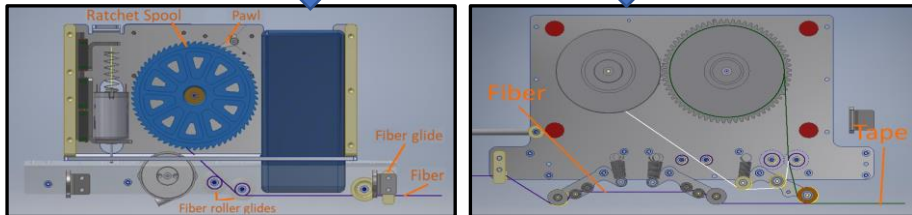
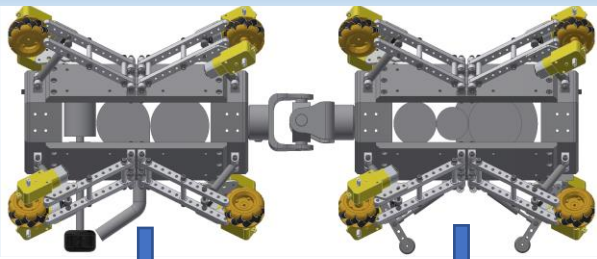


Fiber optic deployment robotic tool (FODRT) for pipeline applications

FODRT Prototype schematic



Pipe Diameter Range	8" – nominal (6" up to 12" and greater is possible)
Maximum Speed	15 feet per minute
Fiber Capacity	2500 Feet
Tape Capacity	250 Feet (per spool)
Material & Weight	Aluminum alloy / ~ 10lbs

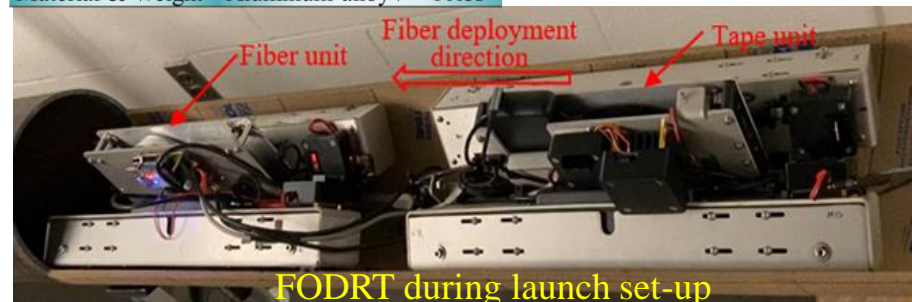
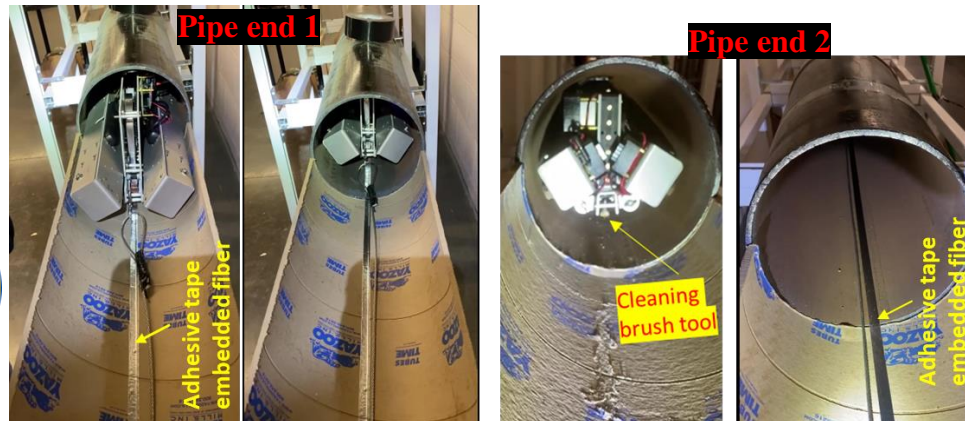


Joint Patent



- Self-Propelled / Remotely Controlled
- Intrinsic Invert Orientation –COG / Mecanum/wheels / Scissor Centering
- Self- Contained Material Storage
- Mechanized Feed Systems
- Application Path Abrading and Air Blow Off

Snapshots of FODRT during fiber-embedding deployment internal to 8" pipeline



	Metric	State of the Art	Proposed
Technology Impact / Summary	Deployed Fiber Optic Sensor Cost Per km	>\$5000 / km, <i>external to pipe</i>	< \$500 / km, <i>internal to pipe</i>
		❖ Unprecedented Capability for In-Situ fiber-sensor Embedding inside pipeline at Scale for an Economical Cost	
		❖ Fiber Optic Sensing and Commercial NDE Technique Synergy with Artificial Intelligence Data Analytics for Defect Identification and Localization	
	❖ New "Embedded Intelligence" Imparted By Real-Time Monitoring and an AI Classification System Approach		