OPERATIONS DOCUMENT 375

STANDARD OPERATING PROCEDURES FOR AUTONOMOUS MOBILE ROBOT DEPLOYMENT AND MAINTENANCE

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1. PURPOSE AND SCOPE

1. This Operations Document ("Document") establishes binding operational procedures and protocols for the deployment, maintenance, and decommissioning of Polar Dynamics Robotics, Inc. ("Company") autonomous mobile robots ("AMRs") in temperature-controlled environments.

2. This Document applies to all Company personnel involved in AMR operations, including but not limited to field technicians, deployment specialists, maintenance engineers, and operational supervisors.

2. DEFINITIONS

1. "IceNav System" means the Company's proprietary cold-environment navigation and operation platform.

2. "Critical Operating Temperature" means any ambient temperature below -30 C (-22 F).

3. "Deployment Zone" means any customer facility where Company AMRs are installed and operational.

4. "Thermal Management Protocol" or "TMP" means the Company's standardized procedures for maintaining optimal AMR operating temperatures.

3. DEPLOYMENT PROCEDURES

1. Pre-Deployment Assessment

a) Conduct comprehensive site survey of Deployment Zone

b) Document all thermal zones and transition areas

c) Map facility layout using IceNav mapping protocols

d) Verify facility compliance with Company's Technical Specification 274-B

2. Installation Requirements

a) Calibrate IceNav sensors for specific facility conditions

b) Install thermal monitoring beacons at prescribed intervals

c) Configure zone-specific operating parameters

d) Validate wireless communication coverage throughout facility

4. MAINTENANCE PROTOCOLS

1. Scheduled Maintenance

a) Perform weekly diagnostic scans of IceNav systems

b) Conduct monthly thermal management system inspections

c) Execute quarterly actuator performance assessments

d) Complete bi-annual full system calibration

2. Emergency Maintenance

a) Response time requirements:

- Critical failures: 2 hours
- Major disruptions: 4 hours
- Minor issues: 24 hours

b) Document all emergency interventions in Company's maintenance log

c) Submit incident reports within 24 hours of resolution

5. SAFETY AND COMPLIANCE

1. Temperature Monitoring

a) Maintain continuous monitoring of AMR internal temperatures

b) Log all instances of operation below Critical Operating Temperature

c) Implement automatic shutdown procedures when safety thresholds are exceeded

2. Regulatory Compliance

a) Adhere to all applicable OSHA regulations

b) Maintain compliance with ISO 10218-1 and ISO 10218-2

c) Follow ANSI/RIA R15.06 safety requirements

d) Document all safety incidents per Company Policy 127

6. QUALITY CONTROL

1. Performance Metrics

a) Monitor and record:

- Navigation accuracy rates
- Thermal management efficiency
- Battery performance in cold environments
- System uptime percentage

2. Quality Assurance

a) Conduct monthly performance reviews

b) Validate sensor calibration accuracy

c) Review and analyze error logs

d) Perform quarterly system optimization

7. DECOMMISSIONING PROCEDURES

1. AMR Removal

a) Execute systematic shutdown sequence

b) Remove all Company-owned equipment

c) Secure all proprietary software and data

d) Document final performance metrics

2. Site Restoration

a) Remove all installed beacons and markers

b) Restore any modified facility infrastructure

c) Obtain customer sign-off on completion

8. CONFIDENTIALITY AND PROPRIETARY RIGHTS

1. All procedures, protocols, and technical specifications contained herein are confidential and proprietary to the Company.

2. This Document may not be reproduced, distributed, or shared without express written authorization from the Company's Legal Department.

9. AMENDMENTS AND UPDATES

1. The Company reserves the right to modify this Document at any time.

2. All amendments must be approved by the Chief Operations Officer and Chief Technology Officer.

AUTHORIZATION

APPROVED AND ADOPTED by the undersigned duly authorized officers of Polar Dynamics Robotics, Inc.

Sarah Nordstrom

Chief Operations Officer

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Chief Technology Officer

Date: January 1, 2024

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