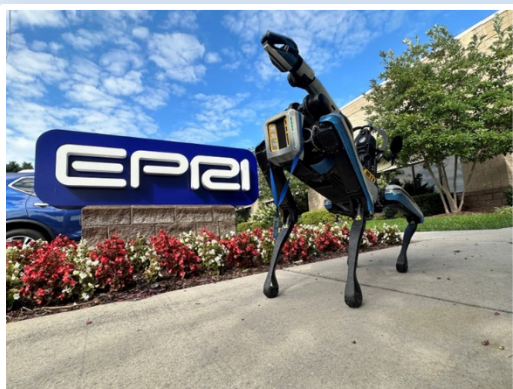


UNMANNED MOBILE TECHNOLOGIES COLLABORATION GROUP



One of EPRI's two Boston Dynamics SPOT units, which have already been used for electrical panel manipulation testing, cybersecurity, and EMI/RFI testing.

PROJECT HIGHLIGHTS

This project seeks to accelerate adoption of unmanned technologies in order to:

- increase worker safety by reducing exposure to hazardous conditions
- reduce costs by working more effectively and efficiently, and reducing or eliminating outages
- create an exchange of operational experience

Background, Objectives, and New Learnings

Over the last decade, commercial unmanned aerial, submersible and ground robotic systems have proliferated in the electrical utility space. They have proven their effectiveness in tasks where the environment is too hazardous for humans (such as inspections in high-radiation areas), too complex to make safe for humans (inspections requiring scaffolding or confined space entry), or otherwise require large complex systems to accomplish with humans (aerial and underwater inspections where manned craft were previously used).

While there have already been many successful implementations of these technologies, many other transformative use cases are just now being explored by utilities. In order to accelerate the use of these technologies to reduce costs, improve task effectiveness, and improve safety, a space for utilities to exchange operating experience while providing feedback to EPRI research is critical.

This project intends to foster adoption of unmanned robotic technologies by utilities across EPRI's Nuclear, ED&CS, and Generation sectors by establishing several critical services:

- An Unmanned Technologies User Group to foster use case and operational experience exchanges across the utility space.
- An online Unmanned Technologies Forum site to allow for direct communication between program owners.
- An annual Unmanned Technologies Expo that will act as a utility-focused meeting to bring together program owners and technology developers/integrators.
- Support and promote new unmanned technologies use case evaluations with members to drive technology adoption.
- Evaluate gaps in availability of training programs and provide support to help fill those gaps.
- Foster a communication path between program owners and manufacturers of systems to promote creation of industry-needed tools.

Benefits

This project should benefit utilities by accelerating the application of unmanned robotic technologies for utility applications. These technologies have already been shown to:

- Increase worker safety by reducing the need for physical presence in hazardous conditions.
- Reduce costs through elimination of high-risk tasks, such as scaffolding or tank draining.
- Improve uptime by allowing for tasks and inspections that normally require down-power or an outage to be performed while operating.
- Improve uptime by facilitating autonomous walkdowns and more frequent and/or thorough inspections in hazardous areas.

This project should provide public benefit by helping utilities improve grid reliability and safety, and possibly reducing costs.

Project Approach and Summary

This project intends to accelerate implementation of unmanned robotic technologies at utilities by:

1. Creating a user group aimed at fostering exchange of operating experience.
2. Building other tools for information exchange such as a forum site.
3. Holding an Unmanned Technologies Expo to link program owners to manufacturers and system integrators.
4. Providing support to members as they demonstrate new use cases and disseminating lessons learned.
5. Evaluating industry needs for training and development.

Deliverables

The deliverables for this project are expected to include:

- Unmanned Technologies User Group with regular webcasts.
- Unmanned Technologies Forum site or similar operating experience exchange site.

- Annual Unmanned Technologies Expo
- Bulletins and other highlight media showing results and lessons learned from group members.

Price of Project

Pricing for this project ranges from \$20,000 to \$40,000 per year for utilities, and \$15,000 per year for non-utilities, with a 3-year commitment.

The metrics for utilities are based on total generation (Total MW), distribution (GWh), and transmission (Peak MW).

This project is eligible for self-directed funds (SDF).

Project Status and Schedule

This project aims to launch in 2024 and is expected to continue for at least three years.

Who Should Join

Utilities that are already using Unmanned Technologies such as drones, Ground Robotic Systems (e.g., SPOT), or submersibles to support operation, as well as those expecting to implement such systems in the near future.

Additionally, next-generation system manufacturers and other non-utility companies planning to make use of unmanned technologies in their designs and would like to learn from current utility operational experience are also encouraged to join.

Contact Information

For more information, contact the EPRI Customer Assistance Center at 800.313.3774 (askepri@epri.com).

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