

## Hibot and Vinçotte perform inspection of bunkered tanks in a nuclear waste facility

(Tokyo, Nov. 10th, 2023) Hibot Corp., an innovative robotics start-up and pioneer of the RaaS (Robot as a Service) model for the inspection and maintenance of industrial infrastructure, and Vinçotte, member of KIWA group, have successfully performed robotic inspection of bunkered tanks of a nuclear waste facility in confined and hazardous spaces.

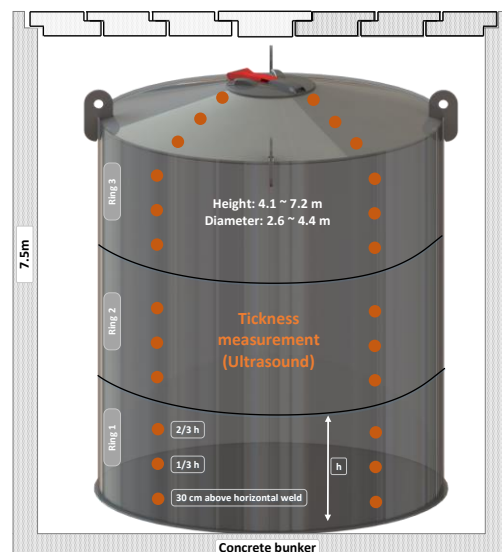
### Background

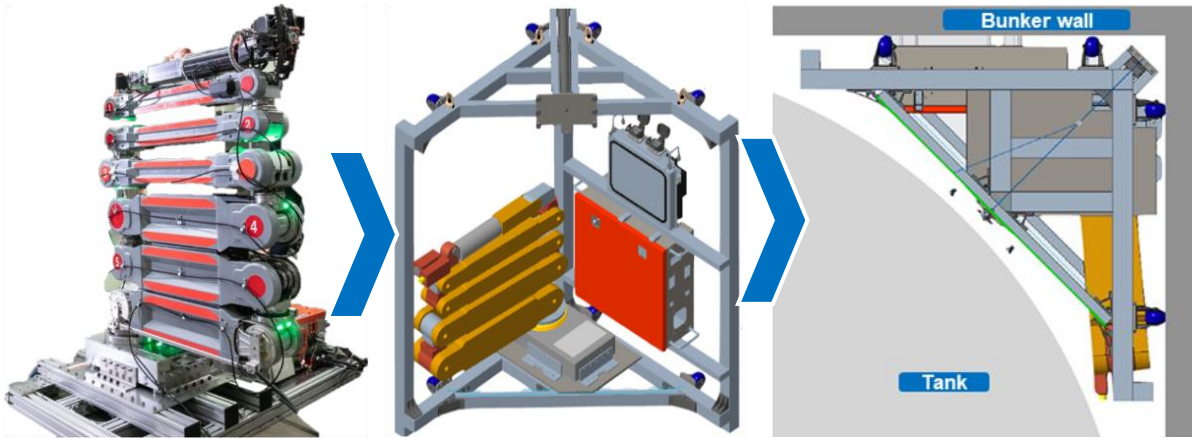
Vinçotte, member of KIWA group, was contracted by Belgoprocess, a subsidiary of NIRAS (the Belgian National Agency for Radioactive Waste and enriched Fissile Material), for visual inspection and thickness measurements of bunkered storage tanks on their Site 2 wastewater processing facility. Due to presence of ionizing radiation and the risk of radioactive contamination, it was decided to utilize a remote inspection technique.

### The challenge

Most of the storage tank is stainless steel, which precluded the use of magnetic crawlers. Suction-based crawler robots and UAVs (drones) were deemed unsuitable due to the high risk of contamination in such environments. In addition, confined spaces around the tanks made it impractical to use scaffolding.

Vinçotte relied on their robotics partner hibot to deliver Float Arm, an articulated robotic arm developed for multipurpose NDT inspections. Float Arm was packaged against contamination and fitted with the appropriate sensor payloads. In addition, a dedicated cage was developed and commissioned to provide the robot with access to the narrowest corners of the deep bunkers using the existing overhead cranes. These are places that would otherwise remain inaccessible to people or other inspection devices.



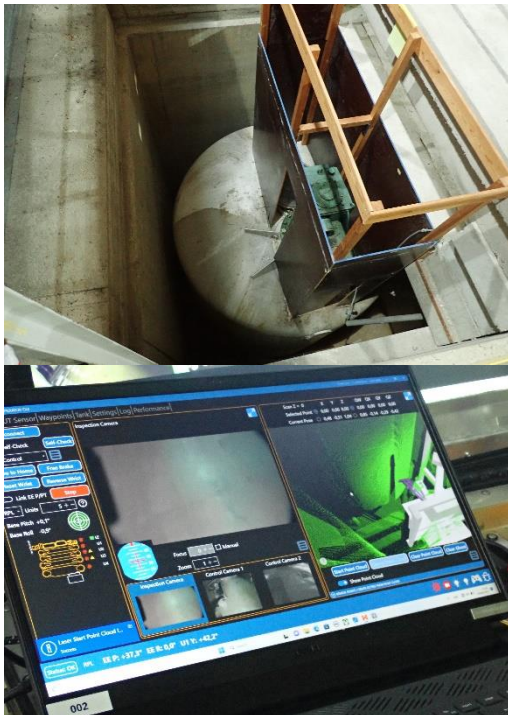


“Innovative ideas had a lot of weight in this tender,” says Frankie Vermierdt, project lead for Belgoprocess. “The proposal to use a robot was new, but above all realistic and well thought out.”

## Results

No major preparations, such as building scaffolding or other general protective measures, were required for the inspection. Thanks to Float Arm, the risk associated with working at great heights can be significantly reduced. Furthermore, the exposure of personnel to ionizing radiation and the risk of radioactive contamination is kept to a minimum. In short: an inspection that meets all standards for industrial safety, occupational safety and health.

All measurements of the remote inspection performed with Float Arm were digitized and related to a coordinate system and point cloud.





“The fact that the request for such an important and challenging mission came right after hibot and Vinçotte signed the collaboration agreement is evidence that there is a huge need for automation of inspection works in confined and dangerous spaces”, mentioned Michele Guarnieri, CEO of hibot. He added that “at hibot we were extremely happy with the good results achieved during this mission, and delighted to know that, thanks to Float Arm, no operators had to be exposed to dangers. We are changing the way inspection is carried out, and making the world a safer place with robotics.”



“The collaboration with Vinçotte went very smoothly, through all phases of the project. We are very satisfied with the results of the Floatarm inspection,” Frankie concludes. “We are already preparing for the next project and look forward to continuing our collaboration.”

## **About Belgoprocess**

Belgoprocess is a Belgian company, responsible for the processing, conditioning and storage of radioactive waste. In addition, Belgoprocess focuses on the dismantling and remediation of decommissioned nuclear installations and the decontamination of materials. Belgoprocess carries out these activities on the site of the former Eurochemic reprocessing plant in Dessel (site 1) and in Mol (site 2).

## **About Vinçotte**

Established in 1872, Vinçotte is the largest inspection, auditing and certification company in Belgium and offers over 220 services in the fields of inspection, certification, conformity assessment and training. Its 2,000 employees dedicate themselves every day to increasing the safety, efficiency and sustainability of society. Vinçotte is active in the Benelux region and conducts over 5,000 inspections each day. It has more than 100,000 clients, comprising multinationals, SMEs, sole traders and individuals.

It was merged with the Kiwa group in May 2022 to further expand its business domain, not only in Europe but also in Asia, America and Oceania.

For more information, see [www.vincotte.be](http://www.vincotte.be)

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## **About hibot**

Established in 2004, hibot is a robotics start-up originating from within the Tokyo Institute of Technology, committed to realizing a safer and more sustainable world by creating new trends in infrastructure inspection and maintenance. Hibot develops and utilizes AI-powered remotely controlled robots that allow human beings to be removed from dirty, dangerous or demanding working environments. Hibot's robots have been applied in search and rescue missions, and have been used during decommissioning work at Japan's Fukushima No. 1 nuclear power plant. CEO: Michele Guarnieri.

For more information, see <http://www.hibot.co.jp>

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