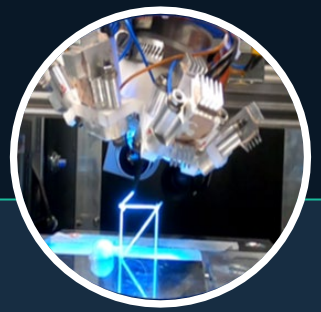


The Enabler:

In-Space Manufacturing (ISM)

Our Goal:

is to provide 1-10kW solar arrays with a cost of <50$/Watt (currently its ~5.000$/Watt)



Two orders of magnitude more affordable

Our In-Space Manufactured Solar Array: supercharging NewSpace satellites

DCUBED's EXISTING PRODUCTS:

Origami Solar Arrays

Proprietary deployable technology.

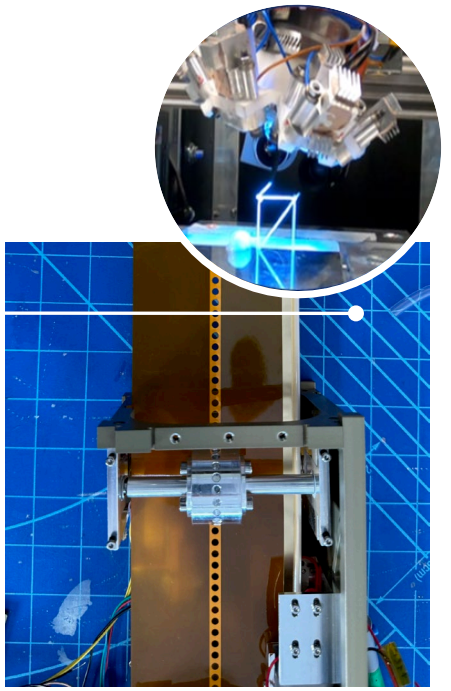
Release Nuts & Pin Pullers

Patented mechanical switches.

FIRST IN THE WORLD

THE GAME CHANGER / ENABLER:

In-Space Manufacturing (ISM)



Getting ready for in-space demo:

Dcubed Goals

- Demonstrate the feasibility of the technology
- Outreach and gain market traction
- Establish possible applications to prove customer value

Mission Objectives

- Demonstrate ISM in free space
- Capture deployment and structure visually
- Generate Power in Space

IOD mission status

IOD on Exotrail/SpaceX in Q4/2025

- 16U cubesat formfactor
- 1m solar array supported by ISM structure

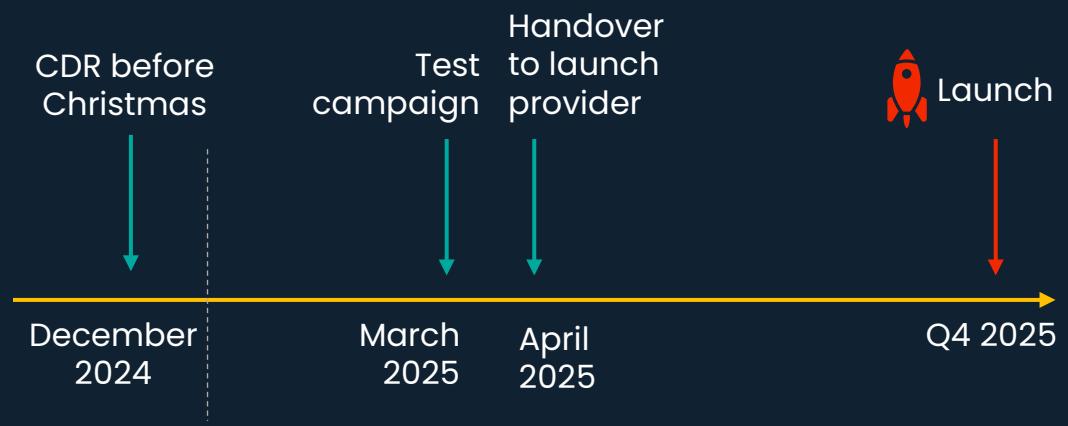
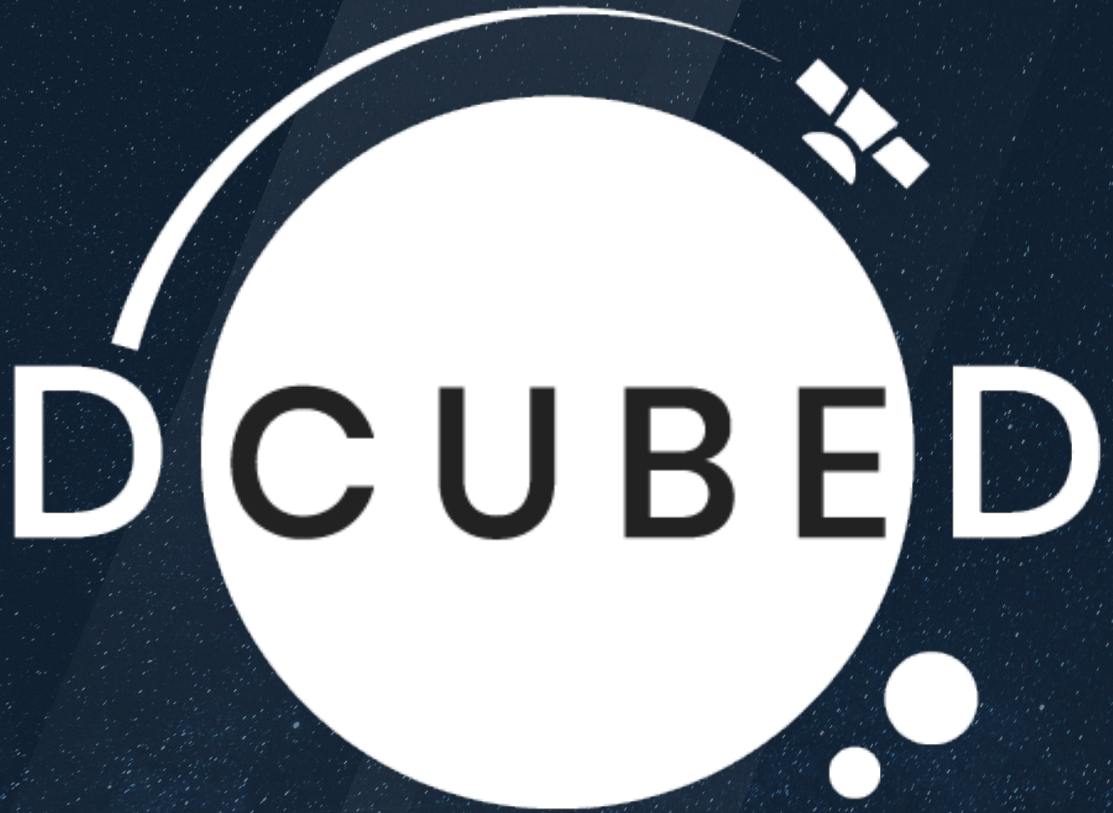


Figure: Lab tests done on polyimide material to test resin curing and shape definition of the boom

GET TO SPACE **FASTER**,
CHEAPER, AND **BETTER** WITH



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