

Industry Brief

# Robotic inspection more accessible than ever

RaaS creates new opportunities for savings, safety, and efficiency





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equipment provider  
with a long history of  
innovation in the industry.**

## RaaS is changing the inspection business

The concept of Robotics-as-a-Service (RaaS) is changing the game for many industries, including the inspection industry. RaaS is a subscription-based model that makes robotic inspection technology an attractive proposition for many companies. Market predictions surrounding RaaS paint a telling picture as industry analysts project there will be 1.3 million installations by 2026<sup>i</sup> with a CAGR of 17%.<sup>ii</sup>

Innovation is critical to the success of any business, and the inspection industry is no exception. Companies that fail to embrace new technology risk falling behind their competitors and losing market share. While using robotics to perform inspections in confined spaces is not new, RaaS makes the practice more accessible to more companies, including operators, asset managers, and inspection service providers that may not have the financial resources to purchase and maintain robotic equipment. With this accessibility comes a host of benefits for companies, including savings, safety, and inspection quality.

The proving ground for RaaS has been rigorous, and the model has proven successful in many industries. For years, the health care industry has employed RaaS to provide access to medical equipment, such as MRI and X-ray machines. In the manufacturing industry, RaaS provides access to robots and other automation equipment to augment human workers.

Waygate Technologies is a leading inspection equipment provider with a long history of innovation in the industry. The company's foray into the RaaS arena is no exception. Waygate Technologies leads the way in RaaS adoption, providing companies in oil and gas, chemical, and power generation with easier access to robotic inspection services that improve safety, quality, and efficiency.

# Robotics keep companies ahead of the curve

With roots tracing to medical robotics focused on minimally invasive intervention and diagnostics, using robots for confined-space inspection has become increasingly popular. Businesses in industrial settings have quickly recognized the opportunities to minimize risks and costs while improving efficiencies through robotic inspection.

The trend in the inspection industry is to do less confined-space entry. Confined spaces pose many risks to technicians, including exposure to hazardous substances, low oxygen levels, and physical hazards. Robotics reduce or eliminate these dangers, making inspections safer.

Robotic inspection services provide more consistent and detailed reports than human technicians. Using robotics reduces the person-hours, but the biggest savings are derived from minimization of the preparation work and elimination of the supporting resources required for human entry.

Generational changes in the workforce are driving the adoption of robotics in the inspection industry. Veteran technicians who have spent years working in confined spaces, now want to avoid them. Many have witnessed the dangers and health risks involved in entering narrow tubes. As a result, they seek safer ways to extend their careers.

Meanwhile, younger technicians embrace new approaches and advanced technology. Growing up with technology, they comfortably use digital tools and data to enhance their work. For example, digital twins can help simulate different scenarios, improving their understanding of assets. These tools reduce human involvement, improving inspection quality and consistency by using data more efficiently.

Robotics technology may bridge the generation gap. Younger technicians can help veteran technicians embrace new technology, retaining experienced workers and transferring knowledge to the next generation. Technicians of all ages can leverage robotics technology to improve inspection processes by working together.



# Path to robotics is easy with RaaS

## Financial upside

One of the most significant advantages of RaaS is that it can help overcome barriers to entry to robotic inspection. Typically, robots are expensive and can be hard to maintain, putting them out of reach for many companies. However, with RaaS, the robot's equipment and maintenance costs are shifted to the provider. This model enables companies to access cutting-edge technology without making a significant capital investment upfront. With it, businesses avoid capital expenses (CAPEX) and contract for access to the technology. Companies can save on debt and taxes, as these expenses can be deducted from taxable income. RaaS can provide significant savings for businesses, particularly in industries where capital expenditures are high. Some industries note savings as high as 65% over traditional human workers.<sup>iii</sup>

Moreover, RaaS can deliver predictability to operations. Since inspection tasks are automated, RaaS provides consistent task performance and uniform data collection and analysis. This consistency can help businesses optimize their operations, reduce the risk of errors and downtime, and improve overall efficiency and productivity.

## Savings come in many forms, and RaaS can help drive those savings with these additional benefits:

- **Training:** Traditional robotic inspection methods require businesses to invest in training programs for employees to operate and maintain the equipment. With RaaS, that expense is included in the program cost.
- **Support:** RaaS providers offer various support services, such as maintenance and repair. This helps businesses get the most out of their robotics and ensures they are always ready to go.
- **Scalability:** RaaS is a scalable solution that adapts easily to meet the changing needs of businesses. Organizations can add or reduce the number of robots as business needs change.
- **Obsolescence avoidance:** The robotics company takes responsibility for updating and upgrading the equipment, ensuring that businesses have access to the latest technology without investing in costly upgrades.
- **Risk abatement:** One of the main advantages of using RaaS for confined-space inspections is the reduction of risk. Human inspections of confined spaces can be hazardous. However, by engaging RaaS, asset managers can access equipment, training, and support that eliminates the need for human inspections, reducing the possibility of accidents and injuries. This not only ensures the safety of workers, but also lowers insurance costs and other labor-related expenses.
- **Efficiency:** Another benefit of RaaS is increased efficiency in the inspection process. With RaaS, planning cycles are shorter because the equipment and trained technicians are always on hand. In traditional inspection processes, scheduling resources, such as emergency services and monitoring technicians, can take weeks or even months.
- **Downtime minimized:** Facility shutdowns for inspection are minimized, controlling costs that can quickly soar to tens of thousands of dollars. The RaaS model is particularly useful for companies with critical infrastructure or the need to maintain a high production level.
- **Quality control:** Robotics deliver confined space inspections that meet the highest quality standards. With a digital twin, robots can quickly assess trouble areas and help businesses avoid costly mistakes and unplanned repairs.
- **Workforce for the future:** RaaS ensures that workers are safe, efficient, and working smarter. The system enables inspection teams to make better decisions more quickly directly at the inspection site.



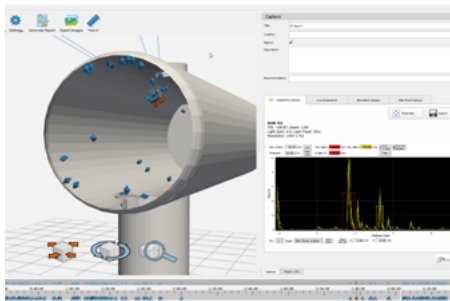
# Waygate Technologies leads the way in confined-space RaaS

The Waygate Technologies RaaS offering includes three primary components: the BIKE platform, a pan-tilt-zoom (PTZ) camera, and the 3D LOC software and 3D LOC POLE.<sup>iv</sup>



The BIKE platform is a magnetic-wheeled robot capable of inspecting power plant facilities and multiple applications in the oil and gas industry, such as vessel or pipe inspection. The robot can reach locations previously inaccessible to humans due to size constraints, temperature, immersion in liquids, or safety reasons. It makes inspections safer and more efficient.

The PTZ HD30 is a powerful industrial-grade inspection camera for remote visual inspections. The camera is equipped with a 30x optical zoom, which enables gathering very sharp images even from great distances.



The 3D LOC POLE provides a full 3D spatial awareness of the robot in the asset and geotags inspection images to the PTZ camera. With this precise positioning, future inspections are fully automated.

Entry into confined spaces no longer needs to be a risk to the safety and health of those involved in operations, thanks to robotic vessel inspection solutions from Waygate Technologies. With the BIKE platform, point-tilt-zoom (PTZ) camera, and 3D LOC software and 3D LOC POLE, asset owners increase safety while ensuring more accurate, consistent, and efficient inspections.

To help asset owners quickly realize the benefits of robotic inspection, Waygate Technologies includes the creation of a 3D model, or digital twin, containing all the inspection data in its RaaS offering. With this, inspection reports can be generated automatically, and data can be uploaded into asset performance management systems as needed.

Waygate Technologies' RaaS solution is a turnkey offering at a fraction of the cost of purchasing a comprehensive robotic inspection system. RaaS also includes one day of on-site training and access to the online academy for additional training resources. Included on-site three-day first mission support is augmented by unlimited online consultation with technical support teams.

Repairs of up to \$10,000 per year are also included in the RaaS solution, as are software and hardware upgrades. Additionally, yearly maintenance and calibration are provided for the duration of the contract. These features help companies minimize the risk of unexpected expenses and downtime due to equipment failure.

**Waygate Technologies' complete RaaS solution for confined-space inspection delivers savings, improved efficiency, and greater safety.**

# Final thoughts

Robotics-as-a-Service (RaaS) is a game changer for the inspection industry. By making it easier to leverage robotics technology, Waygate Technologies helps companies improve safety, quality, and cost savings while reducing the need for human entry into confined spaces. The company is leading the way in this arena, offering innovative solutions that help businesses stay ahead of the curve.

If you're not quite ready to take on robotic inspection in-house, many service providers are already incorporating robotics into their offerings. By partnering with a service provider that offers RaaS, you can benefit from the use of robots for inspections while still working with a trusted partner. These service providers can supply the necessary inspections and assessments you need while leveraging the advantages of robotics.

RaaS offers many advantages, including shorter planning cycles, predictable operating expenses, no downtime, and the ability to redeploy personnel and experience. These benefits make RaaS attractive for companies interested in improving their inspection processes and staying competitive in today's fast-paced business environment.

## References

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## Considering RaaS for confined space inspections?

Learn more at [waygate-tech.com/RaaS](https://waygate-tech.com/RaaS).

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