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TechBriefs
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U.S. DEPARTMENT OF ENERGY • SAVANNAH RIVER SITE • AIKEN • SC   srnl.doe.gov

At a glance

- > Unique maneuverability
- > Manual or computer controlled operation
- > Numerous industrial applications
- > Multiple payload capabilities
- > Patent pending

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Orangutank™: The Pipe Traveler

The Pipe Traveler (Orangutank™) is a remote controlled, tethered robotic platform for traveling from one pipe to another using a network of vertical pipes for support. The Orangutank is designed to deliver payloads for various applications including, but not limited to; sampling equipment, spray nozzles, radiological analysis equipment, or other equipment for cleanup and remediation activities.

Versatile Design

The Orangutank™ combines specialized robotic grippers to provide gripping and rotational capability to maneuver from pipeto- pipe without ever having to descend to the floor. The extending and retracting arms allow for reaching between the vertical pipes, maintaining a constant grip by one

arm while swinging into position for a stronghold by the other arm. The flexible and extendable arms of the Orangutank™ allows for variances in pipe spacing and configurations.
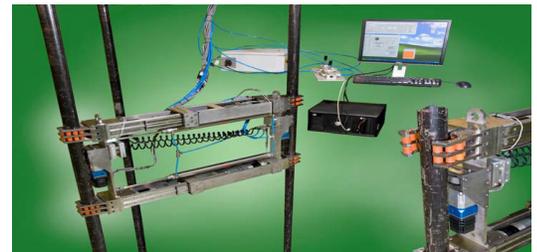
No other robotic platform can negotiate vertical pipe forests to achieve the desired travel of the Orangutank™. The device is designed to allow it to "swing" from one pipe to another similar to its namesake, the orangutan who swings from tree limb to tree limb in order to navigate through the forest.

Multiple Applications

While the Orangutank™ was originally designed for inspection, sampling and removal of radioactive waste products at Savannah River Site, the capabilities of the equipment would also allow for its use in any application involving a forest of vertical pipes such as remote chemical cleanup operations, construction or demolition activities, and petrochemical processes just to name a few.

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Technology transfer

The Savannah River National Laboratory (SRNL) is the U.S. Department of Energy's (DOE) applied research and development laboratory at the Savannah River Site (SRS).

With its wide spectrum and expertise in areas such as homeland security, hydrogen technology, materials, sensors, and environmental science, SRNL's cutting edge technology delivers high dividends to its customers.

The management and operating contractor for SRS and SRNL is Savannah River Nuclear Solutions, LLC. SRNS is responsible for transferring its technologies to the private sector so that these technologies may have the collateral benefit of enhancing U.S. economic competitiveness.

Patents and Licenses

A patent application has been filed for The Pipe Traveler with the U.S. Patent and Trademark Office.

Partnering opportunities

SRNS invites interested companies with proven capabilities in this area of expertise to enter into a licensing agreement with SRNS to market this nuclear material detection system. Interested companies will be requested to submit a business plan setting forth company qualifications, strategies, activities, and milestones for commercializing this invention.

Qualifications should include past experience at bringing similar products to market, reasonable schedule for product launch, sufficient manufacturing capacity, established distribution networks, and evidence of sufficient financial resources for product development and launch.

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