

Provision of MRV solutions for nature-based carbon credits

Archeda, Inc.

Case Overview

Archeda develops MRV (Measurement, Reporting, and Verification) solutions for nature-based carbon credits (including ARR, REDD+, and AWD), using satellite data and AI analysis for forests, farmland, and mangroves. By providing end-to-end support from identifying suitable project sites to the analyses required for PDD (Project Design Document) preparation and monitoring, Archeda reduces the burden on carbon project developers from conventional field surveys and manual processes. This contributes to greater efficiency in the carbon credit creation process and improved transparency and reliability of credits.



Key points regarding receiving the award (Comments from the selection committee)

Archeda developed an MRV platform using satellite data and provided end-to-end support from data provision to analysis, thereby simplifying and streamlining the credit creation process. It is highly commendable that this has enabled more carbon project developers to leverage satellite data and issue high-integrity credits with greater transparency and reliability.

This initiative expands the use of satellites beyond greenhouse gas monitoring and climate change analysis into the field of carbon credits as financial and social infrastructure, and is also significant from the perspective of environmental administration.

Concrete Results

1. Contribution to creating new areas for space development and utilization

With the expansion of the carbon credit market, there is growing demand for reliable credit creation. However, conventional methods face limits in terms of labor and cost, and satellite data has also been difficult for carbon project developers to use due to its technical complexity. This initiative aims to simplify and streamline the credit creation process by developing an MRV solution that utilizes satellite data and providing end-to-end support from data provision to analysis. This will enable more developers to use satellite data and issue credits with greater transparency and reliability. The initiative expands the use of satellite data into the new field of carbon credits as financial and social infrastructure, representing a challenge that significantly enhances the economic value of satellite data.

Archeda aims to support the creation of 25 projects by FY2027 and 240 by FY2030 (2% global market share), contributing to annual CO₂ reductions of approximately 6.7 million tons.

2. Contribution to expanding the space development and utilization market

Outside Japan, Archeda currently supports a total of nine nature-based carbon projects across five Asian countries, including the Philippines, Vietnam, Indonesia, Cambodia, and Laos. The projects span a wide range of types, including ARR (afforestation), REDD+ (forest conservation), AWD (intermittent irrigation), and mangrove restoration. Since its founding, demand for MRV solutions leveraging satellite data has continued to grow, and sales for the current fiscal year are projected to increase by approximately 250% year-on-year for the second consecutive year. Archeda is also advancing collaboration with government agencies and local universities across Asia, strengthening partnerships with local partners through MoU signings. Going forward, Archeda will continue promoting the social implementation of MRV solutions powered by satellite data and contribute to expanding the space development and utilization market by deploying Japan-originated technologies globally.

3. Contribution to the advancement of the economy and society

This initiative utilizes satellite data to contribute to the advancement of the domestic carbon credit market. It aims to address challenges in carbon project development — including project site selection and securing cost efficiency and reliability in monitoring — through MRV solutions powered by satellite data. This makes it possible to provide low-cost, scientifically based monitoring to businesses that have not been able to fully leverage satellite data, contributing to

the growth of a transparent and sound carbon credit market.

Collaboration with local governments and research institutions is already underway — the Kyoto Prefecture ZET-valley project has conducted surveys on forest CO₂ absorption. The initiative has also attracted strong public attention, including coverage in Nikkei GX (July 2025) under the headline "Using Satellites to Observe Forest Ground Surfaces and Improve Credit Calculation Accuracy." Archeda has also been selected for the NEDO SBIR Promotion Program under the Ministry of the Environment's "ClimateTech Using AI" theme and is working to improve REDD+ monitoring accuracy. Furthermore, Archeda has been selected for the Ministry of Economy, Trade and Industry's "Global South Future-Oriented Co-Creation Project Subsidy" and is recognized as a ClimateTech initiative powered by satellite data.

4. Contribution to technology

The MRV solution developed by Archeda is based on monitoring technologies compatible with diverse carbon credit methodologies, including ARR, REDD+, AWD, and blue carbon. This technology analyzes changes in forests, farmland, and other areas using satellite data, AI, and statistical methods, enabling quantitative visualization of baselines, deforestation risk, AGB (above-ground biomass), and paddy field flooding conditions — while improving efficiency, cost-effectiveness, and reliability compared with conventional methods. Demonstrations are currently underway in Southeast Asia, and six patents have already been obtained.

5. Contribution to promoting public understanding and human resource development

Through media coverage and speaking engagements in Japan and overseas, Archeda communicates the environmental and economic value of satellite data, contributing to greater public understanding of carbon credits and sustainable societies.

▼ Presentation Record

Presentations at COP29 and COP30, APRSAF-31, the Japan-ASEAN Symposium, the JAXA 30th Anniversary Symposium on Earth Observation Data Utilization, and many other events.

▼ Awards and Media Coverage

- Awards: the Focus Systems Award at "Ecotech Grand Prix 2023," the Grand Prize at the "Earthkey Pitch Award," and the WeWork Award at the international startup event "RAMEN TECH 2025," and others.
- Major media: Weekly Toyo Keizai's 2024 edition of "Amazing Ventures 100," "Nikkei GX," Shogakukan's "DIME," and Kushiho Shimbun, and others.

