AOCS Engineer

Job ID	2117
Contract Type	Permanent
Location	Tokyo, Japan
Apply from	Overseas Okay (to be relocated to Japan)
Work type	Hybrid
Japanese Level	Conversational
English Level	Business
Salary	Yearly JPY 5.0 M to JPY 8.0 M
Skills	System Development, Matlab, Satellites
Minimum Requirement	• Bachelor's degree in Aerospace Engineering, Control Engineering, Electrical Engineering, or Robotics Engineering. We will consider an equivalent combination of relevant education and/or experience. • At least 3 years of hands-on experience in the design and validation of control systems, preferably on autonomous systems (satellite, launch vehicle, drone, Unmanned Aerial Vehicle (UAV), self-driving car, robot, etc.). • Thorough understanding of multibody dynamics: coordinate transformation between reference frames, kinematics, conservation of energy and momentum, etc. • Strong analytical and communication skills. • Experience with MATLAB/Simulink. • Experience working with physical sensors and actuators. • Willingness to travel to Employer's factory (Yamato-city) on business trips several times a year.
About the company	**Synthetic Data for Perspective** The employer provides one-stop solutions, using geospatial data from its own SAR satellites in line with its mission to create a progressive world based on real data. We are building a constellation of our own small SAR satellites to provide data and analytic information to governments and commercial entities. We are the only company in the world with the capabilities to both develop and operate its own satellites and provide analytics solutions. We offer subscription-based solutions and new solution development with collaborative prototyping: • Infrastructure development • Energy and natural resources development • Disaster risk management We have already successfully launched two satellites, and are aiming to launch six satellites by 2023 and a constellation of 30 satellites around 2026. According to our calculations, if we can operate 30 small SAR satellites, we will be able to acquire and analyze local ground data within two hours of a disaster anywhere in the world, and provide information that will contribute to decision-making in disaster response. Even if an earthquake, flood or other disaster occurs during the nighttime and it is difficult for people to enter the area, we will be able to quickly observe and confirm the situation.

	Our CREDO: • **Synergy of Spirit:** As part of Synspective, we embark on this journey together, bringing with us our combined experiences and life. As a team, we recognize that the team's goals are also personal goals, and personal goals are the team's goals. We each share a part of the responsibility to succeed. • **Synthesis of Knowledge:** We try to create new value under conditions that have huge uncertainty and volatility. The only way for us to succeed is to progress through trial and error that we learn from and make changes based on our new knowledge. • **Synched with the Future:** We have an obligation to create a sustainable future for the next generations. To do so, we must tackle tough challenges as pioneers, leaving our comfort zones that prevent our growth.
Roles and Responsibility	We are looking for a talented and motivated new colleague to join Synspective's Onboard Software Team. Our team is responsible for the design, development, testing and maintenance of the embedded software running inside Synspective's satellites. We are a small team where control engineers and embedded software engineers work closely together. The Onboard Software Team is part of the Satellite System Development Dept. No1, which is responsible for the development of the satellite system. **Responsibility:** Attitude and Orbit Control System (AOCS) design, analysis, implementation, testing and maintenance. **Details of work:** • Design, implement, test, and validate algorithms used in the AOCS of Synspective's Synthetic Aperture Radar (SAR) satellites, such as: sensor data filtering, orbit and attitude estimation, attitude controller, reaction wheels and magnetorquer control, operation modes control, failsafe mechanisms, etc. • Work closely with the embedded software engineers to integrate the AOCS into the rest of the flight software. • Validate the design through unit testing, Model In the Loop Simulation (MILS), Hardware In the Loop Simulation (HILS), and tests on the physical satellite. • Assist the testing and validation of the AOCS components during the satellite Assembly Integration and Testing (AIT) process. • Model sensors, actuators, and other physical components in MATLAB/Simulink/Simscape and fit the component model using test data. • Take part in the launch campaign: prepare the necessary items for launch operation, monitor the behavior during the critical phase, and provide technical support to the satellite operation team. • Participate in weekly meetings and design reviews. **Selling points of the role:** • Great opportunity for growth as an engineer. • See the complete lifecycle of a satellite, from the early design to the launch and in-orbit operation. • Work in an international team.
Preferred Requirement	• Knowledge of orbital mechanics and satellite dynamics.

	• Experience in the design, implementation and testing of spacecraft attitude and orbit control algorithms. • Experience in modeling physical components such as sensors and actuators in MATLAB/Simulink. • Experience in control law design, beyond classical techniques: non-linear design, optimal design. • Experience in state estimation using Kalman filtering and anomaly detection algorithms. • Experience in model identification. • Knowledge of GNC hardware components such as: reaction wheels, magnetorquers, GPS receivers, gyroscopes, star trackers. • Experience in modeling finite state machines in Stateflow. • Experience programming in C/C++. • Experience in generating C/C++ code from Simulink.
Conditions/ Benefits	**Employment type:** Permanent **Location:** Kiyosumi Shirakawa, Tokyo • Remote work possible depending on the position **Annual Salary:** • Based on experience, ability, and previous work experience • Personnel evaluation system every 6 months **Hours:** Flextime system • Core time from 11:00 - 15:00 • 2 days off a week (weekends) including Japanese public holidays • 10 days of paid time leave granted first year with an increment of 1 day every following year (ex. 11 days in the second year) up to a maximum in accordance with Japan's labor laws. **Probation:** 3 months **Benefits:** • Language learning support (Up to 30,000 yen /month) • Employee stock option • Job-related learning expenses covered • Side business allowed • Social insurance and annual medical check • Maternity and childcare leave • No dress code • No smoking on the premises (outdoor or indoor smoking areas available)
Interview Process	1. Application Screening 2. 1st Interview 3. 2nd Interview 4. 3rd Interview 5. Offer ※ This process is subject to change.
How to Apply	Please send your resume and a cover letter detailing why you believe you are a strong fit for this position to asif.matservices@gmail.com