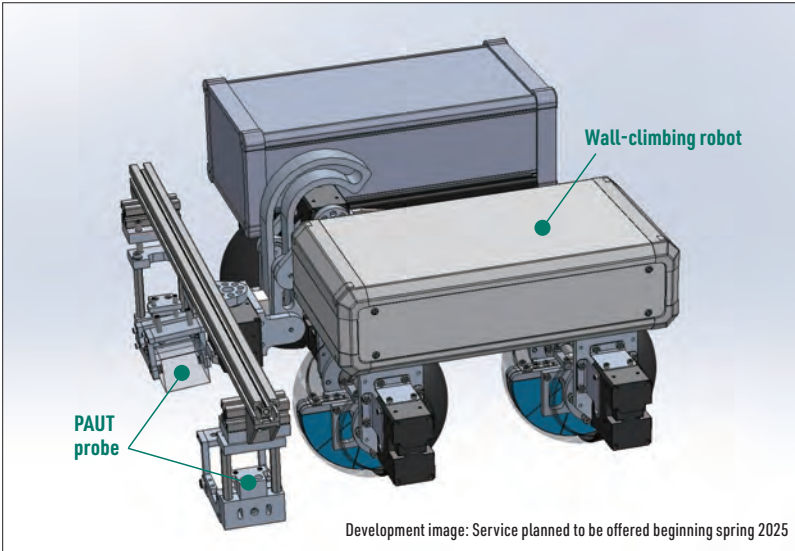


# SHI-ATEX Co., Ltd.



An expert in radiation application and inspection/diagnosis technologies. Contributing to offshore wind power facilities with a proven record of inspection/diagnosis at onshore wind power facilities

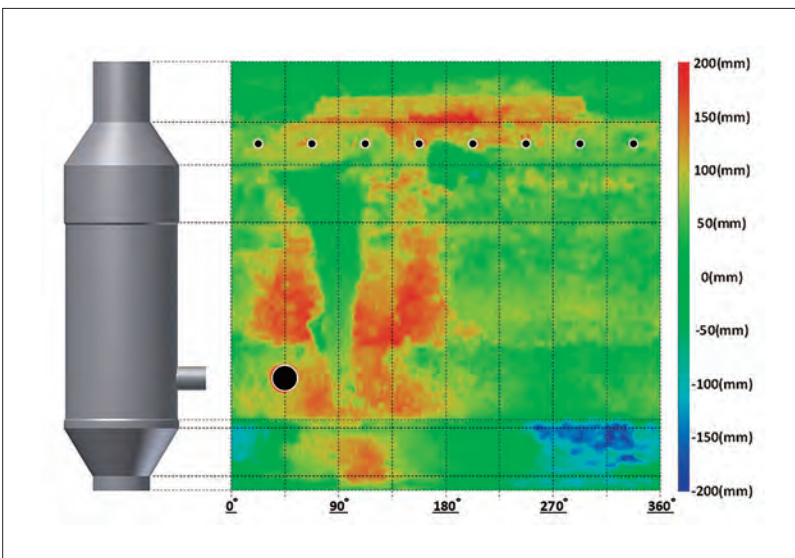
Category O&M > Inspection with Wall-Crawling Robots



## Non-destructive inspections performed by wall-climbing robots for steel structures in combination with PAUT probes

SHI-ATEX is planning to assist maintenance inspections of offshore wind power generation sites through the provision of weld line inspections using wall-climbing robots for steel structures that are currently under development at the Sumitomo Heavy Industries headquarters, incorporating the company's Phased Array Ultrasonic Testing (PAUT) technology. In the future, SHI-ATEX aims to develop further variations, including a wireless type and a self-driving function to facilitate robots' autonomous movement along weld lines. Providing cross-sectional images revealing the internal conditions of objects being inspected, PAUT can be used in inspections of flaw-objects with a variety of shapes and in various locations. In addition to its long track record performing inspections and diagnoses at critical facilities in ironmaking and petrochemical plants, the company also maintains a robust workforce of highly skilled engineers and a record of achievements including experience providing support for onshore wind power generation facilities and the acquisition of PAUT-related patents.

- No. of members with relevant technical qualifications (as of Oct. 2024): PAUT (internal certification), 20 total; JSNDI (The Japanese Society for Non-Destructive Inspection, level 2 or higher), 139 total; ASME Level II or higher (in-house certification), 21 total
- Patents (PAUT-related): Flaw-detection method for shaft components (no. 5325394), flaw-detection method for testing cylindrical test objects (no. 6014525)



## Measurements performed by 3D laser scanners and high-level analysis

The 3D laser scanner measures objects' shapes, evaluating discrepancies from diagrammed dimensions and amounts of change over time. SHI-ATEX uses various types of 3D laser scanners to perform evaluations suited to different demands, including long-range types for environments preventing easy human access, such as hazardous areas and locations high off the ground, and short-range types to satisfy requirements for higher precision. **With its advanced data analysis capabilities and analysis skills based on extensive experience, SHI-ATEX is equipped to perform inspections and analyses of cylindrical structures.** The company is actively working to develop new methods to improve inspection quality and has acquired patents related to 3D measurement technologies.

- No. of members with relevant technical qualifications (as of Oct. 2024): 3D (internal certification), 32 total; drone use (in-house certification), 15 total
- 3D laser scanners: Possess multiple long-range and short-range types
- Patents (3D inspection-related): In-vessel (circular tower) inspection (no. 6482435), measurement of object thicknesses, etc. (no. 7129243)

### Adoption Record

#### Extensive track record performing inspections with PAUT



PAUT-based survey and diagnostic services are chiefly carried out in critical facilities in ironmaking and petrochemical plants, including crack inspections and wall-thinning inspections of weld lines, components, shaft products, etc. In terms of onshore wind power generation sites, PAUT has been applied in inspections of yaw gears, cracking inspections of turbine rotor main shafts, tower fastening bolts, and more.

#### Advanced 3D analysis technologies earning the confidence of an extensive customer base



With highly skilled employees at multiple locations in Japan, SHI-ATEX provides 3D measurement services throughout Japan. The company has earned the trust of clients in a range of industries and receives requests to perform repeated 3D measurements over the long term. Using accumulated measurement data, the company provides useful information on changes over time, significantly contributing to preventive maintenance.

### Main Equipment and Machinery

- PAUT Devices (excluding budget models): Manufactured by TPAC, ZETEC, Olympus, Evident / 17 units
- 3D Laser Scanners: Long-range (manufactured by Leica and Trimble), short-range (manufactured by Creafom and SHINING3D) / 10 units
- Drones: Indoor (manufactured by Liberaware and FLYABILITY), outdoor (manufactured by ACSL) / 8 units
- Radiation Utilization Services: Ion beam services, electron beam services, microbiological testing, etc. / Saijo headquarters and 3 other centers
- Inspection and Diagnosis Services: Non-destructive testing (radiographic testing, ultrasonic testing, etc.), inspection and measurement services (3D laser scanning and analysis, drone inspection, etc.) / Saijo headquarters and 7 other offices

### Company Information

Business: Radiation utilization services, inspection and diagnosis services  
 Location: 1501 Imazaike, Saijo, Ehime Prefecture, 799-1393 Established: October 1979  
 Capital: 200 million yen Employees: 186 Representative: President Isao Gonda  
 Tel: 0898-65-4868 Offices: Tokyo, Osaka, Ibaraki, Kanagawa, Chiba, Aichi, Okayama  
 Metropolitan Area Contact: Keihin Sales Office, Yasuaki Miura  
 Tel: 044-230-2377 / 090-3186-0335  
 E-mail: yasuaki.miura@shi-g.com URL: <https://www.shi-atex.com>