



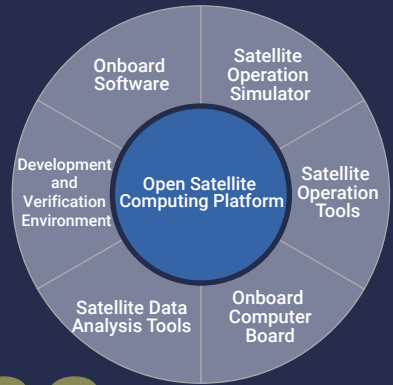
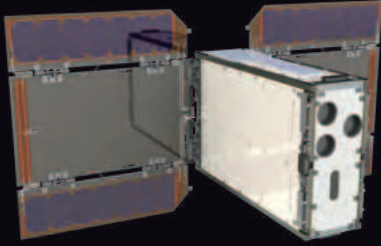
**Empowering people with satellites  
for a prosperous future**

**Company Information**  
ArkEdge Space Inc.

# Our Satellites

Based on advanced technologies developed by the University of Tokyo's Intelligent Space Systems Laboratory (ISSL), which was the world's first to successfully develop and operate a CubeSat, ArkEdge Space develops high-performance satellites at ultra-compact sizes by mutually utilizing advanced technologies in lunar and deep-space exploration and the results of earth-based businesses.

## As a Comprehensive Micro-satellite Integrator



# 01

### Supporting a Variety of Missions

Employing satellite systems capable of supporting such diverse missions as marine communications, positioning and location information, satellite remote sensing, lunar infrastructure and deep space exploration.

# 02

### Rapid and Efficient Satellite Mass Production

Optimized at every stage of satellite mass production, from design to testing and assembly, delivering a fast turnaround and high efficiency.

# 03

### Providing Space Development with an Open Philosophy

Realizing flexible and fast development, implementation, and operation of satellites through the use of open and standardized software systems.

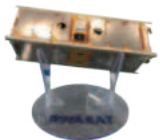
## Satellite Series

We are developing a wide variety of small satellites that can provide such services as Earth observation, communication, and location information. Beginning from 2024, we would shift into a full-fledged satellite launch and utilization phase.

### 3U & 6U Satellites

#### Operating Satellites in orbit

Launched in 2019

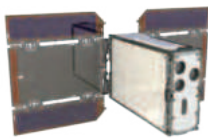


**RWASAT-1**

3U-class IoT satellite

#### Under development

From 2024 onwards  
7 launches planned

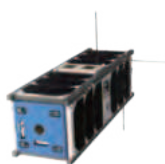


**6U multi-purpose bus series**

Mass production model of a 6U-class multipurpose satellite (METI and NEDO funded project)

#### Operating Satellites in orbit

Launched (deployed)  
in 2023

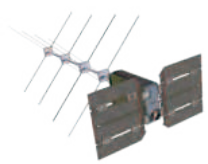


**OPTIMAL-1**

3U-class demonstration platform

#### Under development

Scheduled for multiple  
launches from 2024 onwards



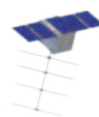
**VDES\* demonstration satellite**

6U-class satellite for monitoring oceanographic conditions (Commissioned project by METI and NEDO VDES\*)

### 30-100kg class

#### Under development

Scheduled for 7 launches  
since 2024 onwards

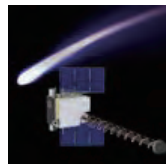


**VDES - Marine observation satellite**

Communication and marine observation satellite for ships (Commissioned project by METI and NEDO)

#### Under development

Scheduled for launch  
around 2029



**Comet Interceptor**

Comet exploration satellite (Joint project with JAXA and ESA)

### >100kg class

#### Under development

Demonstration satellite scheduled  
for launch around 2028

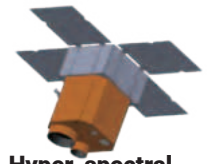


**Lunar positioning satellite**

Positioning satellite for lunar activities (under development through a JAXA commissioned project)

#### Under development

Demonstration satellite scheduled  
for launch around 2027



**Hyper-spectral remote sensing satellite**

Multi-frequency observation satellite for the environment, agriculture and forestry (METI-funded project)

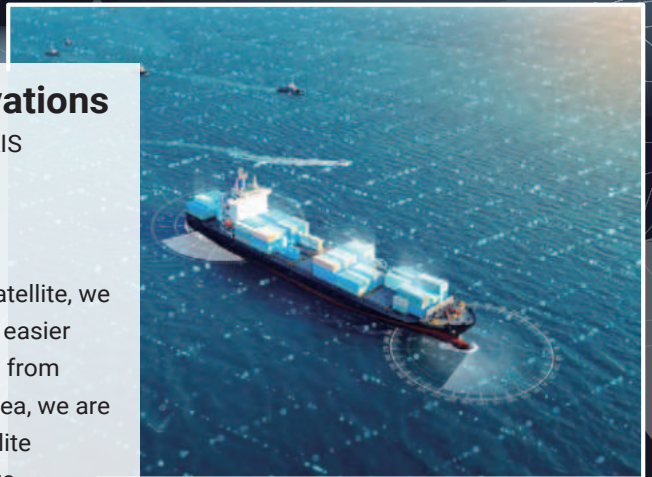
# Projects

## Next-generation Maritime Communications and Information Infrastructure

### Maritime Communications and Marine Observations

Satellite VDES (VHF data exchange system) is an advanced version of AIS (automatic identification system), required in all large vessels, and is a next-generation marine information infrastructure that enables two-way communication with distant vessels via satellite.

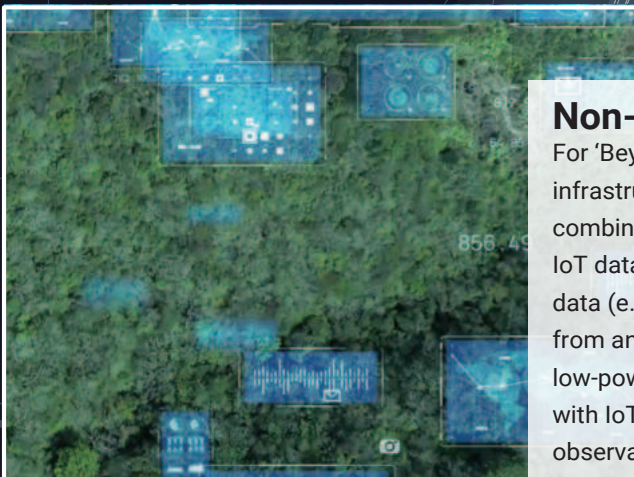
By developing satellite systems that support VDES communication via satellite, we aim to contribute to the digitalization of various maritime operations and easier port entry for navigation in distant seas outside the range of radio waves from ground stations. To track the movements of ships and other vessels at sea, we are also developing solutions that combine AIS/VDES information with satellite remote sensing data such as optical, SAR, and radio wave observations to estimate vessel positions and monitor other maritime domain awareness.



## Supporting Communication Infrastructure from Space

### Non-terrestrial Networks

For 'Beyond 5G' next-generation information and communications infrastructure, there is growing interest in non-terrestrial networks (NTN), which combine space infrastructure with high-altitude platform stations (HAPS). IoT data collection is a communication service for receiving and transmitting data (e.g., soil moisture content, water temperature, and wave height) acquired from any ground-based IoT sensors using a communication standard for low-power, long-distance communication. Our standard satellites are equipped with IoT communication capabilities that can provide high-frequency observation opportunities. We are also working to establish high-speed, low-latency, multi-connection optical communication links and high-capacity data downlinks through the development and demonstration of optical communication satellites between low earth orbit (LEO) and HAPS, and between LEO and geostationary orbit (GEO) by installing optical communication modules on small satellites.



### Satellite Remote Sensing

Satellite remote sensing is a generic term for technologies used to study the shapes and properties of targets from a distance via satellites, and the data collected from space is utilized in various fields. Through the deployment of many small satellites (constellations) equipped with hyper-spectral sensors, we aim to achieve multi-frequency observations of greenhouse gases, deforestation, crop growth conditions, and ocean pollution. We are also developing a geospatial platform that integrates data obtained from satellites and ground sensors.

We will make satellite data more accessible and useful to more people through our data platform, which can be operated intuitively without specialized knowledge and can be customized according to need.



## Helping to Solve Global Issues



## A Compass for Navigating Tomorrow's Path

### Satellite based Positioning, Navigation and Timing (PNT)

Satellite based PNT is a system that uses signals transmitted from satellites to measure the locations of objects on the ground. It is widely used by smartphones and car navigation systems to display the best routes.

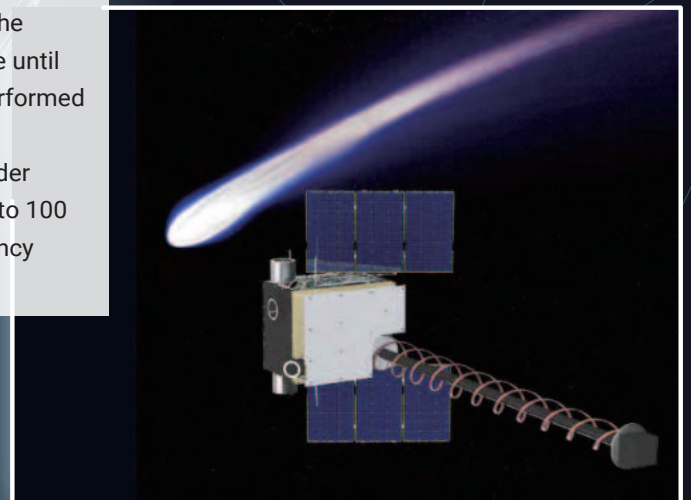
In cooperation with industry, academia and government, we are working on the construction of an advanced lunar positioning satellite system (a lunar version of GPS) as basic infrastructure for the Artemis program, for example, to support human activity on the Moon, including the development of a lunar base and lunar exploration with crewed rovers. In recent years, there has been an increase in activities aimed at interfering with existing satellite positioning systems and disguising locations, which have had serious impacts on aircraft operations and other social systems. Given these circumstances, we have been investigating new satellite positioning systems that utilize small, LEO satellites to complement existing systems and help enable new services such as automated driving

### Deep Space Exploration

ArkEdge Space is undertaking projects for pioneering the future of deep space exploration. The "Comet Interceptor" is a joint mission of the European Space Agency (ESA) and the Japan Aerospace Exploration Agency (JAXA) and is the world's first project aimed at directly exploring long-period comets or interstellar objects. The spacecraft for this project comprise a main spacecraft and two probes, and we have been entrusted with the development of one probe. This marks the first case in which JAXA has commissioned a Japanese startup to develop a deep space probe. The spacecraft are scheduled to be launched in 2029 and to wait in space until the discovery of a suitable target for which a flyby mission can be performed by 2035.

Additionally, we are also working with academic institutions to consider lunar and deep space probes of various sizes ranging from 6U-class to 100 kg-class. We will continuously strive to achieve low-cost, high-frequency deep space exploration with small satellites.

## Challenging New Frontiers



# HISTORY

Seven 6U satellites to be launched beginning from fall 2024



Completed development of a domestically produced Attitude Determination and Control Subsystem (ADCS) integration unit for nanosatellites.



Selected for METI's Small Business Innovation Research Started development aimed at demonstrating advances in the satellite remote sensing business

Selected for NEDO's Development and Demonstration Project of Maritime Situational Awareness Technology Based on a Constellation of VDES Satellites Started development aimed at demonstrating a VDES satellite constellation

Selected as a contractor for JAXA's Development, System Testing, and Operational Support of the Comet Interceptor Probe System

Selected for METI's Satellite Data Utilization Infrastructure Enhancement Project (project to develop hyper-spectral sensors for small satellites)

Selected for METI's Research and Development to Promote Space Development and Utilization Started development aimed at domestic production of an AOCS unit

Changed the company name to ArkEdge Space Inc.

Received an order from the Taiwan Space Agency for the nanosatellite ONGLAISAT

Successfully deployed RWASAT-1, a nanosatellite ordered by the Rwandan government, into orbit

Founded Space Edge Lab, Inc. (former company name)

2024

Signed MoU with Kyrgyzstan and Tajikistan on climate change measures, etc.

Signed MoU on the utilization of space in natural environment management with the Paraguayan Space Agency (AEP)

Selected as a contractor for JAXA's Element Prototype Experiments for a Lunar Positioning Demonstration Mission (B)

Commenced cooperation with three Brazilian institutions regarding collection of climate change/natural data and environmental conservation using satellite data, etc.

Participated in the design support and specifications for the magnetosphere exploration nanosatellite 'GEO-X' being pursued by the University of Tokyo, the Tokyo Metropolitan University and others



Completion of the Makinohara Ground Station in Makinohara City, Shizuoka prefecture

2023

Successfully deployed, established communications with, and acquired information from the CubeSat OPTIMAL-1

Selected as a contractor for JAXA's Conceptual Consideration of Lunar Navigation System Technical Demonstration Mission (B)

Raised JPY 2.3 billion in Series A round of financing

Selected as a contractor for JAXA's Study on the Development of Positioning and Communication Technologies for Lunar Activities

2022

Selected for METI's Project for Demonstrating Nanosatellite Constellation Technologies and began development aimed at constructing a 6U satellite constellation

2021

Raised a JPY 400 million in Seed round

2020

Implemented joint LoRa communication demonstration between Japan and Rwanda using RWASAT-1

2019

Received METI's Industrial Technology Practical Development Subsidy and began development of the OPTIMAL-1 nanosatellite

2018

Selected for the NEDO Entrepreneurs Program (NEP)

## Awards and Recognition

2024: **Forbes Asia's 100 to Watch 2024**

: Received the **Mizuho Innovation Award 2024 Q3** by the Mizuho Bank

: Recognized as one of the **15 EY Innovative Startup 2024** by Ernst & Young ShinNihon LLC

2022: Selected as one of the **"100 Amazing Ventures of 2022"** by the Weekly Toyo Keizai Magazine

2017: Received the jury's Special Award at the **S-Booster 2017** space idea competition, sponsored by the Cabinet Office for the "Satellite Network to Connect the World"

# ABOUT US

## Empowering people with satellites for a prosperous future

Our mission is to provide comprehensive solutions through the design, development, manufacture and operation of the world's most advanced satellite constellations.

We are committed to building a constellation of satellites for Earth observation, maritime communications and non-terrestrial networks to help address global issues such as climate change, and we are also taking on the challenge of extending humanity's "edge," by building lunar infrastructure and exploring deep space.

### Corporate Profile

**Company Name** ArkEdge Space Inc.

**Headquarters** 3F, Dome Ariake Headquarter,  
1-3-33 Ariake, Koto-ku, Tokyo, 135-0063 Japan

**CEO** Takayoshi Fukuyo

**Founded** July 18, 2018

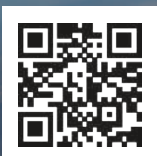
**Number of Employees** 118 (as of September 2024)

**Capital** \$200 million (as of September 2024)

**Our Business**

- Design, manufacture, and operation of small satellites
- Building nanosatellite constellations
- Providing satellite related components and software
- Provision of satellite control ground station operation services

**URL** <https://arkedgespace.com/>



ArkEdge Space Website



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